Science, Mathematics & English Language Arts/Literacy, including Colorado Spanish Language Arts

# Colorado Measures of Academic Success
# Colorado Alternate Assessment Program

# Interpretive Guide to Assessment Reports

A Guide for Parents and Educators

2023

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# 1.0 General Information for Parents and Educators

## 1.1 Purpose of This Guide

This guide provides information on the individual student performance reports, school reports, and district reports provided for the Colorado Measures of Academic Success (CMAS) and Colorado Alternate (CoAlt) assessment results. Section 2.0 outlines and explains elements of the individual student report and may be shared with parents and educators to help them understand their students' test results. Sections 3.0 through 9.0 outline and explain elements of the school and district reports.

Please note that the sample reports included in this guide are for illustration purposes only. They are provided to show the basic layout of the reports and the information they provide. Sample reports do not include actual data from any administration.

## 1.2 Background

### 1.2.1 Colorado Measures of Academic Success (CMAS) and Colorado Alternate (CoAlt) Assessments

The CMAS assessments are Colorado's standards-based assessments designed to measure the Colorado Academic Standards (CAS) in the content areas of mathematics, English language arts (ELA), and science. Eligible English learners in grades 3 and 4 may take the Colorado Spanish Language Arts (CSLA) form as an accommodation in place of an ELA form. A small number of students with the most significant cognitive disabilities who meet specific criteria may demonstrate their content knowledge on the CoAlt assessments which measure the Extended Evidence Outcomes (EEOs) of the CAS. This guide addresses CoAlt science assessments specifically. The purpose of the CMAS and CoAlt assessments are to indicate the degree to which students have mastered the expectations of the CAS in each content area at the end of the tested grade level. Results are intended to provide one measure of a student's academic progress relative to the CAS. Results should be taken into consideration alongside other achievement information available locally.

CMAS and CoAlt science assessments were first administered across Colorado in 2013-2014 and CMAS mathematics and ELA assessments were first administered in 2014-2015.

The following table includes the content areas and grade levels that were assessed across Colorado in spring 2023.

| Content Area | 2023 Grades |
|---|---|
| ELA* | Grades 3-8 |
| Mathematics | Grades 3-8 |
| Science | Grade 5, 8, and 11 |

*As a requirement of Colorado School Law C.R.S. §22-7-1006.3 (4) (a) and (b), Spanish-speaking students in grades 3 and 4 who meet established eligibility criteria may take the CSLA form in place of the ELA form of the CMAS assessment.

CMAS Mathematics, ELA, and Science
Available in online and paper formats, CMAS assessments are developed by Colorado educators, the Colorado Department of Education, and the testing contractor.

CSLA
Available in paper format, CSLA forms are designed for students with a primary or home language of Spanish who are enrolled in bilingual programs in grades 3 and 4. The CSLA forms serve as accommodated versions of the CMAS ELA assessments. They are parallel and comparable to CMAS ELA in test design, item type, scoring, and reporting. Therefore, separate CSLA reports are not included throughout this guide (please refer to ELA reporting information and examples).

### 1.2.2 Colorado Alternate (CoAlt) Assessments – Additional Information

CoAlt is the standards-based assessment designed specifically for students with the most significant cognitive disabilities who, even with accommodations, are unable to participate in CMAS. CoAlt assesses the performance expectations of the EEOs of the CAS and students must meet participation requirements to take the assessments. CoAlt assessments are administered in a one-on-one setting between teachers and students. Teachers use CoAlt scoring rubrics to evaluate student responses before submitting performance results. For each CMAS assessment there is a corresponding CoAlt assessment; however, this guide only includes the CoAlt science assessments. The CoAlt mathematics and ELA assessments were developed by the Dynamic Learning Maps (DLM) consortium and reports for those assessments are not included in this guide.

## 1.3 Reporting Results

### 1.3.1 Sharing Results with Parents

As a requirement of Colorado School Law C.R.S. §22-7-1006.3 (8) (a), personnel within the district and school must share with and explain to the parent or legal guardian of each student the student's state assessment results. When discussing aggregated results with parents, districts and schools are strongly encouraged to closely review their local participation rates as participation rates are critical to interpretation.

### 1.3.2 Confidentiality of Reporting Results

The results of individual student performance on all Colorado assessments are confidential and may be released only in accordance with the Family Educational Rights and Privacy Act of 1974 (20 U.S.C. Section 1232g). When possible, aggregated student performance data representing 16 or more students is made available to the public. Additional data suppression rules are also applied to aggregated reports to protect student privacy. Aggregated reports do not contain the names of individual students or teachers.

## 1.4 Spring 2023 Interpretation Considerations

### 1.4.1 COVID-19

Beginning in spring 2020, the COVID-19 pandemic impacted many aspects of education in Colorado, resulting in reduced, disrupted and/or adjusted learning opportunities for many students. While schools continued to transition to increased normalcy throughout the 2021-2022 and 2022-2023 school years, the pandemic's sustained impact on learning experiences for some students should be taken into consideration when interpreting spring 2023 results.

### 1.4.2 Participation Rates

Participation in the state assessments varies across schools, grade levels, and student groups. Participation information should always be reviewed and taken into consideration thoughtfully when

interpreting state assessment results, particularly at the district and school levels. As participation rates decrease and vary across student, school and district groups, challenges with interpreting results will increase. Depending on the specific school or district, some student groups may be overrepresented in the results and others may be underrepresented. Participation information may indicate that in some cases, conclusions should be drawn with caution or completely avoided. Data will not support all cross-state comparisons and historical uses when participation rates are low. Additionally, participation rates and differences across years should be considered for any comparisons that are made across years.

### 1.4.3 Science Assessment Changes

The CMAS and CoAlt science assessments aligned to the 2020 Science CAS were given for the first time in spring 2022. After the initial administration, a standard setting was held to set performance levels on the new assessments. Spring 2023 is the first administration of the updated science assessments with full scoring and reporting. Scores on the updated science assessments cannot be compared to scores from prior years due to the extensive changes to the standards.

# 2.0 A Parent and Educator Guide to Understanding the Colorado Measures of Academic Success (CMAS) and Colorado Alternate (CoAlt) Assessment Student Performance Reports

## 2.1 Program Overview

CMAS, along with CoAlt for students with the most significant cognitive disabilities, are Colorado's standards-based assessments designed to measure the Colorado Academic Standards (CAS). The CAS contain the concepts and skills students are typically expected to learn in order to be successful in the current grade and to make academic progress from year to year. The purpose of CMAS and CoAlt is to indicate the degree to which students have mastered the CAS in the assessed content areas at the end of the tested grade level. CMAS and CoAlt results are intended to provide one measure of a student's academic progress relative to the CAS. An individual student performance report is created for each student who takes a CMAS and CoAlt assessment so parents can understand their student's demonstration of learning of the CAS in the assessed grade level and content area.

As a requirement of Colorado School Law C.R.S. §22-7-1006.3 (4) (a) and (b), Spanish-speaking students in grades 3 and 4 who meet established eligibility criteria may take the Colorado Spanish language arts (CSLA) form in place of the ELA form. CSLA forms are parallel and comparable to the CMAS ELA forms in test design, item type, scoring, and reporting. Therefore, separate CSLA reports and descriptions are not included in this guide (refer to ELA reporting information and examples).

## 2.2 Performance Levels and Types of Scores on the Student Reports

To understand each part of the individual student performance reports, it is important to become familiar with the types of assessment scores included on the reports. Student performance on the Colorado assessments is described at varying levels on the individual student reports using scale scores, performance levels, and subclaim performance indicators. State, district, and school average results are included in relevant sections of the report to help parents understand how their student's performance compares to that of other students. In some instances, a dash (–) appears in place of average results for a school and/or district. This indicates there were too few student scores (less than 16) to maintain student privacy, and therefore, results are not reported.

### 2.2.1 Scale Scores

A scale score is a numerical value that summarizes student performance. When the points a student earns on an assessment are placed on a common scale, the student's score becomes a scale score. Scale scores adjust for slight differences in difficulty on versions of the assessment that can vary slightly from student to student within a year (referred to as forms of the assessment) or between school years (referred to as administrations). Scale scores allow for comparisons of assessment scores, within a particular grade and subject area, across administrations. As an example, a student who receives a score of 700 on one form of the 7th grade mathematics assessment is expected to score a 700 on any form of the assessment. A student who scored 750 on the 4th grade ELA assessment in 2023 demonstrated the same level of mastery of concepts and skills as an 4th grade student who scored 750 on the ELA test in 2017. Scale scores cannot be used to compare student performance across grades (e.g., grade 4 to grade 7) or subject areas (e.g., ELA to mathematics).

Mathematics and ELA, including CSLA, scale scores for the overall test range from 650 to 850. ELA, including CSLA, reports also provide separate scale scores for reading. Reading scale scores range from 110 to 190.

CMAS Science scale scores for the overall test range from 650-850. Science reports also provide separate scale scores for content standards and Science and Engineering Practices (referred to as reporting categories). The content standards scale score ranges from 400-550. .

CoAlt Science scale scores are reported for the overall test and range from 150 to 350.

### 2.2.2 Performance Levels

Scale scores are used to determine a student's performance level for the overall assessment. Performance levels describe the concepts and skills students are expected to demonstrate within a certain range of scores at the overall assessment level (i.e., ELA, mathematics, or science). Descriptors for each tested grade level and content area are included in **Appendix B** of this document.

CMAS Performance Levels

There are five cross-grade and content area performance levels for CMAS mathematics and ELA, including CSLA, assessments. There are four cross-grade and content area performance levels for CMAS science.

| CMAS Performance Levels | |
|---|---|
| **CMAS Mathematics, ELA, and CSLA** | **CMAS Science** |
| **Level 5:** Exceeded Expectations* | **Level 4:** Exceeded Expectations* |
| **Level 4:** Met Expectations* | **Level 3:** Met Expectations* |
| **Level 3:** Approached Expectations | **Level 2:** Approached Expectations |
| **Level 2:** Partially Met Expectations | **Level 1:** Partially Met Expectations |
| **Level 1:** Did Not Yet Meet Expectations | |

*Students in the top two performance levels met or exceeded the expectations of the CAS and are considered on track for the next grade level in the content areas of language arts, mathematics, or science. Students in the remaining performance levels may need academic support to successfully engage in further studies in the content area.

CoAlt Performance Levels
CoAlt science includes four performance levels.

| CoAlt Performance Levels |
| --- |
| **Science** |
| Advanced* |
| At Target* |
| Approaching Target |
| Emerging |

*The top two performance levels indicate that with appropriate supports, the student is prepared for further study in the content area.

### 2.2.3 Percentile Ranking

A percentile ranking is included on all CMAS individual student performance reports. The percentile ranking shows how well the student performed in comparison to other students in the state. For example, a student in the 75th percentile performed better than 75 percent of students in the state.

### 2.2.4 Additional Performance Indicators

In addition to scale scores and performance levels, individual student performance reports include other indicators to help parents and educators understand their student's performance. These performance indicators are described below for each assessment.

Note: Percent earned refers to the number of points earned out of the total number of points possible within a reporting category. The percent earned indicator can only be used to compare performance of the individual student to the average district and average state performance on the specific set of items being considered. Participation rates should be taken into consideration when comparing individual student subclaim performance to state or district average performance. Some groups of items may be more difficult than other sets of items, so unlike the scale score, the percent earned indicator cannot be compared across groups of items or across school years.

CMAS Mathematics and ELA (including CSLA)
CMAS mathematics and ELA, including CSLA, student reports provide subclaim performance graphics comparing the performance of the student, their district, and the state. ELA and CSLA student reports include a reading scale score. A single cut score at 150 indicates a level of performance comparable to the Met Expectations cut on the overall ELA assessment. This cut is consistent across years and can be used in trend comparisons.

Subclaim performance on the assessments is reported as the percent of points earned for overall writing and for each of the writing, reading, and mathematics subclaims. Percent earned refers to the number of points earned out of the total number of points possible within a reporting category.

For the overall writing claim and each subclaim, a marker indicates the average performance on that claim or subclaim of students at the Met Expectations cut score point on the overall test. This indicator

provides criterion referenced context for the subclaims by showing how students who met the content based overall expectations performed.

CMAS Science

CMAS science reports include a performance indicator for the content standards (Physical, Life, and Earth and Space Science) and Science and Engineering Practices (SEP), which indicates whether a student's scale score is Lower than Average, Average, or Higher than Average. These indicators are based on the state mean and one standard deviation below and above that mean. The average scale score of students at the Met Expectations cut score point is indicated in the same graph.

CMAS science reports include percent earned indicators for Grade Level Expectations (GLEs) in elementary school and Prepared Graduate Statements (PGs)* in middle school and high school.

*PGs and GLEs are described more fully in **Appendix C**.

CoAlt Science
CoAlt science reports include the percent of points earned for the content standards (Physical, Life, and Earth and Space Science) and Science and Engineering Practices (SEP).

## 2.3 Description of Individual Student Performance Reports for CMAS Mathematics and ELA, including CSLA

Sample CMAS grade 3 ELA and mathematics Student Performance Reports are displayed in Sections 2.4 and 2.5. Each page of the sample report is included individually. The sample report provides the same type of information included on all mathematics and ELA, including CLSA, reports. To learn more about each part of the Student Performance Report, match the white letters in gray circles from the sample report to the information included with the corresponding letters on the following pages.

### 2.3.1 General Information

Refer to page 1 of the Student Performance Report.

**A. Identification Information**
The student's name, state assigned student identification number (SASID), birthdate, school, and district. Students are identified by first name, middle initial, and last name. If the student has a preferred first name that is different than their legal name, it is listed in parentheses.

**B. Test Date**
The season and year the student took the assessment.

**C. Subject Area**
The subject area of the student's assessment (i.e., mathematics or ELA, including CSLA).

**D. Grade Level**
The grade level of the student's assessment.

**E. Explanation of Overall Performance**
A brief explanation of the overall assessment results is given to help understand the information provided in the box below the explanation.

### 2.3.2 Overall Assessment Scores

Refer to page 1 of the Student Performance Report.

**F. Overall Scale Score, Performance Level, and Percentile Rank**

The student's overall scale score (the number between 650 and 850) and performance level (Exceeded Expectations, Met Expectations, Approached Expectations, Partially Met Expectations, Did Not Yet Meet Expectations) are provided. For each content area, students receive an overall scale score and based on that score, are placed in one of five performance levels, with Level 5 indicating the student exceeded expectations and Level 1 indicating the student did not yet meet expectations (see **Appendix A** for more information on scale scores and **Appendix B** for more information on performance levels). The percentile ranking shows how well the student performed in comparison to other students in the state. For example, a student in the 41st percentile performed better than 41 percent of students in the state.

**G. Graphical Representation of Overall Performance: Overall Scale Score and Performance Level**

This graphic provides an illustration of the five performance levels and identifies where the student's overall scale score is positioned along the performance scale. The student's score is indicated by the black diamond positioned along the range of overall scale scores that define each performance level. The arrows represent the probable range, which is based on the standard error of measurement at that scale score and indicates the range of scores the student would likely receive if the assessment were taken multiple times. The probable range of scores differs across forms and across levels of performance within forms. The ranges of overall scale scores are indicated underneath the graphic. For all grade levels in mathematics and ELA, including CSLA, students cross into Partially Met Expectations (performance level 2) when they achieve a scale score of 700, Approached Expectations (performance level 3) when they achieve a scale score of 725, and Met Expectations (performance level 4) when they achieve a scale score of 750. The scale score needed to reach Exceeded Expectations (performance level 5) varies. Refer to **Appendix A** for the full list of scale score ranges for each performance level.

Average scale scores at the school, district, and state levels are identified to the left of the graph and are indicated by smaller diamonds on the graph. The location of the diamonds can be compared to see how the student performed in comparison to the average student in their school, district, or the state. If the student's score diamond is to the right of the school, district, or state average diamond, then the student performed better than that group's average. If the student's diamond is to the left of the school, district, or state diamond, then on average, that group performed better than the student. Interpretations of, and comparisons between, scores of the student, school, district, and state levels should be made with caution or completely avoided when participation is low (see H. Percent of Students Tested).

The dotted lines on the graph show the lowest scores needed to achieve Partially Met Expectations, Approached Expectations, Met Expectations, and Exceeded Expectations performance levels. The scale scores representing each of those scores are indicated on the bottom of the graph.

**H. Percent of Students Tested**

The percent of students tested at the school, district, and state levels provide participation information that should be considered when interpreting aggregated results. Interpretations of, and comparisons of scores between, the student, school, district, and state levels should be made with caution or completely avoided when participation is low.

**I. Percent of Students at Each Performance Level**

The bars beneath the overall performance graphic show the percentage of students within Colorado who performed at each of the five performance levels and give a sense of how the student's performance compares to other students' performance in Colorado. Interpretations of, and comparisons between, scores of the student and state levels should be made with caution or completely avoided when participation is low (see H. Percent of Students Tested).

**J. Performance Level Descriptor (PLD)**

PLDs provide details about the specific grade-level content area concepts and skills typically demonstrated by students within a performance level. The PLD that corresponds to the student's performance level is included on the report. The full list of performance level descriptors for each grade level and content area is included in **Appendix B** of this document. For students scoring in Level 1: Did Not Yet Meet Expectations, the PLD for Level 2 is provided.

**K. QR Code**

Scan the QR code to view a video about student performance displayed on the report. Links to sample questions, the Colorado Academic Standards, and other parent resources (including the full version of the PLD text) are also available through the QR code. Alternatively, access the materials by visiting https://coassessments.com/parentsandguardians.

### 2.3.3 Performance by Sub-Reporting Category

Refer to page 2 of the Student Performance Report.

**L. Graph Key**

Explanatory text for the bars in the Percent of Points Earned graph: student's performance, district average, state average, and average of students who just crossed into the Met Expectations overall performance level.

**M. Graphical Representation of Reading Scale Score**

ELA and CSLA student reports include the student's scale score for reading (refer to Section 2.2.1). The student's reading scale score is indicated by the top blue diamond. Arrows around the student's diamond represent the probable range, which is based on the standard error of measurement and indicates the range of scores the student would likely receive if the assessment were taken multiple times. Reading scale scores range from 110 to 190. A single cut score at 150 indicates a level of performance comparable to the Met Expectations cut on the overall ELA/CSLA assessment.

The average scale scores at the school, district, and state levels are identified to the left of the graph and are indicated by smaller diamonds on the graph. The location of the diamonds can be compared to see how the student performed in comparison to the average student in their school,

district, or the state. If the student's score diamond is to the right of the school, district, or state average diamond, then the student performed better than that group's average. If the student's diamond is to the left of the school, district, or state diamond, then on average, that group performed better than the student. Interpretations of, and comparisons between, scores of the student, school, district, and state levels should be made with caution or completely avoided when participation is low (see H. Percent of Students Tested).

**N. Writing Claim and ELA/Math Subclaim Category and Performance Indicators**

Students demonstrate specific skill sets (subclaims) on the assessments that are identified within each reporting category for ELA and CSLA (e.g., Literary Text within Reading and Written Expression within Writing) and mathematics (e.g., Expressing Mathematical Reasoning). Each subclaim category includes the header identifying the subclaim and a graph showing the percent of points earned for each subclaim and the overall Writing claim.

**O. Subclaim Performance Indicator Graphics**

The graph shows the percent of points earned for each reading, writing, or mathematics subclaim. The top bar in each of the figures represents the percent of points earned by the student for each of the subclaim categories and the overall writing claim. Bars representing district and state averages appear below for comparison. The dark vertical line indicates the average percent of points earned by students at the Met Expectations cut score point on the overall test. Interpretations of, and comparisons between, scores of the student, district, and state levels should be made with caution or completely avoided when participation is low (see H. Percent of Students Tested).

<u>The percent of points earned cannot be compared across years because individual items change from year to year. They also cannot be compared across subclaims because the number of items and the difficulty of items may not be the same.</u>

## 2.4 Sample Individual Student Performance Report – CMAS ELA and CSLA

Page 1

**Confidential Student Performance Report**

**Colorado Measures of Academic Success**

Student: **STUDENTFIRST M. STUDENTLAST** (A)

SASID: **1111111111** Birthdate: **MM/DD/YYYY**
School: **ELEMENTARY SCHOOL (0000)**
District: **DISTRICT NAME (0000)**

(B) **Spring 2023**

## English Language Arts/Literacy (C) (D) Grade 3

CMAS is the only assessment given to all Colorado students that measures what students should know and be able to do at the end of each grade. This report describes your student's understanding of Colorado's grade 3 English Language Arts/Literacy expectations. Scan the QR code at the bottom of this page to see a video that will talk you through your student's report.

**Your student's performance is shown as:** (E)

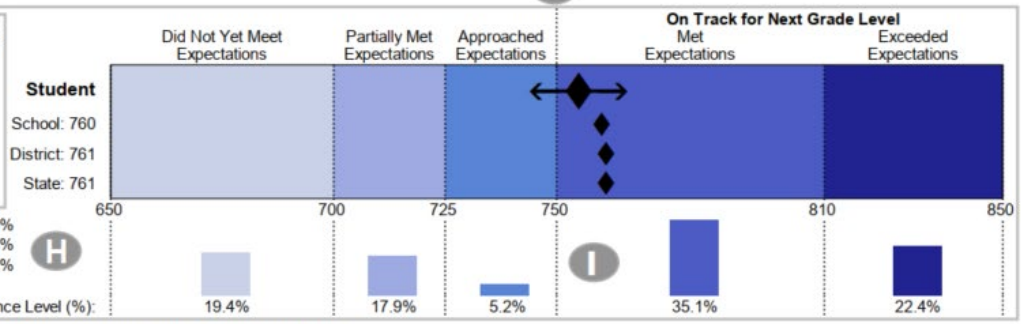
- A scale score: A numerical score based on Colorado's grade 3 English Language Arts/Literacy expectations
- A performance level: Your student's performance level is described at the bottom of this page
- A percentile: How your student performed in comparison to other Colorado students

**Consider as you review this report:**

- Arrows around your student's diamond show where your student may have scored if the assessment was taken multiple times.
- Make school, district, and state comparisons with caution if participation is low.
- Talk with your student's teacher about your student's progress in English Language Arts/Literacy.

(G)

Your Student's Score
(F) **755**
**Met Expectations**
**44th Percentile**




School Participation: 81.5%
District Participation: 81.8%
State Participation: 88.2%

CO Students by Performance Level (%):

### Performance Level Description - Met Expectations

3 STUDENTFIRST **Met Expectations** and is on track for the next grade level. Students in this level typically demonstrate the following:

**Reading** (J)

- With very complex text: the ability to be generally accurate when asking and/or answering questions, showing general understanding of the text when referring to explicit details and examples in the text.
- With moderately complex text: the ability to be generally accurate when asking and/or answering questions, showing general understanding of the text when referring to explicit details and examples in the text.
- With readily accessible text: the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text.

**Writing**

**Written Expression:** students typically address the prompts and provide development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating purposeful and mostly controlled organization. Students typically:

- Develop the topic and/or narrative elements using reasoning, details, text-based evidence, and/or description.
- Develop topic and/or narrative elements in a manner that is mostly appropriate to the task and purpose.
- Demonstrate purposeful organization that is mostly controlled and may include an introduction and/or conclusion.
- Use linking words and phrases, descriptive words, and/or temporal words to express ideas with clarity.

**Knowledge and use of Language and Conventions:** students typically demonstrate command of the conventions of Standard English consistent with edited writing. There are errors in grammar and usage that may occasionally impede understanding.

To view a video report and the full version of the performance level descriptor, visit **https://coassessments.com/parentsandguardians** or access the QR code.

**Watch a video about this report!** (K)

Information about the Colorado Academic Standards measured by this assessment:
**http://www.cde.state.co.us/coreadingwriting/statestandards**.

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Page 2

**STUDENTFIRST M. STUDENTLAST**

# English Language Arts/Literacy

**Confidential**

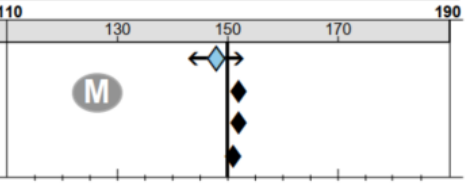
**Subclaim Performance** L

The top diamond in the figure below shows your student's performance in Reading.
The top bar in each of the other graphs shows the percent of points your student earned for writing and specific areas of reading and writing.
District Averages are provided for comparison.
State Averages are provided for comparison.
Average of students at the Met Expectations performance level starting point.

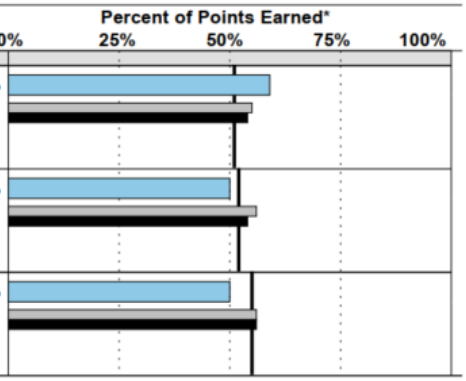
## Reading - Refer to page 1 for participation rates.

The figure below shows your student's scale score in relation to school, district, and state averages.

| Reading Scale Score | |
|---|---|
| Student | 148 |
| School | 152 |
| District | 152 |
| State | 151 |

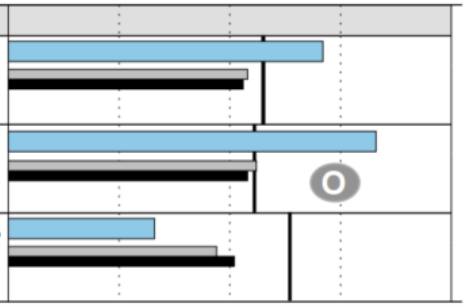



| | Points Possible | Percent of Points Earned* |
|---|---|---|
| **Literary Text** Students read and analyze fiction, drama, and poetry. | 17 | 59% |
| **Informational Text** Students read and analyze nonfiction, history, science, and the arts. | 14 | 50% |
| **Vocabulary** Students use context to determine what words and phrases mean. | 10 | 50% |




## Writing - Refer to page 1 for participation rates. N

| | Points Possible | Percent of Points Earned* |
|---|---|---|
| **Overall** Writing Overall is calculated by multiplying Written Expression points by three and adding Language and Conventions points. | 24 | 71% |
| **Written Expression** Students compose well-developed writing using details from what they have read. | 6 | 83% |
| **Language and Conventions** Students demonstrate knowledge of conventions and other important elements of language. | 6 | 33% |




*Percent of points earned cannot be compared across years because individual items change from year to year. They also cannot be compared across subclaims because the number of items and the difficulty of items may not be the same.

For information about the CMAS assessment program, visit
**http://www.cde.state.co.us/assessment/cmas**.

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## 2.5 Sample Individual Student Performance Report – CMAS Mathematics

Page 1

**Confidential Student Performance Report**

**Colorado Measures of Academic Success**

Student: **STUDENTFIRST M. (PREFERRED) STUDENTLAST** (A)

SASID: **1111111111** Birthdate: **MM/DD/YYYY**
School: **ELEMENTARY SCHOOL (0000)**
District: **DISTRICT (0000)**

(B) **Spring 2023**

Mathematics (C) (D) **Grade 3**

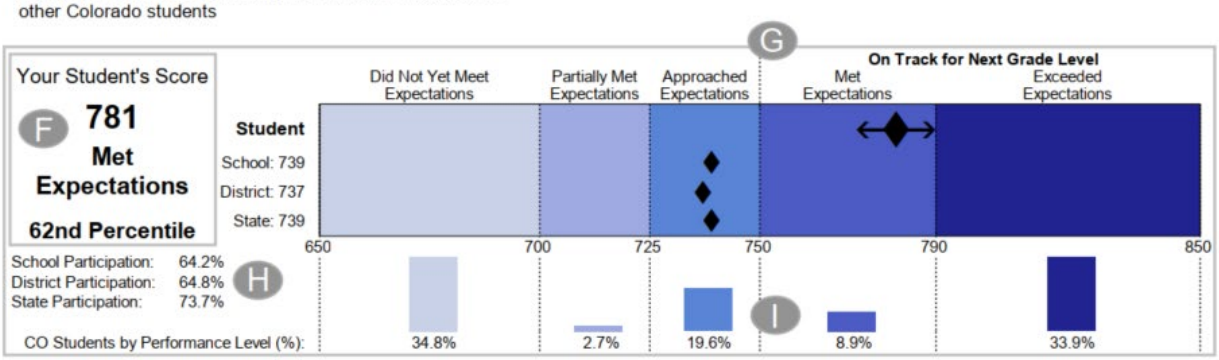
CMAS is the only assessment given to all Colorado students that measures what students should know and be able to do at the end of each grade. This report describes your student's understanding of Colorado's grade 3 Mathematics expectations. Scan the QR code at the bottom of this page to see a video that will talk you through your student's report.

**Your student's performance is shown as:** (E)

- A scale score: A numerical score based on Colorado's grade 3 Mathematics expectations
- A performance level: Your student's performance level is described at the bottom of this page
- A percentile: How your student performed in comparison to other Colorado students

**Consider as you review this report:**

- Arrows around your student's diamond show where your student may have scored if the assessment was taken multiple times.
- Make school, district, and state comparisons with caution if participation is low.
- Talk with your student's teacher about your student's progress in Mathematics.




**Performance Level Description* - Met Expectations**

3 STUDENT **Met Expectations** and is on track for the next grade level. Students in this level typically demonstrate the following:

**Major, Additional & Supporting Content**

- Determine unknown numbers in problems with one factor greater than or equal to 5.
- Justify comparisons of two fractions with the same numerator or denominator with a visual model. Demonstrate understanding of the quantity *a/b* on a number line and its relationship to 1/*b* . (J)
- Solve one-step and two-step word problems involving addition or subtraction of time intervals. Measure and estimate liquid volumes and masses using any of the four operations. Solve one-step word problems using estimated measurements. Represent data on a scaled picture graph, a scaled bar graph, or a line plot with appropriate units.
- Represent area of a plane figure as square units. Solve mathematical problems with unknown side lengths in perimeters of polygons. Understand properties of quadrilaterals and subcategories and draw examples of quadrilaterals with stated attributes

**Expressing Mathematical Reasoning**

- Communicate reasoning with no calculation errors. Interpret and critique the reasoning of others. Use precision in grade-appropriate communication.

**Modeling & Application**

- Use approximations to apply mathematics to a real-world situation. Analyze relationships between values to draw conclusions. Create a model by selecting appropriate tools, then improve the model based upon results.

Performance level descriptors (PLDs) are organized in a manner that assumes students demonstrating higher levels of command have mastered the concepts and skills within lower levels. To view a video report and the full version of the performance level descriptor, visit **https://coassessments.com/parentsandguardians** or access the QR code.

*Adapted from ilClassroom in Action's Performance Level Summaries

(K) **Watch a video about this report!**

Information about the Colorado Academic Standards measured by this assessment:
**http://www.cde.state.co.us/comath/statestandards**.

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Page 2

STUDENTFIRST M. (PREFERRED) STUDENTLAST

# Mathematics

**Confidential**

**Subclaim Performance**

- The top bar in each of the other graphs shows the percent of points your student earned for each of the four mathematics assessment subclaims. L
- District Averages are provided for comparison.
- State Averages are provided for comparison.
- Average of students at the Met Expectations performance level starting point.

| | Points Possible | Percent of Points Earned* 0% 25% 50% 75% 100% |
|---|---|---|
| **Mathematics** - Refer to page 1 for participation rates. | | |
| **Major Content** N<br>Students solve problems involving multiplication and division, area, measurement, and basic fraction understanding. | 22 | 100% |
| **Additional & Supporting Content**<br>Students solve problems involving perimeter, place value, geometric shapes, and representations of data. | 9 | 100% O |
| **Expressing Mathematical Reasoning**<br>Students create and justify logical mathematical solutions and analyze and correct the reasoning of others. | 11 | 9% |
| **Modeling & Application**<br>Students solve real-world problems, represent and solve problems with symbols, reason quantitatively, and strategically use appropriate tools. | 9 | 33% |

*Percent of points earned cannot be compared across years because individual items change from year to year. They also cannot be compared across subclaims because the number of items and the difficulty of items may not be the same.

For information about the CMAS assessment program, visit
**http://www.cde.state.co.us/assessment/cmas**.

Page 2 of 2

## 2.6 Description of Individual Student Performance Report – CMAS Science

A sample grade 5 science student performance report is displayed in Section 2.7. Each page of the sample report is included individually. The sample report includes the same type of information included on every science report. To learn more about each part of the student performance report, match the white letters in gray circles from the sample report to the information included with the corresponding letters on the following pages.

### 2.6.1 General Information

Refer to page 1 of the Student Performance Report.

**A. Identification Information**

The student's name, state assigned student identification number (SASID), birthdate, school, and district. Students are identified by first name, middle initial, and last name. If the student has a preferred first name that is different than their legal name it is listed in parentheses.

**B. Test Date**

The season and year the student took the assessment.

**C. Subject Area**

The subject area of the student's assessment (science).

**D. Grade Level**

The grade level of the student's assessment.

**E. Explanation of Overall Performance**

A brief explanation of the overall assessment results is given to help understand the information provided in the box below the explanation.

### 2.6.2 Overall Assessment Scores

Refer to page 1 of the Student Performance Report.

**F. Student's Overall Scale Score, Performance Level and Percentile Rank**

The student's overall scale score (the number between 650 and 850) and performance level (Exceeded Expectations, Met Expectations, Approached Expectations, Partially Met Expectations) and percentile ranking are provided. Students receive an overall scale score and based on that score, are placed in one of four performance levels with Level 4 indicating the student exceeded expectations and Level 1 indicating the student partially met expectations (see **Appendix A** for more information on scale scores and **Appendix B** for more information on performance levels). The percentile ranking shows how well the student performed in comparison to other students in the state. For example, a student in the 37$^{th}$ percentile performed better than 37 percent of students in the state.

**G. Graphical Representation of Overall Performance: Overall Scale Score and Performance Level**

This graphic provides an illustration of the four performance levels and identifies where the student's overall scale score is positioned along the performance scale. The student's score is indicated by the black diamond positioned along the range of overall scale scores that define each performance level. The arrows represent the probable range, which is based on the standard error of measurement at that scale score and indicates the range of scores the student would likely receive if the assessment were taken multiple times. The probable range of scores differs across forms and

across levels of performance within forms. The ranges of overall scale scores are indicated underneath the graphic. For all grade levels in science students cross into Approached Expectations (performance level 2) when they achieve a scale score of 725, Met Expectations (performance level 3) when they achieve a scale score of 750. The scale score needed to reach Exceeded Expectations (performance level 4) varies. Refer to **Appendix A** for the full list of scale score ranges for each performance level.

Average scale scores at the school, district, and state levels are indicated by smaller black diamonds on the graph. The location of the diamonds can be compared to see how the student performed in comparison to the average student in their school, district, or the state. If the student's score diamond is to the right of the school, district, or state average diamond, then the student performed better than that group's average. If the student's diamond is to the left of the school, district, or state diamond, then on average, that group performed better than the student. Interpretations of, and comparisons between, scores of the student, school, district, and state levels should be made with caution or completely avoided when participation is low (see H. Percent of Students Tested).

The dotted lines on the graph show the lowest scores needed to achieve Partially Met Expectations, Approached Expectations, Met Expectations, and Exceeded Expectations performance levels. The scale scores representing each of those scores are indicated on the bottom of the graph.

**H. Percent of Students Tested**

The percent of students tested at the school, district, and state levels provide participation information that should be considered when interpreting aggregated results. Interpretations of, and comparisons of scores between, the student, school, district, and state levels should be made with caution or completely avoided when participation is low.

**I. Percent of Students at Each Performance Level**

The bars beneath the overall performance graphic show the percentage of students within Colorado who performed at each of the four performance levels and gives a sense of how the student's performance compares to other students' performance in Colorado. Interpretations of, and comparisons between, scores of the student and state levels should be made with caution or completely avoided when participation is low (see H. Percent of Students Tested).

**J. Performance Level Descriptor (PLD)**

PLDs provide details about the specific grade-level content area concepts and skills typically demonstrated by students within a performance level. The PLD that corresponds to the student's performance level is included on the report. The full list of performance level descriptors for each grade level and content area is included in **Appendix B** of this document.

**K. QR Code**

Scan the QR code to view a video about student performance displayed on the report. Links to sample questions, the Colorado Academic Standards, and other parent resources (including the full version of the PLD text) are also available through the QR code. Alternatively, access the materials by visiting https://coassessments.com/parentsandguardians.

### 2.6.3 Subscale Performance

Refer to page 2 of the Student Performance Report.

**L. Explanation of Subscale Performance**

In this part of the report, the student's performance is presented by individual reporting categories. Information to help understand the graphical representation in this section is included.

**M. Subscale Scores**

Subscale scores indicate how the student performed in each reporting category. Subscale scores range from 400 to 550 and can be compared across school years. Average subscale scores are also provided for the state and the student's school and district.

**N. Reporting Category Descriptions**

Reporting categories include the standards for science (physical science, life science, and earth and space science) and Science and Engineering Practices. Descriptions of the reporting categories from the CAS are included in this section of the report.

**O. Graphical Representation of Subscale Performance by Student, School, District, and State**

The graphical representation of subscale performance shows how the student performed in each reporting category. The student's performance is represented by a blue diamond on the graph.

The graphical representation also shows how the student performed in comparison to other students in the state and the student's school or district. The smaller black diamonds represent performance of students in the state, district, and school. If the student's score diamond is to the right of the state, district or school average diamond, the student's subscale score was higher than the state, district, or school average scale score. If the student's diamond is to the left, then the student's subscale score was lower than the state, district, or school average.

The shaded areas of the graph represent the performance of about 70% of students in the state. If the student's score diamond is to the right of the shaded area, the student's performance is considered relatively strong in that area in comparison to other students in the state. If the student's score diamond is to the left of the shaded area, the student's performance is considered relatively weak in that area in comparison to other students in the state. These categories are based on the state performance for the current year and can change from year to year.

The average scale score of students at the Met Expectations cut score point is represented by a dark vertical line.

### 2.6.4 Performance by Prepared Graduate Statements (PGs) and Grade Level Expectations (GLEs)

Refer to page 2 of the Student Performance Report.

**P. Explanation of PGs and GLEs**

PGs and GLEs are important parts of the CAS. PGs represent the concepts and skills students need to master in order to be college and career ready by the time of graduation. GLEs are grade-specific expectations that indicate that students are making progress toward the PGs. This section of the report describes performance with percent earned indicators for GLEs at the elementary level and for PGs at the middle school and high school levels.

**Q. Graph Key**

The graph key includes the explanatory text for the bars in the percent earned graph: student's performance, district average, and state average.

**R. Standard, PG, and GLE**

Descriptions of the PGs and/or GLEs that were included on the assessment are listed under each standard. Some GLEs or PGs are combined to ensure enough points for reporting. **Note:** Grade 8 and grade 11 science reports do not include GLE-level information.

**S. Points Possible**

This number shows the total points possible for each PG and GLE on the assessment. **Note:** Information is not reported at the GLE level on the grade 8 and grade 11 science reports.

**T. Graphical Representation of Percent Earned**

The graph shows the percentage of points earned out of the total number of points available for each PG and GLE. When looking at the shaded bars in the graph, the student's performance can be compared to the average district and state performance. The dark vertical line indicates the average percent of points earned by students at the Met Expectations cut score point on the overall test.

**Note**: There are relatively few points associated with each PG or GLE. A student's bar can look much longer or much shorter based on a single correct or incorrect item response. Remember that percent earned score information cannot be compared across PGs, GLEs, or years.

## 2.7 Sample Individual Student Performance Report – CMAS Science

Page 1

**Confidential Student Performance Report**

**Colorado Measures of Academic Success**
Based on the 2020 Colorado Academic Standards
Student: **STUDENTFIRST M. STUDENTLAST** (A)
SASID: **9999999999** Birthdate: **MM/DD/YYYY**
School: **ELEMENTARY SCHOOL (0000)**
District: **DISTRICT NAME (0000)**
(B) **Spring 2023**

**Science** (C) (D) **Grade 5**

CMAS is the only assessment given to all Colorado students that measures what students should know and be able to do at the end of each grade. This report describes your student's understanding of Colorado's grade 5 science expectations. Scan the QR code at the bottom of this page to see a video that will talk you through your student's report.

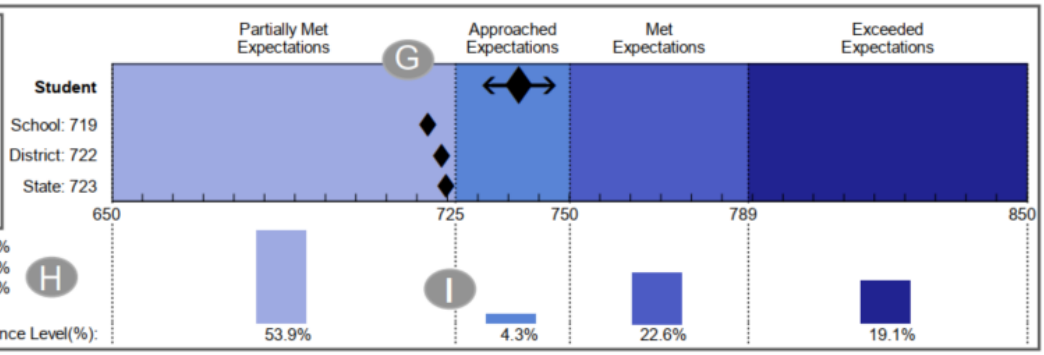
**Your student's performance is shown as:** (E)

- A scale score: A numerical score based on Colorado's grade 5 science expectations
- A performance level: Your student's performance level is described at the bottom of this page
- A percentile: How your student performed in comparison to other Colorado students

**Consider as you review this report:**

- Arrows around your student's diamond show where your student may have scored if the assessment was taken multiple times.
- Make school, district, and state comparisons with caution if participation is low.
- Talk with your student's teacher about your student's progress in science.

Your Student's Score
**739** (F)
**Approached Expectations**
**55th Percentile**




School Participation: 94.4%
District Participation: 94.6%
State Participation: 89.8%
(H)

CO Students by Performance Level(%):

### Performance Level Description - Approached Expectations

STUDENT showed a moderate understanding of the Colorado Academic Standards' grade 5 science expectations and will likely need additional academic support in the next grade level. Students in the Approached Expectations level typically:

- Describe matter (particles too small to be seen) as always conserved, and mixing can result in new substances.
- Observe the properties of an object to identify it. (J)
- Describe evidence that demonstrates Earth's gravity as the cause of objects being pulled toward its center.
- Show the transfer of energy from the Sun to things animals use as food.
- Describe matter and energy cycles in an ecosystem and explain that plants get materials to grow from air and water.
- Relate the distance between a star and Earth to the star's apparent brightness.
- Demonstrate Earth's patterns using shadows, day and night, and the seasonal appearance of some stars.
- Describe Earth's major systems and how they interact.
- Identify the proportions of salt water and fresh water in different reservoirs on Earth.
- Summarize ways that communities protect Earth's environment and resources.

5

To view a video report and the full version of the performance level descriptor, visit **https://coassessments.com/parentsandguardians/** or access the QR code.

**Watch a video about this report!** (K)

Information about the Colorado Academic Standards measured by this assessment:
**http://www.cde.state.co.us/coscience/statestandards**.

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Page 2

STUDENTFIRST M. STUDENTLAST

## Science

**Confidential**

### Subscale Performance

- The shaded areas below represent about 70% of student scores across the state.
- Diamonds outside of the shaded area indicate a potential weakness or strength compared to the state.

Average of students at the Met Expectations performance level starting point.

| Reporting Category Description | Subscale Score | | Lower than Average (400) | Average (450–500) | Higher than Average (550) |
|---|---|---|---|---|---|
| **Physical Science** | | | | 450 | 500 |
| Common properties, forms, and changes in matter and energy | **509** | **Student** | | | |
| | 460 | School | | | |
| | 463 | District | | | |
| | 464 | State | | | |
| **Physical/Life Science** | | | | 448 | 498 |
| Characteristics of living things, processes of life, and how living things interact with each other and their environment | **466** | **Student** | | | |
| | 457 | School | | | |
| | 461 | District | | | |
| | 461 | State | | | |
| **Earth and Space Science** | | | | 452 | 500 |
| Processes and interactions of Earth's systems, and the structure and dynamics of Earth and other objects in space | **482** | **Student** | | | |
| | 458 | School | | | |
| | 461 | District | | | |
| | 463 | State | | | |
| **Science and Engineering Practices** | | | | 453 | 502 |
| Making sense of the natural world through investigation and problem solving | **494** | **Student** | | | |
| | 459 | School | | | |
| | 463 | District | | | |
| | 464 | State | | | |

### Performance by Prepared Graduate Statements (PGs) and Grade Level Expectations (GLEs)

- PGs and GLEs identify what students need to master to be ready for the next grade level.
- The figure below shows the percent of points your student earned for each grade 5 science GLE.

Student's performance
District average
State average

| Standard, PG and GLE | Points Possible | Percent of Points Earned* (0% 25% 50% 75% 100%) |
|---|---|---|
| **Physical Science** | | |
| **PG 1: Structure, properties, and interactions of matter** | | |
| GLE 1: Matter exists as particles too small to be seen; Properties can be used to identify materials | 6 | 50% |
| GLE 2: Chemical reactions and the Law of Conservation of Mass | 6 | 33% |
| GLE 3: Gravity | 6 | 83% |
| **Physical/Life Science** | | |
| **PG 1: Structure, properties, and interactions of matter** | | |
| GLE 4: Energy from food was once energy from the sun | 6 | 33% |
| **PG 6: How living systems interact with the environment** | | |
| GLE 2: Plants get most of their material for growth from air and water | | |
| **PG 6: How living systems interact with the environment** | | |
| GLE 1: Matter cycles between air and soil; Organisms live and die | 6 | 17% |
| **Earth and Space Science** | | |
| **PG 9: The universe and Earth's place in it** | | |
| GLE 1: Earth's major systems interact in multiple ways | 8 | 38% |
| GLE 2: Interactions between Earth's orbit and the moon's orbit | | |
| **PG 10: How and why Earth is constantly changing** | | |
| GLE 3: Earth's major systems interact in multiple ways | 7 | 43% |
| GLE 4: Earth's major water is in the ocean and much of Earth's freshwater is in glaciers or underground | | |
| GLE 5: Societal activities have major effects on land, ocean, atmosphere and even outer space | 6 | 17% |

*Percent of points earned cannot be compared across years because individual items change from year to year. They also cannot be compared across PGs because the number of items and the difficulty of items may not be the same.

Page 2 of 2

## 2.8 Description of Individual Student Performance Report – CoAlt Science

A Student Performance Report is created for each student who takes a CoAlt assessment. This section of the guide explains the elements of the Student Performance Report. A sample CoAlt Student Performance Report is displayed in Section 2.9.

### 2.8.1 General Information

Refer to page 1 of the Student Performance Report.

**A. Identification Information**

The student's name, state assigned student identifier (SASID), birthdate, school, and district. Students are identified by first name, middle initial, and last name. If the student has a preferred first name that is different than their legal name it is listed in parentheses.

**B. Test Date**

The season and year the student took the assessment.

**C. Subject Area**

The subject area of the student's assessment (science).

**D. Grade Level**

The grade level of the student's assessment.

**E. Explanation of Overall Performance**

A brief explanation of the overall assessment results to help understand the reported information.

### 2.8.2 Student Performance Information

Refer to page 1 of the Student Performance Report.

**F. Student's Overall Scale Score and Performance Level**

The student's overall scale score (the number between 150 and 350) and performance level (Emerging, Approaching Target, At Target, or Advanced) are provided. The scale score and performance level included in this part of the report represent the student's overall performance on the assessment.

**G. Graphical Representation of the Overall Scale Score and Performance Level by Student and State**

The student's scale score is indicated by a large diamond on the graph. The arrows to the left and right of the diamond indicate the range of scores the student would likely receive if the assessment were taken multiple times.

The average scale score at the state level is identified by a smaller black diamond on the graph. The location of the diamonds can be compared to see how the student performed in comparison to the average student at the state level. If the student's score diamond is to the right of the state average diamond, the student performed better than the state average. If the student's diamond is to the left of the state diamond, the student performed below the state average.

The dotted lines on the graph show the lowest scores needed to achieve Approaching Target, At Target, and Advanced performance levels. The scale scores representing each of those scores are indicated on the bottom of the graph.

**H. Percent of Students Tested**

The percent of students tested at the state level provides participation information that should be considered when interpreting aggregated results. Interpretations of, and comparisons of scores between, the student and district and state levels should be made with caution or completely avoided when participation is low.

**I. Percent of Students at Each Performance Level**

The bars beneath the overall performance graphic show the percentage of students within Colorado who performed at each of the four performance levels and gives a sense of how the student's performance compares to other students' performance in Colorado.

**J. Performance Level Descriptor (PLD)**

PLDs provide details about the specific grade-level content area concepts and skills typically demonstrated by students within a performance level. The PLD that corresponds to the student's performance level is included on the report. The full list of performance level descriptors for each grade level and content area is included in **Appendix B** of this document.

**K. QR Code**

Scan the QR code to view a video about student performance displayed on the report. Links to sample questions, the Colorado Academic Standards, and other parent resources (including the full version of the PLD text) are also available through the QR code. Alternatively, access the materials by visiting https://coassessments.com/parentsandguardians.

### 2.8.3 Content Standard Performance

Refer to page 2 of the Student Performance Report.

**L. Content Standard Descriptions**

Descriptions for Science standards (physical science, life science, and earth and space science) and Science and Engineering Practices.

**M. Points Earned**

Points earned indicates how many points the student earned for each content standard.

**N. Points Possible**

Points possible indicated the total number of points possible for each content standard.

**O. Graphical Representation of Content Standard Performance by Student and State**

The graphical representation of content standard performance shows how the student performed in each standard compared to the state average percent of points earned. The student's performance is represented by a bar graph. The average percent of points earned for each content standard at the state level is identified by a second bar graph. If the student's bar ends to the right of the state average bar, the student's percent of points earned was higher than the state average. If the student's bar ends to the left of the state average bar, the student's percent of points earned was lower than the state average. Interpretations of, and comparisons of scores between, the student and state levels should be made with caution or completely avoided when participation is low.

**P. Graph Key**

Indicates the student's percent of points earned and the state average percent of points earned.

## 2.9 Sample Individual Student Performance Report – CoAlt Science

Page 1

**Confidential Student Performance Report**

**Colorado Alternate Assessment**
Based on the 2020 Colorado Academic Standards
Student: **FIRSTNAME LASTNAME** A
SASID: **9999999999** Birthdate: **MM/DD/YYYY**
School: **MIDDLE SCHOOL (0000)**
District: **SAMPLE DISTRICT (0000)**
B **Spring 2023**

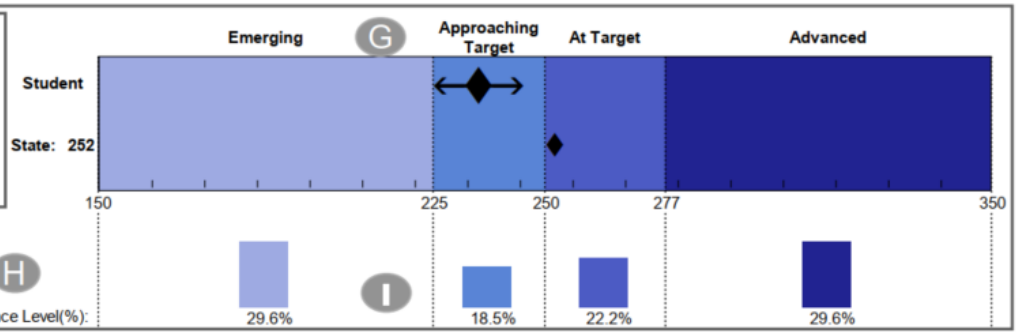
**Science** C D **Grade 8**

This Colorado Alternate Assessment (CoAlt) report provides information about your student's understanding of the Extended Evidence Outcomes (EEOs) of Colorado's middle school science standards. Scan the QR code at the bottom of this page to see a video that will talk you through your student's report.

**Your student's performance is shown as:** E
- A scale score: A numerical score based on Colorado's middle school science expectations
- A performance level: Your student's performance level is described at the bottom of this page

**Consider as you review this report:**
- Arrows around your student's diamond show where your student may have scored if the assessment was taken multiple times.
- Make state comparisons with caution if participation is low.
- Talk with your student's teacher about your student's progress in science.

Your Student's Score
F **235**
**Approaching Target**




**Performance Level Description - Approaching Target**

FIRSTNAME showed a limited understanding of the EEOs of Colorado's middle school science standards and will likely need moderate academic support to successfully engage in the next grade level. Students in the Approaching Target level typically:

- Identify that the amount of or the mass of atoms does not change in a chemical reaction.
- Identify simple molecules, such as water or oxygen gas.
- Identify a device that releases or absorbs heat energy by chemical processes and a device that either minimizes or maximizesheat energy transfer. J
- Identify the relative amounts of kinetic and potential energy in a system.
- Identify that different materials can affect the reflection, absorption, or transmission of a light or sound wave.
- Identify how characteristic animal behaviors and specialized plant structures help the plants and animals survive, and identify examples of competitive, predatory, and mutually beneficial relationships between organisms.
- Identify an example of the cycling of matter and energy among living and nonliving parts of an ecosystem.
- Identify that variations of traits in populations increase some individuals' probability of surviving and reproducing and that natural selection works over many generations.
- Identify two locations of similar or different climates.
- Identify that regional climate is based on the region's landforms and latitude.
- Identify that Earth's resources are limited and unevenly distributed.
- Identify gravity as what keeps Earth and the Moon in their orbits and as what draws and holds together the matter making up Earth and the Moon.

8

To view a video report and the full version of the performance level descriptor, visit **https://coassessments.com/parentsandguardians/** or access the QR code.

**Watch a video about this report!** K

Information about the Colorado Academic Standards measured by this assessment:
**http://www.cde.state.co.us/coextendedeo.**
Page 1 of 2

06082023-Z9999999-0130-0018 - 0000000

Page 2

FIRSTNAME LASTNAME

## Content Standard Performance

**Content Standard Performance**

| Reporting Category Description (L) | Points Earned (M) | Points Possible (N) | Percent of Points Earned* (0% 25% 50% 75% 100%) |
|---|---|---|---|
| **Physical Science** | | | |
| Common properties, forms, and changes in matter and energy | 9 | 18 | 50% / 61% |
| **Life Science** | | | |
| Characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment | 15 | 15 | 100% / 73% |
| **Earth and Space Science** | | | |
| Processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space | 5 | 15 | 33% / 30% |
| **Science and Engineering Practices** | | | |
| Making sense of the natural world through investigation and problem solving | 14 | 30 | 47% / 54% |

(O)

*The percent of points earned cannot be compared across years because individual items change from year to year. They also cannot be compared across Standards because the number of items and the difficulty of items may not be the same. (P)

Student's Score  State Average

For information on the CoAlt assessment program, visit
**http://www.cde.state.co.us/assessment**.

Page 2 of 2

# 3.0 Understanding the Colorado School and District Reports

## 3.1 Purpose and Use of Colorado Assessment Results

The primary purpose of CMAS and CoAlt is to provide high-quality assessments that align to the Colorado Academic Standards (CAS). Assessment results are a helpful tool in evaluating educational programs and student progress. These reports:

- Summarize and report on the status and progress of student achievement
- Describe student performance relative to meeting standards
- Gauge school, district, and state year-to-year progress
- Support improvement planning (e.g., prioritize professional learning and resource decisions, advise program alignment with academic standards, reflect on the effectiveness of school initiatives)

Standardized assessments are a valuable tool for evaluating programs. However, any assessment can provide only one part of the picture. CMAS and CoAlt assessment results are not able to identify, let alone measure, every factor that contributes to the success or failure of a program. Assessment results can be most helpful if considered as one component of an evaluation system.

## 3.2 School and District Reports

In addition to individual Student Performance Reports, schools and districts receive the following reports:

| School and District Reports | |
|---|---|
| All content areas | Performance Level Summary Report, Content Standards Rosters (school level only), District Summary of Schools (district level only), Participation Summary Report |
| CMAS Science | Item Analysis Reports |
| CMAS Mathematics, ELA, and CSLA | Evidence Statement Analysis Reports |

These reports summarize how students in the school or district performed and are described later in this section. School and district reports are not for public distribution and are only to be viewed by individuals authorized to access student level data.

**Note**: Sample reports included in this guide are for illustration purposes only. They are provided to show the basic layout and information on the reports. Sample reports do not include actual data from any administration.

### 3.2.1 Types of Scores on the Colorado School and District Reports

To understand each part of the Colorado assessment school and district reports, it is important to become familiar with the types of assessment scores that are included on the report. At varying levels, student performance is described by scale scores, performance levels, subclaim performance indicators, and percent of points earned. State, district, and school level information is provided in relevant sections of the reports so that performance at these levels can be compared. A dash (–) appears on the report when there are too few students in a school or district to maintain student privacy, therefore, results are not reported. Information about appropriate comparisons of scores appears in Section 3.3.

### 3.2.2 Scale Scores

A scale score is a numerical value that summarizes student performance. When the points a student earns on an assessment are placed on a common scale, the student's score becomes a scale score. Scale scores adjust for slight differences in difficulty on versions of the assessment that can vary slightly from student to student within a year (referred to as forms of the assessment) or between school years (referred to as administrations). Scale scores allow for comparisons of assessment scores, within a particular grade and subject area, across administrations. As an example, a student who receives a score of 700 on one form of the 7th grade mathematics assessment is expected to score a 700 on any form of the assessment. A student who scored 750 on the 4th grade ELA assessment in 2023 demonstrated the same level of mastery of concepts and skills as an 4th grade student who scored 750 on the ELA test in 2017. Scale scores cannot be used to compare student performance across grades (e.g., grade 4 to grade 7) or subject areas (e.g., ELA to mathematics).

Mathematics, ELA, and CSLA scale scores for the overall test range from 650 to 850. ELA and CSLA reports also provide separate scale scores for reading. Reading scale scores range from 110 to 190.

CMAS science scale scores range from 650 to 850. Science scale scores are reported for the overall test. Content standards and Science and Engineering Practices (referred to as reporting categories) also provide separate scale scores that range from 400 to 550 for each reporting category.

CoAlt science scale scores are reported for the overall test and range from 150 to 350.

### 3.2.3 Performance Levels

Scale scores are used to determine a student's performance level for the overall assessment. Performance levels describe the concepts and skills students are expected to demonstrate within a certain range of scores at the overall assessment level by grade and content area. Descriptors for each grade level and content area are included in **Appendix B** of this document.

CMAS Performance Levels

There are five cross-grade and content area performance levels for CMAS mathematics, ELA, and CSLA assessments. There are four cross-grade performance levels for CMAS science assessments. .

| CMAS Performance Levels | |
|---|---|
| **CMAS Mathematics, ELA, and CSLA** | **CMAS Science** |
| **Level 5:** Exceeded Expectations* | **Level 4:** Exceeded Expectations* |
| **Level 4:** Met Expectations* | **Level 3:** Met Expectations* |
| **Level 3:** Approached Expectations | **Level 2:** Approached Expectations |
| **Level 2:** Partially Met Expectations | **Level 1:** Partially Met Expectations |
| **Level 1:** Did Not Yet Meet Expectations | |

*Students in the top two performance levels met or exceeded the expectations of the CAS and are considered on track to being college and career ready in the content areas of language arts, mathematics, or science. Students in the remaining performance levels may need academic support to successfully engage in further studies in the content area.

CoAlt Performance Levels

CoAlt science assessments include four performance levels.

| CoAlt Performance Levels |
|---|
| **Science** |
| Advanced* |
| At Target* |
| Approaching Target |
| Emerging |

*The top two performance levels indicate that with appropriate supports, the student is prepared for further study in the content area.

### 3.2.4 Percentile Ranking

The percentile ranking shows how well the student performed in comparison to other students in the state. For example, a student in the 75th percentile performed better than 75 percent of students in the state.

### 3.2.5 Additional Performance Indicators

In addition to scale scores, performance levels, and percentile ranking, school and district reports include other indicators to help educators understand student performance. These performance indicators are described below for each assessment.

Note: Percent earned refers to the number of points earned out of the total number of points possible within a reporting category. The percent earned indicator can only be used to compare performance of the individual student to the average district and average state performance on the specific set of items being considered. Participation rates should be taken into consideration when comparing individual student subclaim performance to state or district average performance. Some groups of items may be more difficult than other sets of items, so unlike the scale score, the percent earned indicator cannot be compared across groups of items or across school years.

CMAS Mathematics, ELA, and CSLA

CMAS mathematics, ELA, and CSLA school and district reports include subclaim performance comparing the performance of the student, school, district, and the state. ELA and CSLA reports include a reading scale score. A single cut score at 150 indicates a level of performance comparable to the Met Expectations cut on the overall ELA assessment. This cut is consistent across years and can be used in trend comparisons.

Subclaim performance on the assessments is reported as the percent of points earned for overall writing and for each of the writing, reading, and mathematics subclaims.

CMAS Science

CMAS science reports include a performance indicator for the content standards (Physical, Life, and Earth and Space Science) and Science and Engineering Practices (SEP), which indicates whether a student's scale score is Lower than Average, Average, or Higher than Average. These indicators are based on the state mean and one standard deviation below and above that mean. The average scale score of students at the Met Expectations cut score point is indicated in the same graph.

CMAS science reports include percent earned indicators for Grade Level Expectations (GLEs) in elementary school and Prepared Graduate Statements (PGs)* in middle school and high school.

*PGCs and GLEs are described more fully in **Appendix C**.

CoAlt Science

CoAlt science reports include the percent of points earned for the content standards (Physical, Life, and Earth and Space Science) and Science and Engineering Practices (SEP).

## 3.3 Appropriate Score Comparisons and Uses

The types of comparisons that can be made differ by the scores being compared. Some scores (e.g., performance levels and scale scores) allow for cross-year comparisons, while some (e.g., percent of points earned) do not. In addition, the reliability of the comparisons or conclusions made vary depending on the size of the group (i.e., number of points contributing to a particular score or the number of students included in a comparison group) and representativeness of the testers. In general, the larger the group and representativeness of the testers, the more reliable the comparison or conclusions made will be. The smaller the group, the less reliable the comparison or conclusions made will be. High-stakes decisions should not be based on scores of small groups of students or on scores with a low number of points contributing to them. The following table provides some of the comparisons that typically can and cannot be made by particular types of scores.

**Score Comparisons**

| | Compare an individual student's performance to a target group's performance (e.g., student to school, district, or state) within the same year | Compare a group's performance to another group's performance (e.g., one school to another school, a district to the state, students of one race/ethnicity group to students in another race/ethnicity group) within the same year | Compare an individual student's performance to a target group's performance (e.g., school, district, or state) across years | Compare a group's performance to the same group's performance across years | Compare to other scores of the same type in a different subject or grade |
|---|---|---|---|---|---|
| **Performance Levels** | YES | YES | YES | YES | NO (These are content and grade specific.) |
| **Scale Scores** | YES | YES | YES | YES | NO (These are content and grade specific.) |
| **Percent of Points Earned** | YES | YES | NO (These are specific to the year of the assessment.) | NO (These are specific to the year of the assessment.) | NO (These are specific to the PG/GLE or subclaim.) |
| **Average strengths and weaknesses (subscale reporting categories)*** | YES | YES | NO (These are specific to the year of the assessment.) | NO (These are specific to the year of the assessment.) | NO (These are specific to the reporting category) |

*Averages provide information about a student's performance in the reporting category compared to all students in the school, district, and state. These are not based on the standards and should not be interpreted in the same way as the overall performance levels.

Some assessment scores can be used to compare the performance of different demographic or program groups. All CMAS scores can be analyzed within the same grade and subject area for any single administration to determine which group had the highest average scale score, the lowest percentage achieving Exceeded Expectations, the highest percentage achieving Approached Expectations, etc.

Other scores can be used to help evaluate the academic performance of demographic or program groups. For example, aggregations of reporting category data can help districts and schools identify areas of potential academic weakness for a group of students. This same methodology can be applied to an entire school or district.

In addition, all assessment scores can be compared to district and statewide performance within the same subject area for any administration.

# 4.0 Content Standards Reports

## 4.1 Description of Content Standards Roster Report – CMAS Mathematics, ELA, and CSLA

Comparing student performance on Colorado assessments to a variety of reference points can be valuable. The top rows on the Content Standards Roster Report contain state, district, and school averages. Quickly compare student scores to the averages by reviewing each column on the report.

The back page of the Content Standards Roster Report analyzes student performance on the spring 2023 assessment operational items. Reports are available by grade and subject at the school level. Score information is only included for students with valid scores (i.e., not invalidated or suppressed and met test attemptedness criteria). This report provides the percent earned by domain and standard for each student. It also provides the same information aggregated at the state, district, and school levels. Sample reports are included in Sections 4.2 and 4.3.

**Note:** The District Summary of Schools provides aggregated information for each school within a district.

### 4.1.1 General Information

Refer to page 1 of the Content Standards Roster Report.

**A. Assessment Information**

The administration season and year, and school and district names and codes.

**B. Identification Information**

The assessed content area (mathematics, ELA, or CSLA) and grade level.

**C. Roster of Students**

The list of all the students in the school who took the specified assessment. Students are identified by first name, middle initial, and last name. If the student has a preferred first name that is different than their legal name it is listed in parentheses.

**D. Participation Rates**

The percent of students tested at the state, district, and school levels provides participation information that should be considered when interpreting aggregated results. Interpretations at the state, district, and school levels should be made with caution or completely avoided when participation is low.

### 4.1.2 Overall Assessment Scores

**E. Overall Scale Score**

The student's overall scale score. Students receive a numerical score and based on that score, are placed in one of five performance levels (see **Appendix A** for more information on scale scores and **Appendix B** for more information on performance levels). The rows at the top of the report include state, district, and school averages.

**F. Overall SEM Range**

The standard error of measurement (SEM) is related to the reliability of the assessment. It can vary

across the range of scale scores, especially at the very high and low ends where there typically are fewer items measuring that level of achievement. The SEM represents the range of overall scores the student would likely earn if the assessment were taken again.

**G. Percentile Rank**

The percentile ranking shows how well the student performed in comparison to other students in the state. For example, a student in the 75th percentile performed better than 75 percent of students in the state.

**H. Performance Level**

The performance level for each student is listed. Performance levels are determined by the student's overall scale score. Performance level descriptors (PLDs) for each of the five performance levels are included in **Appendix B** of this document:

- Exceeded Expectations
- Met Expectations
- Approached Expectations
- Partially Met Expectations
- Did Not Yet Meet Expectations

Students in the top two performance levels, Exceeded Expectations and Met Expectations, are considered on track to being college and career ready in the assessed content area.

### 4.1.3 Performance by Reporting Category

**I. Reporting Category**

For ELA and CSLA, there are two reporting categories, Reading and Writing, separated by a bold, vertical line. This line is not included on mathematics reports.

**J. Performance by Reporting Category Scale Score**

For ELA and CSLA, student performance for Reading is provided as a scale score on a different scale from the overall scale score. Reading scale scores range from 110 to 190. This score is not included on mathematics reports.

### 4.1.4 Performance by Subclaim Category

**K. Subclaim Category**

Within each reporting category for ELA (including CSLA) and mathematics are specific skill sets (subclaims) students demonstrate on the assessment. Each subclaim category includes the header identifying the subclaim; state, district, and school averages; and the percent of points earned by each student for each subclaim.

### 4.1.5 Content Standards Information

Refer to page 2 of the Content Standards Roster Report.

**L. Domain and Standard**

All operational items are combined into the domain and standard group to which they apply. Some items represent multiple standards and may therefore be included in multiple groups on this report.

A full list of the assessed standards by grade and content area is found in **Appendix D** and at http://www.cde.state.co.us/standardsandinstruction/standardsresourcesk12.

**M. Points Possible and Average Percent of Points Earned**

Within all domains and standards, this report provides the total points possible for each group based on the items in that group and the maximum points possible for those items.

For example, a standard might have four items aligned to it. Three of those items might be worth 2 points each and one item worth 4 points, meaning that group would have a maximum points possible of 10 points ((3x2)+4).

The state, district, and school averages provide the average percent of points earned for all students in the state, district, and school with valid scores for each domain and standard group for each form combination.

**N. Student Information**

Students are listed in alphabetical order by last name, first name. Students only have score information if a valid score is available. Students who were indicated as home schooled, expelled, withdrew before/during testing, medical exemption, or records indicated as duplicate do not appear on this report.

The form taken by each student is listed. Percent earned information is for the student's specific operational form and comparisons cannot be made for students across domains unless both students took the same operational form of the assessment.

**O. Student Percent of Points Earned**

The percent of the total points possible each listed student earned in each domain and standard group. There is a minimum number of total points possible for reporting. Domains that do not meet the minimum are not reported. For domains with multiple standard groups, this amount is still included in the total.

**P. Document Process Number**

A number unique to each administration, found in the bottom-right corner of the report, assigned by the testing contractor.

## 4.2 Sample Content Standards Roster Report – CMAS ELA and CSLA

Page 1

**Content Standards Roster**

**Colorado Measures of Academic Success** — **Spring 2023**

A

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

**English Language Arts/Literacy** B — CONFIDENTIAL - DO NOT DISTRIBUTE — **Grade 7**

**Purpose:** This report shows the overall English Language Arts and Reading scale scores for each student in the school. This page includes the percent of points earned for each Reading and Writing subclaim and the following page includes the percent of points earned for each Reading and Writing domain. State, district, and school averages are provided for comparison.

| Performance Levels | Scale Score Ranges |
|---|---|
| Exceeded Expectations | 785 - 850 |
| Met Expectations | 750 - 784 |
| Approached Expectations | 725 - 749 |
| Partially Met Expectations | 700 - 724 |
| Did Not Yet Meet Expectations | 650 - 699 |

D

| | |
|---|---|
| State Participation: | 75% |
| District Participation: | 64% |
| School Participation: | 79% |

I

| | E Overall Scale Score | F Overall SEM ♦ Range | G Percentile Rank | Reading Scale Score | Reading Literary | Reading Information | Reading Vocabulary | Writing* Overall | Written Expression | Language and Conventions |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Points Possible | | | | | |
| | | | | | 18 | 22 | 10 | 30 | | 6 |
| | | | | | Percent of Points Earned K | | | | | |
| State Average Form A: | 746 | | | 128 | 45% | 54% | 65% | 46% | 46% | 52% |
| District Average Form A: | 750 | | | 145 | 48% | 41% | 75% | 55% | 55% | 53% |
| School Average Form A: | 734 | | | 137 | 45% | 53% | 81% | 62% | 62% | 56% |

| Student | Form | Performance Level | H | | | J | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 ALASTNAME,FIRSTNAME M. | A | Met Expectations | 751 | 741-761 | 55 | 156 | 23% | 41% | 66% | 24% | 24% | 37% |
| 2 BLASTNAME,FIRSTNAME M C | A | Partially Met Expectations | 706 | 701-711 | 18 | 136 | 27% | 44% | 51% | 38% | 38% | 56% |
| 3 CLASTNAME,FIRSTNAME M | A | Approached Expectations | 746 | 736-756 | 50 | 142 | 33% | 42% | 36% | 26% | 26% | 46% |
| 4 DDDLASTNAME, DDDFIRSTNAME M. (PREFERRED) | A | Partially Met Expectations | 713 | 703-723 | 22 | 127 | 44% | 15% | 29% | 16% | 16% | 21% |
| 5 BBBTWOGREI, FNBBBTWO (PREFERRED) | A | Exceeded Expectations | 806 | 801-815 | 95 | 126 | 31% | 27% | 43% | 39% | 39% | 41% |
| 6 COABLPVLNME, COABLFN (PREFERRED) | A | Did Not Yet Meet Expectations | 698 | 688-710 | 14 | 138 | 51% | 42% | 31% | 28% | 28% | 41% |
| 7 FLASTNAME, FIRSTNAME M. | A | Partially Met Expectations | 724 | 712-736 | 30 | 127 | 16% | 35% | 19% | 24% | 24% | 26% |
| 8 F315ALLG5PVLAST, F315ALLG5PVFIRS U. (PREFERRED) | - | No Score | - | - | - | - | - | - | - | - | - | - |
| 9 GLASTNAME, FIRSTNAME M. | A | Exceeded Expectations | 830 | 825-835 | 99 | 138 | 27% | 51% | 38% | 53% | 53% | 17% |
| 10 HLASTNAME, FIRSTNAME M. | A | Did Not Yet Meet Expectations | 661 | 656-666 | 2 | 141 | 40% | 39% | 25% | 45% | 45% | 39% |
| 11 JBLASTNAME, FIRSTNAME M. | A | Partially Met Expectations | 722 | 712-732 | 28 | 134 | 24% | 43% | 39% | 45% | 45% | 41% |
| 12 JLASTNAME, FIRSTNAME M. | A | Approached Expectations | 726 | 716-736 | 31 | 143 | 24% | 43% | 39% | 45% | 45% | 41% |

*Writing Overall is calculated by multiplying Written Expression points by three and adding Language and Conventions points.
Students taking different forms should not be compared to each other for percent of points earned.

♦ Standard Error of Measurement

Page 1 of 2 — mmddyyyy-Batch-1234-5678-1234567

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## Sample Content Standards Roster Report – CMAS ELA and CSLA

Page 2

**Content Standards Roster**

**Colorado Measures of Academic Success** **Spring 2023**

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

**English Language Arts/Literacy** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 7**

| | | Reading | | | | Vocabulary | Content Area Reading | | Prose Constructed Response* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Key Ideas: Literary Text | Key Ideas: Informational Text | Craft & Structure | Integration of Knowledge & Ideas | Vocabulary Acquisition & Use | Literacy in History / Social Studies | Literacy in Science & Technical Subjects | Prose Constructed Response 1 | Prose Constructed Response 2 |
| | | **Points Possible** | | | | | | | | |
| | | 24 | 26 | 20 | 12 | 10 | 12 | 14 | 15 | 19 |
| | | **Percent of Points Earned** | | | | | | | | |
| State Average Form A: | | 43% | 43% | 43% | 41% | 45% | 36% | 43% | 49% | 53% |
| District Average Form A: | | 44% | 46% | 42% | 44% | 49% | 35% | 47% | 44% | 48% |
| School Average Form A: | | 65% | 63% | 63% | 63% | 68% | 59% | 60% | 71% | 67% |
| **Student** | **Form** | | | | | | | | | |
| 1 ALASTNAME, FIRSTNAME M. | A | 67% | 68% | 75% | 67% | 81% | 56% | 87% | 63% | 45% |
| 2 BLASTNAME, FIRSTNAME M. | A | 53% | 57% | 48% | 56% | 65% | 47% | 61% | 64% | 59% |
| 3 BRLASTNAME, FIRSTNAME M. | A | 68% | 71% | 74% | 67% | 78% | 81% | 59% | 69% | 73% |
| 4 CLASTNAME, FIRSTNAME M. | A | 40% | 46% | 51% | 43% | 48% | 53% | 38% | 63% | 45% |
| 5 DLASTNAME, FIRSTNAME M. | A | 81% | 89% | 93% | 100% | 100% | 96% | 93% | 91% | 100% |
| 6 ELASTNAME, FIRSTNAME M. | A | 12% | 11% | 19% | 15% | 23% | 14% | 16% | 21% | 12% |
| 7 FLASTNAME, FIRSTNAME M. | A | 22% | 39% | 45% | 39% | 41% | 23% | 18% | 28% | 31% |
| 8 FTLASTNAME, FIRSTNAME M. | - | - | - | - | - | - | - | - | - | - |
| 9 GLASTNAME, FIRSTNAME M. | A | 100% | 100% | 96% | 97% | 98% | 100% | 86% | 89% | 100% |
| 10 HLASTNAME, FIRSTNAME M. | A | 5% | 5% | 59% | 9% | 6% | 7% | 19% | 21% | 5% |
| 11 JBLASTNAME, FIRSTNAME M. | A | 32% | 41% | 53% | 35% | 51% | 24% | 27% | 31% | 34% |
| 12 JLASTNAME, FIRSTNAME M. | A | 32% | 47% | 29% | 42% | 36% | 41% | 24% | 33% | 35% |

*Prose Constructed Response points possible include writing and reading points for certain task types. Students taking different forms should not be compared to each other for percent of points earned.
For more information about the Colorado Academic Standards go to http://www.cde.state.co.us/coreadingwriting/statestandards.

Page 2 of 2 mmddyyyy-Batch-1234-5678-1234567

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## 4.3 Sample Content Standards Roster Report – CMAS Mathematics

Page 1

**Content Standards Roster**

**Colorado Measures of Academic Success** — **Spring 2023**

School: **SCHOOL NAME (9999)** (A)
District: **DISTRICT NAME (9999)**

**Mathematics** (B) — CONFIDENTIAL - DO NOT DISTRIBUTE — **Grade 7**

**Purpose:** This report shows the overall Mathematics scale score for each student in the school. This page includes the percent of points earned for each Mathematics subclaim and the following page includes the percent of points earned for each Mathematics domain. State, district, and school averages are provided for comparison.

| Performance Levels | Scale Score Ranges |
|---|---|
| Exceeded Expectations | 786 - 850 |
| Met Expectations | 750 - 785 |
| Approached Expectations | 725 - 749 |
| Partially Met Expectations | 700 - 724 |
| Did Not Yet Meet Expectations | 650 - 699 |

(D)

| | |
|---|---|
| State Participation: | 75% |
| District Participation: | 64% |
| School Participation: | 79% |

| | Overall Scale Score (E) | Overall SEM♦ Range (F) | Percentile Rank (G) | Mathematics (K): Major Content | Supporting Content | Reasoning | Modeling |
|---|---|---|---|---|---|---|---|
| | | | | Points Possible | | | |
| | | | | 23 | 8 | 11 | 9 |
| | | | | Percent of Points Earned | | | |
| State Average Form A: | 746 | | | 45% | 54% | 46% | 52% |
| District Average Form A: | 750 | | | 48% | 41% | 55% | 53% |
| School Average Form A: | 734 | | | 45% | 53% | 62% | 56% |

| Student (C) | Form | Performance Level (H) | Overall Scale Score | Overall SEM♦ Range | Percentile Rank | Major Content | Supporting Content | Reasoning | Modeling |
|---|---|---|---|---|---|---|---|---|---|
| 1 ALASTNAME, FIRSTNAME M. | A | Met Expectations | 751 | 741-761 | 73 | 23% | 41% | 24% | 37% |
| 2 BLASTNAME, FIRSTNAME M. | A | Partially Met Expectations | 706 | 701-711 | 17 | 27% | 44% | 38% | 56% |
| 3 BRLASTNAME, FIRSTNAME M. | A | Approached Expectations | 746 | 736-756 | 67 | 33% | 42% | 26% | 46% |
| 4 CLASTNAME, FIRSTNAME M. | A | Partially Met Expectations | 713 | 703-723 | 24 | 44% | 15% | 16% | 21% |
| 5 DLASTNAME, FIRSTNAME M. | A | Exceeded Expectations | 806 | 801-815 | 99 | 31% | 27% | 39% | 41% |
| 6 ELASTNAME, FIRSTNAME M. | A | Did Not Yet Meet Expectations | 698 | 688-710 | 11 | 51% | 42% | 28% | 41% |
| 7 FLASTNAME, FIRSTNAME M. | A | Partially Met Expectations | 724 | 712-736 | 36 | 16% | 35% | 24% | 26% |
| 8 FTLASTNAME, FIRSTNAME M. | - | No Score | - | - | - | - | - | - | - |
| 9 GLASTNAME, FIRSTNAME M. | A | Exceeded Expectations | 830 | 825-835 | 99 | 27% | 51% | 53% | 17% |
| 10 HLASTNAME, FIRSTNAME M. | A | Did Not Yet Meet Expectations | 661 | 656-666 | 1 | 40% | 39% | 45% | 39% |
| 11 JBLASTNAME, FIRSTNAME M. | A | Partially Met Expectations | 722 | 712-732 | 34 | 24% | 43% | 45% | 41% |
| 12 JLASTNAME, FIRSTNAME M. | A | Approached Expectations | 726 | 716-736 | 39 | 24% | 43% | 45% | 41% |

♦ Standard Error of Measurement

Students taking different forms should not be compared to each other for percent of points earned.

Page 1 of 2 — mmddyyyy-Batch-1234-5678-1234567

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**Content Standards Roster**

## Colorado Measures of Academic Success

**Spring 2023**

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

**Mathematics** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 7**

| | | Major, Additional & Supporting Content | | | | Reasoning & Modeling | |
|---|---|---|---|---|---|---|---|
| | | Ratios & Proportional Relationships | The Number System | Expressions & Equations | Statistics & Probability | On Grade Level | Securely Held Knowledge |
| | | Points Possible | | | | | |
| | | 11 | 5 | 7 | 5 | 10 | 10 |
| | | Percent of Points Earned | | | | | |
| State Average Form A: | | 43% | 43% | 43% | 41% | 49% | 53% |
| District Average Form A: | | 44% | 46% | 42% | 44% | 44% | 48% |
| School Average Form A: | | 65% | 63% | 63% | 63% | 71% | 67% |
| **Student** | **Form** | | | | | | |
| 1 ALASTNAME, FIRSTNAME M. | A | 67% | 68% | 75% | 67% | 63% | 45% |
| 2 BLASTNAME, FIRSTNAME M. | A | 53% | 57% | 48% | 56% | 64% | 59% |
| 3 BRLASTNAME, FIRSTNAME M. | A | 68% | 71% | 74% | 67% | 69% | 73% |
| 4 CLASTNAME, FIRSTNAME M. | A | 40% | 46% | 51% | 43% | 63% | 45% |
| 5 DLASTNAME, FIRSTNAME M. | A | 81% | 89% | 93% | 100% | 91% | 100% |
| 6 ELASTNAME, FIRSTNAME M. | A | 12% | 11% | 19% | 15% | 21% | 12% |
| 7 FLASTNAME, FIRSTNAME M. | A | 22% | 39% | 45% | 39% | 28% | 31% |
| 8 FTLASTNAME, FIRSTNAME M. | - | - | - | - | - | - | - |
| 9 GLASTNAME, FIRSTNAME M. | A | 100% | 100% | 96% | 97% | 89% | 100% |
| 10 HLASTNAME, FIRSTNAME M. | A | 5% | 5% | 59% | 9% | 21% | 5% |
| 11 JBLASTNAME, FIRSTNAME M. | A | 32% | 41% | 53% | 35% | 31% | 34% |
| 12 JLASTNAME, FIRSTNAME M. | A | 32% | 47% | 29% | 42% | 33% | 35% |

Students taking different forms should not be compared to each other for percent of points earned.
For more information about the Colorado Academic Standards go to http://www.cde.state.co.us/comath/statestandards.

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## 4.4 Description of Content Standards Roster Report – CMAS Science

The Content Standards Roster is available for each science grade assessed at each school. It lists every student who should have tested in the school. Score information is only included for students with valid scores (i.e., not invalidated or suppressed and met attemptedness criteria). This report provides the overall performance level, reporting category, Prepared Graduate Statements (PG) for grade 8 and grade 11, or Grade Level Expectations (GLE) for grade 5 data for each student. It also provides the same information aggregated at the state, district, and school levels. A sample report is included in Section 4.5.

**Note:** The District Summary of Schools provides aggregated information for each school within a district.

### 4.4.1 General Information

Refer to page 1 of the School Summary of Students.

**A. Test Date**
The administration season and year.

**B. Identification Information**
The school and district name and code.

**C. Subject Area**
The assessed content area (science).

**D. Grade**
The grade level of the assessment.

The general information is repeated on page 2 of the report.

### 4.4.2 Content Standards Summary Table

Refer to page 1 of the School Summary of Students.

**E. Key**
The ranges of scale scores for each performance level for the overall test. It also explains the symbols used to identify the performance indicators for content standard performance (Higher than Average, Average, Lower than Average).

**F. Student Information**
Students are identified by last name, first name, and middle initial. Students who were indicated as home schooled, expelled, withdrew before/during testing, medical exemption, or records indicated as duplicate do not appear on this report.

**G. Content Standards Performance School Summary**
The number and percentage of students in a school who show Higher than Average (filled circle), Average (half-filled circle), and Lower than Average (empty circle) for the reporting categories are provided for each standard.

**H. State, District, and School Average**
For comparison purposes, the average overall scale score and content standard (reporting category) scale score are shown for the state, district, and school.

**I. Overall Performance Level**
The overall performance level for each student on the roster.

**J. Overall Scale Score**
The overall scale score for each student on the roster.

**K. SEM Range**
The standard error of measurement (SEM) is related to the reliability of the assessment. It can vary across the range of scale scores, especially at the very high and low ends where there typically are fewer items measuring that level of achievement. The SEM represents the range of overall scores the student would likely earn if the assessment were taken again.

**L. Percentile Rank**
The percentile ranking shows how well the student performed in comparison to other students in the state. For example, a student in the 75th percentile performed better than 75 percent of students in the state.

**M. Results for Each Content Standard (Reporting Category): Scale Score and Performance Indicator**
The student's scale score (SS) and performance indicator (PI) of Higher than Average, Average, or Lower than Average for each content standard (reporting category).

**N. Document Process Number**
A number unique to each administration, found in the bottom-right corner of the report, assigned by the testing contractor.

### 4.4.3 Prepared Graduates(PGs) and Grade Level Expectations (GLEs) Performance

Refer to page 2 of the Content Standards Roster.

**O. Student Information**

Students are identified by last name, first name, and middle initial. If the student has a preferred first name that is different than their legal name it is listed in parentheses. Students who were indicated as home schooled, expelled, withdrew before/during testing, medical exemption, or records indicated as duplicate do not appear on this report.

**P. State, District, and School Average**

For comparison purposes, the average percent earned is shown for the PGs at the state, district, and school levels for middle school and high school reports. Elementary reports have the average percent earned for the GLEs at the state, district, and school levels.

**Q. Prepared Graduates or Grade Level Expectations**

PGs and GLEs are important parts of the CAS. PGs represent the concepts and skills students need to master in order to be college and career ready by the time of graduation. The GLEs are grade-specific expectations that indicate that students are making progress toward the PGs.

**R. Points Possible**

The number of points possible for each PG or GLE reported. Some PGs and GLEs are combined to meet the minimum number of points required for reporting.

**S. Performance for Prepared Graduate Statements or Grade Level Expectations**

This section of the report describes performance with percent earned for PGs or GLEs. The PGs or GLEs are listed in the same order using the same number references as they appear on page 2 of the Student Performance Report. The order and text for each PG and GLE is included in **Appendix C**.

**Note:** Information on PGs is not provided in grade 5 and is not provided at the GLE level on the grade 8 and grade 11 science reports.

## 4.5 Sample School Summary of Students Report – CMAS Science

Page 1

**Content Standards Roster**

**Colorado Measures of Academic Success** (A) **Spring 2023**

**Based on the 2020 Colorado Academic Standards**

School: **SCHOOL NAME (9999)** (B)

District: **DISTRICT NAME (9999)**

**Science** (C) CONFIDENTIAL - DO NOT DISTRIBUTE (D) **Grade 8**

**Purpose:** This report shows performance on the overall test, content standards, and Performance Indicators relative to the state. State, district, and school averages are provided for comparison.

| Performance Levels | Scale Score Ranges |
|---|---|
| Exceeded Expectations | 797 - 850 |
| Met Expectations | 750 - 796 |
| Approached Expectations | 725 - 749 |
| Partially Met Expectations | 65[illegible]4 (E) |

**Performance Indicator**

● = Higher than Average
◒ = Average
○ = Lower than Average

| | |
|---|---|
| State Participation: | 75% |
| District Participation: | 64% |
| School Participation: | 79% |

**Content Standards Performance School Summary** (G)

| | Physical Science | | | Life Science | | | Earth and Space Science | | | Science and Engineering Practices | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ● | ◒ | ○ | ● | ◒ | ○ | ● | ◒ | ○ | ● | ◒ | ○ |
| # of students: | 6 | 4 | 4 | 8 | 3 | 3 | 7 | 4 | 3 | 5 | 5 | 5 |
| % of students: | 43% | 28% | 29% | 57% | 21% | 22% | 50% | 28% | 21% | 33% | 33% | 33% |

| Student | Form | Performance Level (I) | Overall Scale Score (J) | SEM ♦ Range (K) | Percentile Rank (L) | Physical Science SS | Physical Science PI | Life Science SS | Life Science PI | Earth and Space Science SS | Earth and Space Science PI | Science and Engineering Practices SS | Science and Engineering Practices PI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Content Standard Scale Score (SS) and Performance Indicator (PI) (M) | | | | | | | |
| State Average Form A: | | | 699 | | | 719 | | 743 | | 690 | | 738 | |
| District Average Form A: | | | 695 | | | 703 | | 727 | | 726 | | 723 | |
| School Average Form A: | | | 695 | | | 684 | | 689 | | 706 | | 697 | |
| 1 ALASTNAMEWWWWWW, FIRST NAME A. | A | Partially Met Expectations | 709 | 682-736 | 20 | 697 | ○ | 667 | ○ | 714 | ○ | 664 | ○ |
| 2 BLAST, FIRST | A | Met Expectations | 778 | 755-791 | 84 | 717 | ● | 731 | ● | 686 | ● | 713 | ● |
| 3 CLASTNAME, FIRSTNAME A. (F) | A | Partially Met Expectations | 719 | 682-736 | 23 | 667 | ● | 674 | ● | 685 | ○ | 736 | ○ |
| 4 DLAST, FIRSTNAME C. | A | Exceeded Expectations | 793 | 761-818 | 98 | 821 | ● | 834 | ● | 799 | ● | 831 | ● |
| 5 ELAST, FIRST X. | A | Partially Met Expectations | 667 | 650-697 | 12 | 678 | ◒ | 721 | ○ | 698 | ○ | 668 | ○ |
| 6 FLASTNAME, FIRST B. | A | Approached Expectations | 749 | 724-774 | 64 | 667 | ○ | 721 | ○ | 689 | ○ | 651 | ○ |
| 7 GLAST, FIRST X. | - | No Score | - | - | - | - | - | - | - | - | - | - | - |
| 8 HLASTNAME, FIRST B. | A | Met Expectations | 772 | 751-793 | 73 | 701 | ○ | 677 | ◒ | 697 | ○ | 653 | ○ |
| 9 ILASTNAMEWWWWWI, FIRSTWWABCDWWWW B. | A | Partially Met Expectations | 671 | 650-693 | 28 | 689 | ○ | 721 | ○ | 661 | ○ | 686 | ◒ |
| 10 JLASTNAME, FIRST B. | A | Met Expectations | 750 | 727-773 | 93 | 821 | ● | 778 | ● | 743 | ◒ | 849 | ● |
| 11 KLASTNAME, FIRST B. | A | Exceeded Expectations | 821 | 796-844 | 99 | 844 | ● | 783 | ● | 750 | ◒ | 850 | ● |
| 12 LLASTNAME, FIRST B. | - | No Score | - | - | - | - | - | - | - | - | - | - | - |
| 13 MLASTNAME, FIRST B. | A | Approached Expectations | 731 | 689-733 | 50 | 689 | ○ | 733 | ○ | 721 | ● | 687 | ○ |
| 14 NLAST, FIRSTNAME C. | A | Exceeded Expectations | 842 | 823-850 | 99 | 844 | ● | 850 | ● | 889 | ● | 798 | ● |
| 15 OLAST, FIRST X. | A | Approached Expectations | 728 | 698-744 | 40 | 673 | ◒ | 668 | ○ | 739 | ○ | 691 | ○ |

Note: Students without scores are not included in summary calculations.

♦ Standard Error of Measurement

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Page 2

**Content Standards Roster**

## Colorado Measures of Academic Success

**Based on the 2020 Colorado Academic Standards**

**Spring 2023**

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

**Science** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 8**

**Purpose:** This page shows performance for content standards and prepared graduate statements (PGs) for each student in the school. The percent of points earned for each PG is presented. State, district, and school averages are provided for comparison.

| | | Q Prepared Graduate Statements (PG) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Physical Science | | | Life Science | | | Earth and Space Science | |
| | | PG1 | PG2 PG3 | PG4 | PG5 | PG6 | PG7 PG8 | PG9 | PG10 PG11 |
| | | R Points Possible | | | | | | | |
| | | 6 | 9 | 6 | 7 | 6 | 9 | 8 | 10 |
| | | Percent of Points Earned | | | | | | | |
| P State Average Form A: | | 53% | 48% | 52% | 52% | 52% | 45% | 38% | 62% |
| District Average Form A: | | 57% | 47% | 54% | 54% | 54% | 49% | 44% | 58% |
| School Average Form A: | | 53% | 47% | 57% | 57% | 57% | 52% | 43% | 54% |
| Student O | Form | | | | | | | | |
| 1 ALASTNAMEWWWWWW, FIRST NAME A. | A | 46% | 71% | 64% | 64% | 64% | 64% | 59% | 67% |
| 2 BLAST, FIRST | A | 59% | 64% | 58% | 58% | 58% | 54% | 53% | 62% |
| 3 CLASTNAME, FIRSTNAME A. | A | 46% | 56% | 59% | 59% | 59% | 38% | 55% | 46% |
| 4 DLAST, FIRSTNAME C. | A | 53% | 81% | 49% | 49% | 49% | 47% | 64% | 71% |
| 5 ELAST, FIRST X. | A | 59% | 36% | 58% | 58% | 58% | 53% | 39% | 64% |
| 6 FLASTNAME, FIRST B. | A | 36% | 47% | 62% | 62% S | 62% | 62% | 68% | 75% |
| 7 GLAST, FIRST X. | - | - | - | - | - | - | - | - | - |
| 8 HLASTNAME, FIRST B. | A | 41% | 51% | 64% | 64% | 64% | 61% | 63% | 64% |
| 9 ILASTNAMEWWWWWI, FIRSTWWABCDWWWW B. | A | 63% | 52% | 59% | 59% | 59% | 73% | 48% | 53% |
| 10 JLASTNAME, FIRST B. | A | 53% | 46% | 39% | 39% | 39% | 68% | 54% | 71% |
| 11 KLASTNAME, FIRST B. | A | 43% | 63% | 48% | 48% | 48% | 47% | 71% | 62% |
| 12 LLASTNAME, FIRST B. | - | - | - | - | - | - | - | - | - |
| 13 MLASTNAME, FIRST B. | A | 55% | 64% | 68% | 68% | 68% | 53% | 35% | 61% |
| 14 NLAST, FIRSTNAME C. | A | 44% | 47% | 77% | 77% | 77% | 58% | 43% | 53% |
| 15 OLAST, FIRST X. | A | 33% | 56% | 78% | 78% | 78% | 43% | 46% | 57% |

Note: Students without scores are not included in summary calculations. Students taking different forms should not be compared to each other for percent of points earned.

Page 2 of 2 mmddccyy-Z9999999-9999-9999-9999999

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## 4.6 Description of Content Standards Roster Report – CoAlt Science

The Content Standards Roster Report is available for each science grade assessed at each school. It lists every student who should have tested in the school. Score information is only included for students with valid scores (i.e., not invalidated or suppressed). This report provides overall and standards-level data for each student. A sample report is included in Section 4.7.

**Note:** The District Summary of Schools provides this information for each school within a district.

### 4.6.1 General Information

Refer to page 1 of the School Summary of Students.

**A. Test Date**

The administration season and year.

**B. Identification Information**

The school and district name and code.

**C. Subject Area**

The subject area of the report (science).

**D. Grade**

The grade level of the assessment.

### 4.6.2 Performance Level and Content Standards Information

Refer to page 1 of the Content Standards Roster.

**E. Key**

The range of scale scores for each performance level for the overall test.

**F. Student Information**

Students are identified by last name, first name, and middle initial. Students who were indicated as home schooled, expelled, withdrew before/during testing, medical exemption, or records indicated as duplicate do not appear on this report.

**G. Overall Performance Level**

The overall performance level for each student on the roster.

**H. State, District, and School Average Scale Score**

The average scale score for the state, district, and school followed by the scale score for each student.

**I. Points Possible**

The number of points possible for each content standard.

**J. Percent of Points Earned**

Describes performance with percent of points earned by content standard for the state, district, and school, followed by the percent of points earned by each student.

**K. Document Process Number**

A number unique to each administration, found in the bottom-right corner of the report, assigned by the testing contractor.

## 4.7 Sample Content Standards Roster Report – CoAlt Science

**Content Standards Roster**

**Colorado Alternate Assessment** (A) **Spring 2023**

**Based on the 2020 Colorado Academic Standards**

School **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)** (B)

**Science** (C) CONFIDENTIAL - DO NOT DISTRIBUTE (D) **Grade 5**

**Purpose:** This report shows performance on the overall test and content standards for each student in the school. State, district, and school averages are provided for comparison.

| Performance Levels (E) | Scale Score Ranges |
|---|---|
| Advanced | 275 - 350 |
| At Target | 250 - 274 |
| Approaching Target | 225 - 249 |
| Emerging | 150 - 224 |

| | |
|---|---|
| State Participation: | 75% |
| District Participation: | 64% |
| School Participation: | 72% |

| | | Overall Scale Score (H) | Content Standards Performance | | | |
|---|---|---|---|---|---|---|
| | | | Physical Science | Physical/Life Science | Earth and Space Science | Science and Engineering Practices |
| | | | Points Possible (I) | | | |
| | | | 16 | 9 | 17 | 29 |
| | | | Percent of Points Earned | | | |
| State Average: | | 145 | 52% | 45% | 37% | 37% |
| District Average: | | 157 | 51% | 44% | 35% | 35% |
| School Average: | | 146 | 59% | 55% | 47% | 47% |
| **Student** | **Performance Level** | | | | | |
| 1 ALASTNAME, FIRSTNAME A. | At Target (G) | 171 | 44% | 38% (J) | 76% | 76% |
| 2 BLAST, FIRST (F) | Advanced | 210 | 82% | 76% | 91% | 91% |
| 3 BBLAST, FIRST | Advanced | 215 | 85% | 89% | 93% | 93% |
| 4 BDLAST, FIRST | Advanced | 235 | 87% | 99% | 100% | 100% |
| 5 CLASTNAME, FIRST E. | At Target | 182 | 81% | 93% | 67% | 67% |
| 6 DLAST, FIRSTNAME M. | Approaching Target | 152 | 62% | 41% | 39% | 39% |
| 7 ELAST, FIRST C. | Emerging | 105 | 29% | 35% | 46% | 46% |
| 8 FLASTNAME, FIRSTNAME A. | At Target | 169 | 67% | 84% | 100% | 100% |
| 9 GLAST, FIRST X. | Inconclusive | - | - | - | - | - |
| 10 HLASTNAME, FIRST E. | Advanced | 199 | 94% | 100% | 88% | 88% |
| 11 JLASTNAME, FIRST E. | Advanced | 213 | 95% | 93% | 100% | 100% |
| 12 KLAST, FIRST C. | No Score | - | - | - | - | - |
| 13 LLASTNAME, FIRSTNAME A. | At Target | 175 | 81% | 79% | 100% | 100% |
| 14 MLAST, FIRSTNAME C. | Approaching Target | 147 | 61% | 49% | 53% | 53% |
| 15 NLAST, FIRST X. | At Target | 183 | 82% | 79% | 85% | 85% |
| 16 OLASTNAME, FIRST B. | Emerging | 129 | 33% | 41% | 27% | 27% |

Note: Students without scores are not included in summary calculations.

Page 1 (K) mmddccyy-Z9999999-9999-9999-9999999

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# 5.0 District Summary of Schools Report

## 5.1 Description of District Summary of Schools Report – CMAS Mathematics, ELA, CSLA, and Science

Using the District Summary of Schools Report, school data can quickly be compared to the district and state averages by reviewing the average overall scale score column. Refer to Sections 5.2, 5.3, and 5.4 for sample District Summary of Schools Reports.

### 5.1.1 General Information

**A. Assessment Information**
The administration season and year, district name, and district number.

**B. Identification Information**
The assessed content area (mathematics, ELA, CSLA, or science) and grade level.

**C. Number of Valid Scores**
The first two rows contain the number of valid scores included in reporting at the state and district levels. Subsequent rows contain the number of valid scores included in reporting at each school within the district.

### 5.1.2 Overall Assessment Scores

**D. Percentage of Students at Each Performance Level**
The first column of the report shows the distribution of students achieving each performance level— indicated both graphically and numerically. Each colored section of the graph represents a performance level, beginning with level 1 (Did Not Yet Meet Expectations for math, ELA, and CSLA; Partially Met Expectations for science) on the left through Exceeded Expectations (level 5 for math, ELA, and CSLA; level 4 for science) on the right. The numerical values appearing on the graph indicate the percentage of students in each performance level. Due to rounding, percentages may not total 100%. The name of the school is listed in each row above the graph.

**E. Description of Performance Level Graphics**
This graphic provides a key of the colors used to represent the five performance levels in ELA, CSLA, and math. There are four performance levels in science. Scale score ranges for each performance level are included in this key.

**F. Participation Rate**
This column provides participation rate information at each school in the district.

**G. Overall Mean Scale Score**
This column of the report provides the average overall scale score (refer to Section 3.2.2) for all students assessed at the school for the specified assessment on the report. The first two rows contain state and district averages.

### 5.1.3 Performance by Reporting Category

**Note:** There are no markers for H or I on the sample mathematics or science District Summary of Schools Reports.

**H. Reading Mean Scale Score**

For ELA and CSLA, student performance for reading is provided as a scale score (refer to Section 3.2.2) on a different scale from the overall scale score. Reading scale scores range from 110 to 190. The first two rows contain state and district averages. The remaining rows contain the school averages.

**I. Reporting Category**

For ELA and CSLA, there are two reporting categories, Reading and Writing, separated by a bold, vertical line.

### 5.1.4 Performance by Subclaim or Reporting Category

**J. Subclaim/Reporting Category**

Within each reporting category for ELA and CSLA are specific skill sets (subclaims) students demonstrate on the assessment. Subclaims are also provided for mathematics but are not listed under reporting categories as they are for ELA and CSLA. Each subclaim category includes the column header identifying the subclaim, as well as state, district, and school percentages.

Scale Score (SS) and Performance Indicator (PI) results for each Content Standard (Reporting Category), with icons for Higher than Average, Average, and Lower than Average are shown for science as well as state, district, and school percentages.

**K. Subclaim Performance Indicators**

On mathematics and ELA District Summary of Schools Reports, subclaim performance for the state, district, and schools is reported by the average percent of points earned for each subclaim.

### 5.1.5 Content Standards Information

Refer to page 2 of the District Summary of Schools Report.

**L. Domain and Standard/Prepared Graduate Statements and Grade Level Expectations**

For mathematics and ELA, all operational items are combined into the domain and standard group to which they apply. Some items represent multiple standards and may therefore be included in multiple groups on this report.

A full list of the assessed standards by grade and content area is found in **Appendix D** and at http://www.cde.state.co.us/standardsandinstruction/standardsresourcesk12.

For science, operational items are combined into their PGs or GLEs. PGs represent the concepts and skills students need to master in order to be college and career ready by the time of graduation. The GLEs are grade-specific expectations that indicate that students are making progress towards the PGs.

**M. Average Points Possible and Percent Earned**

This report provides the total points possible for that domain and standard or PG/GLE group based on the items in that group and the maximum points possible for those items.

For example, a standard might have four items aligned to it. Three of those items might be worth 2 points each and one item worth 4 points, meaning that group would have a maximum points possible of 10 points ((3x2)+4).

The average percent of points earned provides the average percent earned for all students in the state, district, and schools with valid scores for each domain and standard group for each form combination.

**N. School Information**

Schools are listed in alphabetical order.

**O. Percent of Points Earned**

For each listed school, the average percent of points earned in each domain and standard or PG/GLE group is provided. There is a minimum number of total points possible for reporting. Domains that do not meet the minimum are not reported. For domains with multiple standard groups, this amount is still included in the total.

**P. Document Process Number**

A number unique to each administration, found in the bottom-right corner of the report, assigned by the testing contractor.

## 5.2 Sample of District Summary of Schools Report – CMAS ELA and CSLA

Page 1

**District Summary of Schools**

**Colorado Measures of Academic Success** **Spring 2023**

A

District: **DISTRICT NAME (9999)**

B

**English Language Arts/Literacy** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 7**

**Purpose:** This report shows the overall English Language Arts and Reading mean scale scores and participation rate for each school in the district. This page includes the average percent of points earned for each Reading and Writing subclaim and the following page includes the average percent of points earned in Reading and Writing domain. State and district averages are included for comparison.

C F G H I

| Performance Distribution By % (All Students) D | Number of Valid Scores | Participa-tion Rate | Overall Mean Scale Score | Reading Mean Scale Score | Reading Literary | Reading Information | Reading Vocabulary | Writing* Overall | Written Expression | Language and Conventions |
|---|---|---|---|---|---|---|---|---|---|---|
| **STATE** 8 / 21 / 26 / 28 / 17 | 42,763 | 72.3% | **751** | **128** | 35% | 42% | 43% | 56% | 56% | 29% |
| **DISTRICT** 10 / 17 / 21 / 37 / 15 | 5,664 | 81.3% | **738** | **144** | 41% | 37% | 28% | 35% | 35% | 47% |
| ABRAHAM LINCOLN MIDDLE SCHOOL 13 / 19 / 28 / 18 / 22 | 204 | 88.3% | **742** | **137** | 34% | 51% | 25% | 46% | 46% | 62% |
| ADA LOVELACE MIDDLE SCHOOL 10 / 13 / 42 / 35 | 198 | 72.3% | **730** | **128** | 36% | 48% | 53% | 22% | 22% | 47% |
| BENJAMIN FRANKLIN MIDDLE SCHOOL 6 / 29 / 33 / 21 / 11 | 177 | 77.3% | **727** | **144** | 47% | 36% | 53% | 28% | 28% | 22% |
| BOOKER T. WASHINGTON MIDDLE SCHOOL 2 / 28 / 29 / 17 / 24 | 204 | 63.3% | **724** | **137** | 53% | 25% | 44% | 34% | 34% | 56% |
| CHARLOTTE HAWKINS BROWN MIDDLE SCHOOL 23 / 24 / 17 / 25 / 11 | 198 | 76.2% | **762** | **128** | 43% | 41% | 45% | 48% | 48% | 51% |
| ELEANOR ROOSEVELT MIDDLE SCHOOL 14 / 9 / 25 / 37 / 15 | 177 | 86.6% | **743** | **144** | 34% | 66% | 35% | 49% | 49% | 32% |
| ELMILY HANSON MIDDLE SCHOOL 18 / 21 / 29 / 15 / 17 | 171 | 86.3% | **783** | **147** | 49% | 53% | 22% | 38% | 38% | 45% |

J K

| Did Not Yet Meet Expectations (650-699) | Partially Met Expectations (700-724) | Approached Expectations (725-749) | Met Expectations (750-784) | Exceeded Expectations (785-850) |
|---|---|---|---|---|

E

* Writing Overall is calculated by multiplying Written Expression points by three and adding Language and Conventions points.

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This report is NOT for public review. Distribution within your school/district must be in accordance with state and federal privacy laws, and local school board policy.

Page 2

**District Summary of Schools**

**Colorado Measures of Academic Success** **Spring 2023**

District: **DISTRICT NAME (9999)**

**English Language Arts/Literacy** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 7**

| | Reading | | | | Vocabulary | Content Area Reading | | Prose Constructed Response* | |
|---|---|---|---|---|---|---|---|---|---|
| | Key Ideas: Literary Text | Key Ideas: Informational Text | Craft & Structure | Integration of Knowledge & Ideas | Vocabulary Acquisition & Use | Literacy in History / Social Studies | Literacy in Science & Technical Subjects | Prose Constructed Response 1 | Prose Constructed Response 2 |
| | Points Possible | | | | | | | | |
| | 24 | 26 | 20 | 12 | 10 | 12 | 14 | 15 | 19 |
| | Average Percent of Points Earned | | | | | | | | |
| State Average Form A: | 43% | 43% | 43% | 45% | 36% | 41% | 43% | 49% | 53% |
| District Average Form A: | 44% | 46% | 42% | 49% | 35% | 44% | 47% | 44% | 48% |
| ABRAHAM LINCOLN MIDDLE SCHOOL | 5% | 61% | 81% | 68% | 81% | 53% | 62% | 65% | 57% |
| ADA LOVELACE MIDDLE SCHOOL | 5% | 57% | 28% | 46% | 57% | 66% | 73% | 49% | 48% |
| BENJAMIN FRANKLIN MIDDLE SCHOOL | 18% | 46% | 34% | 72% | 54% | 68% | 39% | 57% | 63% |
| BOOKER T. WASHINGTON MIDDLE SCHOOL | 36% | 38% | 51% | 63% | 29% | 54% | 47% | 58% | 67% |
| CHARLOTTE HAWKINS BROWN MIDDLE SCHOOL | 43% | 71% | 72% | 45% | 57% | 35% | 69% | 64% | 68% |
| ELEANOR ROOSEVELT MIDDLE SCHOOL | 17% | 45% | 39% | 78% | 65% | 69% | 31% | 67% | 74% |
| EMILY HANSON MIDDLE SCHOOL | 35% | 67% | 52% | 61% | 73% | 61% | 45% | 55% | 61% |

*Prose Constructed Response points possible include writing and reading points for certain task types.

For more information about the Colorado Academic Standards go to http://www.cde.state.co.us/coreadingwriting/statestandards.

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## 5.3 Sample of District Summary of Schools Report – CMAS Mathematics

Page 1

**District Summary of Schools**

**Colorado Measures of Academic Success** **Spring 2023**

A

District: **DISTRICT NAME (9999)**

**Mathematics** B CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 7**

**Purpose:** This report shows the overall Mathematics mean scale score and participation rate for each school in the district. This page includes the average percent of points earned for each Mathematics subclaim and the following page includes the average percent of points earned for each Mathematics domain. State and district averages are provided for comparison.

C F G D

| Performance Distribution By % (All Students) | Number of Valid Scores | Participation Rate | Overall Mean Scale Score | Major Content | Supporting Content | Reasoning | Modeling |
|---|---|---|---|---|---|---|---|
| **STATE** 8 / 21 / 26 / 28 / 17 | 41,624 | 85.3% | **751** | 35% | 42% | 43% | 56% |
| **DISTRICT** 10 / 17 / 21 / 37 / 15 | 5,664 | 91.3% | **738** | 41% | 48% | 52% | 39% |
| ABRAHAM LINCOLN MIDDLE SCHOOL 13 / 19 / 28 / 18 / 22 | 204 | 84.2% | **742** | 47% | 59% | 61% | 39% |
| ADA LOVELACE MIDDLE SCHOOL 10 / 13 / 42 / 35 | 198 | 83.7% | **730** | 51% | 36% | 43% | 57% |
| BENJAMIN FRANKLIN MIDDLE SCHOOL 6 / 29 / 33 / 21 / 11 | 177 | 76.3% | **727** | 45% | 29% | 51% | 39% |
| BOOKER T. WASHINGTON MIDDLE SCHOOL 2 / 28 / 29 / 17 / 24 | 204 | 66.7% | **724** | 48% | 49% | 54% | 52% |
| CHARLOTTE HAWKINS BROWN MIDDLE SCHOOL 23 / 24 / 17 / 25 / 11 | 198 | 81.3% | **762** | 37% | 56% | 46% | 52% |
| ELEANOR ROOSEVELT MIDDLE SCHOOL 14 / 9 / 25 / 37 / 15 | 177 | 84.2% | **743** | 35% | 49% | 50% | 57% |
| ELMILY HANSON MIDDLE SCHOOL 18 / 21 / 29 / 15 / 17 | 163 | 86.3% | **743** | 45% | 53% | 54% | 49% |

J K

| Did Not Yet Meet Expectations (650-699) | Partially Met Expectations (700-724) | Approached Expectations (725-749) | Met Expectations (750-785) | Exceeded Expectations (786-850) |
|---|---|---|---|---|

E

Page 1 of 4 mmddyyyy-Batch-1234-5678-1234567

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District Summary of Schools

**Colorado Measures of Academic Success** **Spring 2023**

District: **DISTRICT NAME (9999)**

**Mathematics** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 7**

| | Ratios & Proportional Relationships | The Number System | Expressions & Equations | Statistics & Probability | Reasoning & Modeling | |
|---|---|---|---|---|---|---|
| | | | | | On Grade Level | Securely Held Knowledge |
| | Points Possible | | | | | |
| | 11 | 5 | 7 | 5 | 10 | 10 |
| | Average Percent of Points Earned | | | | | |
| State Average Form A: | 46% | 38% | 38% | 39% | 49% | 44% |
| District Average Form A: | 37% | 30% | 31% | 33% | 39% | 38% |
| ABRAHAM LINCOLN MIDDLE SCHOOL | 82% | 31% | 61% | 48% | 58% | 61% |
| ADA LOVELACE MIDDLE SCHOOL | 9% | 43% | 45% | 57% | 53% | 63% |
| BENJAMIN FRANKLIN MIDDLE SCHOOL | 10% | 63% | 71% | 64% | 49% | 71% |
| BOOKER T. WASHINGTON MIDDLE SCHOOL | 56% | 51% | 54% | 48% | 61% | 35% |
| CHARLOTTE HAWKINS BROWN MIDDLE SCHOOL | 73% | 64% | 55% | 68% | 55% | 64% |
| ELEANOR RIVERDALE MIDDLE SCHOOL | 57% | 61% | 64% | 61% | 49% | 71% |
| ELEANOR ROOSEVELT MIDDLE SCHOOL | 43% | 57% | 63% | 39% | 51% | 35% |

For more information about the Colorado Academic Standards go to http://www.cde.state.co.us/comath/statestandards.

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## 5.4 Sample of District Summary of Schools Report – CMAS Science

Page 1

**District Summary of Schools**

**Colorado Measures of Academic Success** — **Spring 2023**

**Based on the 2020 Colorado Academic Standards**

A

District: **DISTRICT NAME (9999)**

**Science** B — CONFIDENTIAL - DO NOT DISTRIBUTE — **Grade 5**

**Purpose:** This report shows performance on the overall test, content standards, and Performance Indicators relative to the state. State and district averages are provided for comparison.

**Performance Indicator**

- ● = Higher than Average
- ◒ = Average
- ○ = Lower than Average

J **Content Standards Performance District Summary**

| | Physical Science | | | | Physical/Life Science | | | | Earth and Space Science | | | | Science and Engineering Practices | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ● | ◒ | ○ | | ● | ◒ | ○ | | ● | ◒ | ○ | | ● | ◒ | ○ |
| # of students: | | 308 | 201 | 208 | | 409 | 151 | 158 | | 358 | 201 | 151 | | 201 | 258 | 258 |
| % of students: | | 43% | 28% | 29% | | 57% | 21% | 22% | | 50% | 28% | 21% | | 28% | 36% | 36% |

| Performance Distribution By % (D) | Number of Valid Scores (C) | Particpa-tion Rate (F) | Overall Mean Scale Score (G) | Content Standard Scale Score (SS) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | SS | ● | ◒ | ○ | SS | ● | ◒ | ○ | SS | ● | ◒ | ○ | SS | ● | ◒ | ○ |
| STATE (29 / 21 / 37 / 13) | 12,456 | 72.6% | **599** | 602 | 19% | 66% | 16% | 585 | 19% | 63% | 17% | 609 | 18% | 66% | 16% | 620 | 18% | 68% | 15% |
| DISTRICT (29 / 36 / 26 / 9) | 717 | 81.2% | **589** | 591 | 44% | 8% | 48% | 589 | 44% | 10% | 46% | 589 | 44% | 8% | 48% | 591 | 44% | 8% | 48% |
| SCHOOL A (32 / 28 / 18 / 22) | 145 | 73.2% | **669** | 665 | 61% | 0% | 39% | 671 | 61% | 4% | 36% | 668 | 61% | 0% | 39% | 670 | 61% | 0% | 39% |
| SCHOOL B (23 / 35 / 28 / 14) | 161 | 68.2% | **525** | 549 | 0% | 75% | 25% | 500 | 38% | 0% | 63% | 530 | 38% | 0% | 63% | 537 | 61% | 4% | 35% |
| SCHOOL C (35 / 33 / 21 / 11) | 123 | 82.7% | **561** | 525 | 0% | 0% | 100% | 525 | 0% | 0% | 100% | 529 | 0% | 20% | 80% | 532 | 38% | 0% | 63% |
| SCHOOL D (13 / 29 / 39 / 19) | 110 | 45.2% | **525** | 525 | 0% | 0% | 100% | 525 | 0% | 0% | 100% | 529 | 0% | 20% | 80% | 532 | 38% | 0% | 63% |
| SCHOOL E (12 / 27 / 36 / 25) | 178 | 64.2% | **433** | 441 | 20% | 0% | 80% | 438 | 33% | 33% | 34% | 410 | 12% | 38% | 50% | 439 | 20% | 0% | 80% |

| Partially Met | Approached | Met | Exceeded |
|---|---|---|---|
| Expectations (650-724) | Expectations (725-749) | Expectations (750-789) | Expectations (790-850) |

E

Note: Students without scores are not included in summary calculations.

Page 1 of 2 — mmddccyy-Z9999999-9999-9999-9999999

This report is NOT for public review. Distribution within your school/district must be in accordance with state and federal privacy laws and local school board policy.

District Summary of Schools

**Colorado Measures of Academic Success** **Spring 2023**

**Based on the 2020 Colorado Academic Standards**

District: **DISTRICT NAME (9999)**

**Science** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 5**

**Purpose:** This page shows performance for content standards, prepared graduate statements (PGs), and grade level expectations (GLEs) for each school in the district. The percent of points earned for each GLE is presented. If there is more than one GLE within a PG, the percent of points earned is provided separately at the PG and GLE levels. State and district averages are provided for comparison.

L

| | Prepared Graduate Statements (PG) and Grade Level Expectations (GLE) Performance | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Physical Science | | | Physical/Life Science | | Earth and Space Science | | |
| | PG1 GLE1 | PG1 GLE2 | PG1 GLE3 | PG1 GLE4 PG6 GLE2 | PG6 GLE1 | PG9 GLE1 GLE2 | PG10 GLE3 GLE4 | PG10 GLE5 |
| | Points Possible M | | | | | | | |
| | 6 | 6 | 6 | 6 | 6 | 8 | 7 | 6 |
| | Average Percent of Points Earned | | | | | | | |
| **State Average:** | 50% | 50% | 50% | 51% | 53% | 54% | 54% | 55% |
| **District Average:** | 58% | 58% | 58% | 50% | 51% | 49% | 49% | 48% |
| SCHOOL A | 61% | 61% | 61% | 62% | 63% | 63% | 63% | 63% |
| SCHOOL B | 44% | 44% | 44% | 63% | 38% | 30% | 30% | 38% |
| SCHOOL C | 38% | 38% | 38% | 33% | 38% | 38% | 38% | 39% |
| SCHOOL D | 35% | 35% | 35% | 56% | 43% | 51% | 51% | 25% |
| SCHOOL E | 18% | 18% | 18% | 23% | 21% | 40% | 40% | 18% |

N O

Note: Students without scores are not included in summary calculations.

P

Page 2 of 2 mmddccyy-Z9999999-9999-9999-9999999

# 6.0 Performance Level Summary Report

## 6.1 Description of Performance Level Summary Report – All Assessments

The Performance Level Summary Report is available for CMAS mathematics, ELA, CSLA, and science for each grade assessed at each school or district. It contains aggregated performance level information across the school, district, and state. It also contains disaggregated performance level data by student demographic and program categories and subgroups for either the school or district. Refer to Sections 6.2 and 6.3 for sample Performance Level Summary Reports.

At the district level, Performance Level Summaries are also provided by grade band for mathematics and ELA (grades 3-5 and 6-8) as well as by content area, which includes all grades aggregated together for a subject (provided for CMAS mathematics, ELA, and CSLA).

### 6.1.1 General Information

**A. Test Date**
The administration season and year.

**B. Identification Information**
The names and codes of the school and district.

**C. Content Area/Subject**
The content area/subject of the report (mathematics, ELA, CSLA, or science).

**D. Grade**
The grade level of the assessment.

### 6.1.2 Performance Level Distribution Data

**E. Demographic and Program Categories and Subgroups**
Demographic and program categories with subgroups are listed on the left side of the table. The "Not Indicated" subgroups contain results of students for whom no demographic or program information was coded.

**F. Number of Valid Scores**
Reportable or valid scores are records that met attemptedness, are non-voided, and are without suppression codes that excluded them from aggregations (e.g., expelled and home-schooled students or when a misadministration or irregularity occurred during testing). The number of valid scores does not include students with "no score" on the assessment.

**G. Overall Mean Scale Score**
The average scale score for state, district, school, and each demographic or program subgroup. The average does not include students with "no score" on the assessment.

**H. Performance Level Results**
The number and percentage of students who achieved Did Not Yet Meet Expectations

(mathematics, ELA, and CSLA only), Partially Met Expectations, Approached Expectations, Met Expectations, and Exceeded Expectations, as well as aggregated (combined) Met and Exceeded Expectations, are displayed for each demographic or program subgroup.

**I. Participation**

Participation information should be considered when interpreting aggregated results. Reasonable interpretations for individual student subgroups may be made with more confidence with higher individual participation rates. Interpretations for individual student subgroups with lower participation rates should be made with caution or completely avoided.

**J. Total Number of Students**

The number of students registered to take the assessment.

**K. Document Process Number**

A number unique to each administration, found in the bottom-right corner of the report, assigned by the testing contractor.

## 6.2 Sample Performance Level Summary Report – CMAS ELA, CSLA, and Mathematics

**School Performance Level Summary**

**Colorado Measures of Academic Success** (A) **Spring 2023**

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)** (B)

**English Language Arts/Literacy** (C) CONFIDENTIAL - DO NOT DISTRIBUTE (D) **Grade 7**

**Purpose:** This report describes group achievement in terms of mean scale scores and performance levels.

| | (F) Number of Valid Scores | (G) Overall Mean Scale Score | (H) Performance Levels: Did Not Yet Meet Expectations | | Partially Met Expectations | | Approached Expectations | | Met Expectations | | Exceeded Expectations | | Met and Exceeded | | (I) Participation Rate | (J) Total Number of Enrolled Students |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | # | % | # | % | # | % | # | % | # | % | # | % | % | # |
| **State** | 60,907 | **744** | 8,793 | 14.4% | 9,563 | 15.7% | 14,184 | 23.3% | 19,192 | 31.5% | 9,175 | 15.1% | 28,367 | 46.6% | 86.3% | 66,176 |
| District | 75 | **751** | 5 | 6.7% | 12 | 16.0% | 20 | 26.7% | 23 | 30.7% | 15 | 20.0% | 38 | 50.7% | 82.2% | 75 |
| School (E) | 25 | **718** | 5 | 20.0% | 8 | 32.0% | 12 | 48.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 96.2% | 25 |
| **Gender** | | | | | | | | | | | | | | | | |
| Female | 12 | **728** | 0 | 0.0% | 5 | 41.7% | 7 | 58.3% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 93.3% | 12 |
| Male | 13 | **708** | 5 | 38.5% | 3 | 23.1% | 5 | 38.5% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 13 |
| **Ethnicity/Race** | | | | | | | | | | | | | | | | |
| Hispanic or Latino | 2 | **734** | 0 | 0.0% | 0 | 0.0% | 2 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 2 |
| American Indian or Alaska Native | 2 | **725** | 0 | 0.0% | 1 | 50.0% | 1 | 50.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 67.7% | 2 |
| Asian | 2 | **716** | 1 | 50.0% | 0 | 0.0% | 1 | 50.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 2 |
| Black or African American | 2 | **731** | 0 | 0.0% | 1 | 50.0% | 1 | 50.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 2 |
| Native Hawaiian or Other Pacific Islander | 2 | **735** | 0 | 0.0% | 0 | 0.0% | 2 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 2 |
| White | 2 | **706** | 1 | 50.0% | 0 | 0.0% | 1 | 50.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 2 |
| Two or more races | 0 | **0** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0.0% | 0 |
| Not Indicated | 13 | **712** | 3 | 23.1% | 6 | 46.2% | 4 | 30.8% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 13 |
| **Gifted and Talented** | | | | | | | | | | | | | | | | |
| Yes | 1 | **749** | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 1 |
| No | 24 | **716** | 5 | 20.8% | 8 | 33.3% | 11 | 45.8% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 95.8% | 24 |
| **Migrant** | | | | | | | | | | | | | | | | |
| No | 24 | **717** | 5 | 20.8% | 8 | 33.3% | 11 | 45.8% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 95.8% | 24 |
| Yes | 1 | **742** | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 1 |
| **Economic Disadvantage** | | | | | | | | | | | | | | | | |
| Free/Reduced Lunch Eligible | 1 | **730** | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 100.0% | 1 |
| Not Eligible for Free/Reduced Lunch | 24 | **717** | 5 | 20.8% | 8 | 33.3% | 11 | 45.8% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 96.0% | 24 |

This report is NOT for public review. Distribution within your school/district must be in accordance with state and federal privacy laws and local school board policy.

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## 6.3 Sample Performance Level Summary Report – CMAS Science

**School Performance Level Summary**

**Colorado Measures of Academic Success** (A) **Spring 2023**

**Based on the 2020 Colorado Academic Standards**

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)** (B)

**Science** (C) CONFIDENTIAL - DO NOT DISTRIBUTE (D) **Grade 5**

**Purpose:** This report describes group achievement in terms of mean scale scores and performance levels.

| (E) | (F) Number of Valid Scores | (G) Overall Mean Scale Score | (H) Performance Levels: Partially Met Expectations | | Approached Expectations | | Met Expectations | | Exceeded Expectations | | Met and Exceeded | | (I) Participation Rate | (J) Total Number of Enrolled Students |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | # | % | # | % | # | % | # | % | # | % | % | # |
| **State** | 21,441 | **709** | 6,163 | 28.7% | 10,469 | 48.8% | 4,160 | 19.4% | 649 | 3.0% | 4,809 | 22.4% | 91.4% | 22,432 |
| District | 46 | **690** | 17 | 37.0% | 18 | 39.1% | 0 | 0.0% | 11 | 23.9% | 11 | 23.9% | 34.8% | 150 |
| School | 16 | **688** | 7 | 43.8% | 0 | 0.0% | 0 | 0.0% | 9 | 56.3% | 9 | 56.3% | 48.3% | 33 |
| **Gender** | | | | | | | | | | | | | | |
| Female | 7 | **673** | 3 | 42.9% | 0 | 0.0% | 0 | 0.0% | 4 | 57.1% | 4 | 57.1% | 50.0% | 14 |
| Male | 9 | **683** | 4 | 44.4% | 0 | 0.0% | 0 | 0.0% | 5 | 55.6% | 5 | 55.6% | 48.3% | 19 |
| **Ethnicity/Race** | | | | | | | | | | | | | | |
| Hispanic or Latino | 3 | **700** | 1 | 33.3% | 0 | 0.0% | 0 | 0.0% | 2 | 66.7% | 2 | 66.7% | 100.0% | 3 |
| American Indian or Alaska Native | 0 | **0** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0.0% | 1 |
| Asian | 2 | **800** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 2 | 100.0% | 2 | 100.0% | 33.3% | 5 |
| Black or African American | 2 | **650** | 2 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 50.0% | 4 |
| Native Hawaiian or Other Pacific Islander | 0 | **0** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0.0% | 1 |
| White | 1 | **850** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 1 | 100.0% | 1 | 100.0% | 100.0% | 1 |
| Two or more races | 0 | **0** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0.0% | 0 |
| Not Indicated | 8 | **650** | 4 | 50.0% | 0 | 0.0% | 0 | 0.0% | 4 | 50.0% | 4 | 50.0% | 47.8% | 18 |
| **Gifted and Talented** | | | | | | | | | | | | | | |
| Yes | 2 | **650** | 1 | 50.0% | 0 | 0.0% | 0 | 0.0% | 1 | 50.0% | 1 | 50.0% | 50.0% | 4 |
| No | 14 | **693** | 6 | 42.9% | 0 | 0.0% | 0 | 0.0% | 8 | 57.1% | 8 | 57.1% | 47.8% | 29 |
| **Migrant** | | | | | | | | | | | | | | |
| No | 16 | **688** | 7 | 43.8% | 0 | 0.0% | 0 | 0.0% | 9 | 56.3% | 9 | 56.3% | 48.6% | 31 |
| Yes | 0 | **0** | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0.0% | 2 |
| **Economic Disadvantage** | | | | | | | | | | | | | | |
| Free/Reduced Lunch Eligible | 1 | **650** | 1 | 100.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 50.0% | 2 |
| Not Eligible for Free/Reduced Lunch | 15 | **660** | 6 | 40.0% | 0 | 0.0% | 0 | 0.0% | 9 | 60.0% | 9 | 60.0% | 48.7% | 31 |

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Page 1 of 6 (K) mmddyyyy-Batch-1234-5678-1234567

# 7.0 Evidence Statement Analysis Report

## 7.1 Description of Evidence Statement Analysis Report – CMAS Mathematics, ELA, and CSLA

An Evidence Statement Analysis Report is available at the school and district levels for each grade level and content area assessment (ELA grades 3 through 8; CSLA grades 3 and 4; mathematics grades 3 through 8). The report includes item level score information at the school, district, and state levels. The second page of the report includes item map information related to the Colorado Academic Standards (CAS). Sample Evidence Statement Analysis Reports are displayed in Sections 7.2 and 7.3.

Information included on the Evidence Statement Analysis Report can be used to identify patterns of evidence statements where a school is performing better or worse than the district or state or where a district is performing better or worse than the state. For example, within a particular evidence statement, a school within a district may be outperforming the district and the state while the school may be performing worse than the district and the state in another evidence statement. In combination with other evidence and data, schools and districts can use the information in this report to identify patterns across evidence statements that may be indicative of potential areas of strength or weakness.

### 7.1.1 General Information

Refer to page 1 of the Evidence Statement Analysis Report.

**A. Test Date**
The administration season and year.

**B. Identification Information**
The names and codes of the school and district.

**C. Content Area/Subject**
The content area/subject of the report (mathematics, ELA, or CSLA).

**D. Grade**
The grade level of the assessment.

### 7.1.2 Evidence Statement Analysis Information

Refer to page 1 of the Evidence Statement Analysis. **Note:** For mathematics, writing tasks are not included. For this reason, there are no markers for J and K on the sample mathematics report.

**E. Number of Students with Valid Scores**
Reportable or valid scores are records that met attemptedness, are non-voided, and are without suppression codes that excluded them from aggregations (e.g., expelled and home-schooled students or when a misadministration or irregularity occurred during testing). The number of valid scores does not include students with “no score” on the assessment.

**F. Graph Key**
Explanatory text for the symbols and lines in the graph: state and district for the district level report and state, district, and school for the school level report.

**G. Average Percent of Points Earned**

The average percent of points earned is included to the left of the graphical representation of state, district, and school performance by evidence statement. Evidence statements that were more difficult for students across the state have a lower average percent of points earned.

**H. Evidence Statement and Difficulty Order**

Items on the mathematics and ELA (including CSLA) assessments are written to evidence statements that are mapped to the CAS. Each operational item on the assessment is combined into an evidence statement group. Items may be aligned to more than one evidence statement. This means that one item could be represented on the report multiple times depending on its alignment.

The evidence statements on the graph are placed in order with most to least difficult appearing from left to right. This difficulty order is determined by student performance on the items at the state level.

**I. Graphical Representation of State, District, and School Level Performance by Evidence Statement**

The graphical representation shows how the state, district, and school performed on each operational evidence statement. The state is represented as a blue line with squares, the district is represented as green circles, and the school is represented by orange triangles on school level reports.

The points on the graph represent at each level (state, district, and school) the average points earned compared to the points possible for the group of valid scores in that category. A school can then compare how their students performed on each evidence statement compared to other students in the district or state.

For ELA and CSLA, this comparison can also be used to evaluate school or district performance on the writing tasks as shown in the charts represented by letters J and K.

**J. Writing Tasks**

Charted information related to the performance of the writing tasks included on the ELA and CSLA assessments.

**K. Prose Constructed Response (PCR)**

This section breaks down the performance on the writing tasks by the PCR items included on the ELA and CSLA assessments. The PCRs ask for an extended student response that analyzes literary works in the categories of Literary Analysis and Narrative Writing and informational texts in the category of a Research Simulation Task. Score distributions of the unweighted Written Expression plus the Knowledge of Language and Conventions traits for the state, district, and school (where applicable) are included.

### 7.1.3 Evidence Statement Map Information

Refer to page 2 of the Evidence Statement Analysis.

**L. Evidence Statement**

Evidence statements are listed from most to least difficult based on the state level. This ordering corresponds to the graphed data on page 1 of the report.

**M. Colorado Academic Standard(s)**

The evidence statement-linked CAS is listed in the third column. An evidence statement can be connected to multiple standards. For statements that are considered Modeling or Modeling & Reasoning, SHK (Securely Held Knowledge) or OGL (On Grade Level) verbiage is indicated in place of a CAS. Additionally, some integrated mathematics evidence statements cross multiple domains and are not linked to only a single CAS. Multiple CAS are listed for integrated mathematics evidence statements.

**N. Domain**

The domain level (e.g., Reading: Informational Text, Reading: Literature, Operations and Algebraic Thinking) is listed in this column.

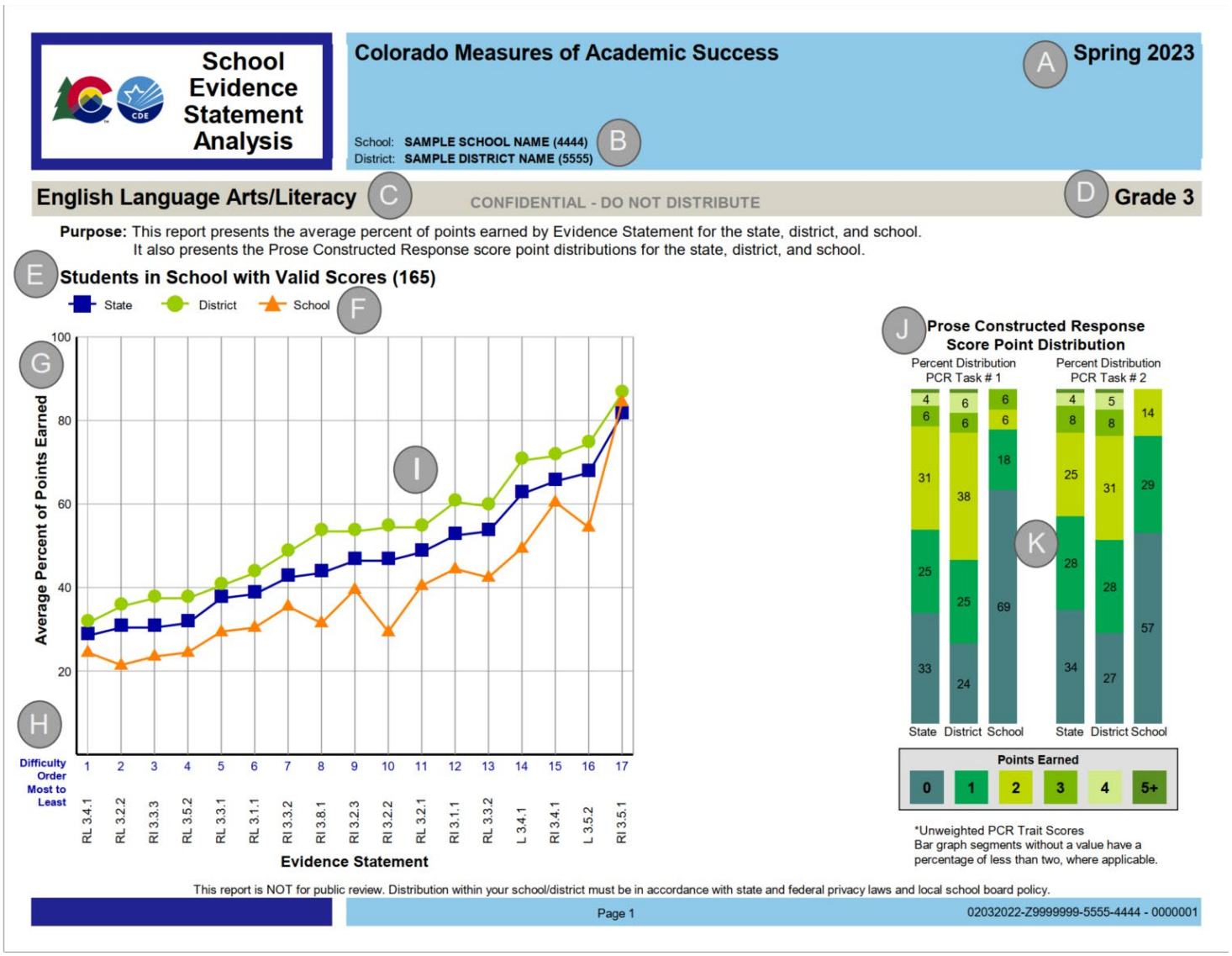
**O. Additional Information**

Links to more detailed information on the evidence statements and CAS are provided at the bottom of the report.

- Evidence Statements: http://www.cde.state.co.us/assessment/cmas
- Colorado Academic Standards:
  - ELA/CSLA – http://www.cde.state.co.us/coreadingwriting/statestandards
  - Mathematics – http://www.cde.state.co.us/comath/statestandards

## 7.2 Sample Evidence Statement Analysis – CMAS ELA and CSLA

Page 1



Page 2

**Evidence Statement Analysis Report Detail**

**Colorado Measures of Academic Success** **Spring 2023**

This report shows the operational items for the given grade and subject sorted by difficulty.

**English Language Arts/Literacy** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 3**

L M N

| Difficulty Order Most to Least | Evidence Statement | Colorado Academic Standard(s) | Domain |
|---|---|---|---|
| 1 | RL 3.4.1 | 3.2.1.b.i | Reading: Literature |
| 2 | RL 3.2.2 | 3.2.1.a.iii | Reading: Literature |
| 3 | RI 3.3.3 | 3.2.2.a.iv | Reading: Informational Text |
| 4 | RL 3.5.2 | 3.2.1.b.iii | Reading: Literature |
| 5 | RL 3.3.1 | 3.2.1.a.vi | Reading: Literature |
| 6 | RL 3.1.1 | 3.2.1.a.i | Reading: Literature |
| 7 | RI 3.3.2 | 3.2.2.a.iv | Reading: Informational Text |
| 8 | RI 3.8.1 | 3.2.2.c.ii | Reading: Informational Text |
| 9 | RI 3.2.3 | 3.2.2.a.ii | Reading: Informational Text |
| 10 | RI 3.2.2 | 3.2.2.a.ii | Reading: Informational Text |
| 11 | RL 3.2.1 | 3.2.1.a.iii | Reading: Literature |
| 12 | RI 3.1.1 | 3.2.2.a.i | Reading: Informational Text |
| 13 | RL 3.3.2 | 3.2.1.a.vi | Reading: Literature |
| 14 | L 3.4.1 | 3.2.3.c.i | Language |
| 15 | RI 3.4.1 | 3.2.2.b.i | Reading: Informational Text |
| 16 | L 3.5.2 | 3.2.3.d.iii | Language |
| 17 | RI 3.5.1 | 3.2.2.b.ii | Reading: Informational Text |

O

Evidence Statements: **http://www.cde.state.co.us/assessment/cmas**

Colorado Academic Standards: **http://www.cde.state.co.us/coreadingwriting/statestandards**.

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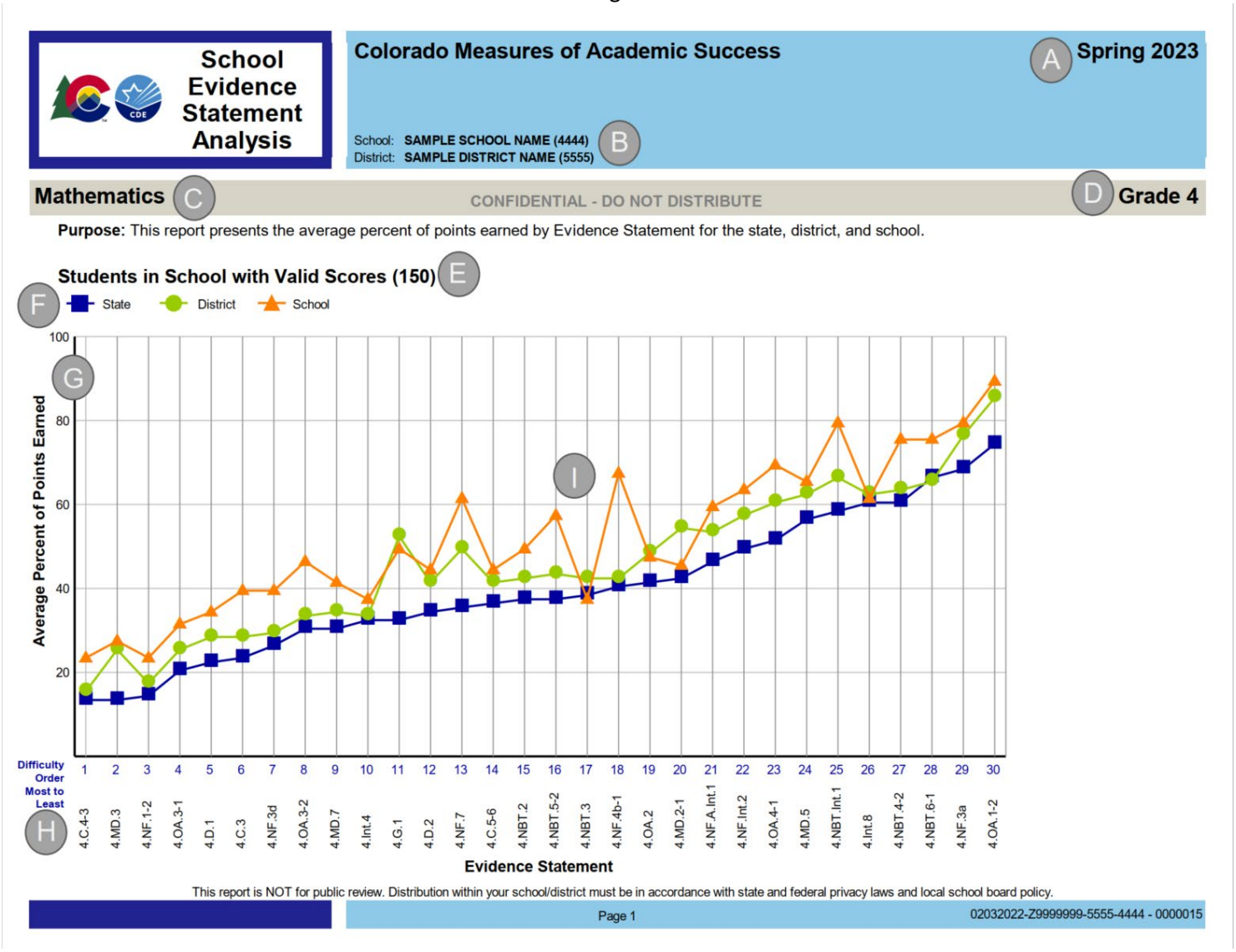
## 7.3 Sample Evidence Statement Analysis – CMAS Mathematics

Page 1



Page 2

**Evidence Statement Analysis Report Detail**

**Colorado Measures of Academic Success** **Spring 2023**

**This report shows the operational items for the given grade and subject sorted by difficulty.**

**Mathematics** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 4**

L M N

| Difficulty Order Most to Least | Evidence Statement | Colorado Academic Standard(s) | Domain |
|---|---|---|---|
| 1 | 4.C.4-3 | On Grade Level | Modeling and Reasoning |
| 2 | 4.MD.3 | 4.MD.A.3 | Measurement & Data |
| 3 | 4.NF.1-2 | 4.NF.A.1 | Number & Operations--Fractions |
| 4 | 4.OA.3-1 | 4.OA.A.3 | Operations & Algebraic Thinking |
| 5 | 4.D.1 | On Grade Level | Modeling and Reasoning |
| 6 | 4.C.3 | On Grade Level | Modeling and Reasoning |
| 7 | 4.NF.3d | 4.NF.B.3.d | Number & Operations--Fractions |
| 8 | 4.OA.3-2 | 4.OA.A.3 | Operations & Algebraic Thinking |
| 9 | 4.MD.7 | 4.MD.C.7 | Measurement & Data |
| 10 | 4.Int.4 | 4.NBT.B.6 | Number & Operations in Base Ten |
| 11 | 4.G.1 | 4.G.A.1 | Geometry |
| 12 | 4.D.2 | Securely Held Knowledge | Modeling and Reasoning |
| 13 | 4.NF.7 | 4.NF.C.7 | Number & Operations--Fractions |
| 14 | 4.C.5-6 | Securely Held Knowledge | Modeling and Reasoning |
| 15 | 4.NBT.2 | 4.NBT.A.2 | Number & Operations in Base Ten |
| 16 | 4.NBT.5-2 | 4.NBT.B.5 | Number & Operations in Base Ten |
| 17 | 4.NBT.3 | 4.NBT.A.3 | Number & Operations in Base Ten |
| 18 | 4.NF.4b-1 | 4.NF.B.4.b | Number & Operations--Fractions |
| 19 | 4.OA.2 | 4.OA.A.2 | Operations & Algebraic Thinking |
| 20 | 4.MD.2-1 | 4.MD.A.2 | Measurement & Data |
| 21 | 4.NF.A.Int.1 | 4.NF.A.1 4.NF.A.2 | Number & Operations--Fractions |
| 22 | 4.NF.Int.2 | 4.NF.C.5 4.NF.C.6 | Number & Operations--Fractions |
| 23 | 4.OA.4-1 | 4.OA.B.4 | Operations & Algebraic Thinking |
| 24 | 4.MD.5 | 4.MD.C.5 | Measurement & Data |
| 25 | 4.NBT.Int.1 | 4.NBT.A.2 4.NBT.B.4 | Number & Operations in Base Ten |
| 26 | 4.Int.8 | 4.NBT.B.4 | Number & Operations in Base Ten |
| 27 | 4.NBT.4-2 | 4.NBT.B.4 | Number & Operations in Base Ten |
| 28 | 4.NBT.6-1 | 4.NBT.B.6 | Number & Operations in Base Ten |
| 29 | 4.NF.3a | 4.NF.B.3.a | Number & Operations--Fractions |
| 30 | 4.OA.1-2 | 4.OA.A.1 | Operations & Algebraic Thinking |

O

**On Grade Level (OGL) and Securely Held Knowledge (SHK):** OGL and SHK test items ask students to integrate their knowledge and Reason or Model with mathematics, called for by the Prepared Graduate statements in the Colorado Academic Standards. OGL are standards taught in the assessed grade. SHK are standards taught in the previous grade. For a detailed list of standards associated with Reasoning and Modeling, refer to the following Evidence Statements link.

Evidence Statements: **http://www.cde.state.co.us/assessment/cmas**

Colorado Academic Standards: **http://www.cde.state.co.us/comath/statestandards**

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# 8.0 Item Analysis Report

## 8.1 Description of Item Analysis Report – CMAS Science

An Item Analysis Report is available at the school and district level for CMAS science for each assessed grade level and content area. The report includes item level score information at the school, district, and state levels. The back of the report includes item map information.

Information included on the Item Analysis Report can be used to identify patterns of items (and aligned CAS) where a school is performing better or worse than the district or state or where a district is performing better or worse than the state. For example, within a particular Grade Level Expectation (GLE), a school within a district may be out-performing the district and the state while the school may be performing worse than the district and the state in another GLE. In combination with other evidence and data, schools and districts can use the information in the Item Analysis Report to identify patterns across standards, GLEs, and PGs that may be indicative of potential areas of strength or weakness. A sample Item Analysis Report is in Section 8.2.

### 8.1.1 General Information

Refer to page 1 of the Item Analysis Report.

**A. Test Date**
The administration season and year.

**B. Identification Information**
The school and district name and code.

**C. Subject Area**
The subject area of the report (either science).

**D. Grade**
The grade level of the assessment.

### 8.1.2 Item Analysis Information

Refer to page 1 of the Item Analysis Report.

**E. Number of Students with Valid Scores**
Reportable or valid scores are records that met attemptedness, are non-voided, and are without suppression codes that excluded them from aggregations (e.g., expelled and home-schooled students or when a misadministration or irregularity occurred during testing). The number of valid scores does not include students with “no score” on the assessment.

**F. Graph Key**
Explanatory text for the symbols and lines in the graph: state and district for the district level report and state, district, and school for the school level report.

**G. Average Percent of Points Earned**
The average percent of points earned is graphed by state, district, and school to show performance by item in order from most to least difficult. Items that were more difficult for students across the

state have a lower average percent of points earned. For 1-point selected response items, the percent of students who correctly responded is recorded. For 2- and 3-point constructed response items, the average of points earned is divided by 2 or 3, respectively, in creating the percentage.

**H. Numbered Items**

Items are identified by numbers in blue text at the bottom of the graph and are ordered from most difficult to least difficult based on the state level, such that the most difficult item is labeled as 1.

**I. Standard and Grade Level Expectation (GLE)/Prepared Graduate Statement (PG)**

On elementary item analysis reports, the corresponding standard and GLE are listed below each item. On the grade 8 and grade 11 item analysis reports, the corresponding standard and PG are listed below each item.

**J. Graphical Representation of State, District, and School Level Performance by Item**

The graphical representation shows how the state, district, and school performed on each operational item. The state is represented as a blue line with squares, the district is represented as a green line with circles, and the school is represented by an orange line with triangles.

**K. Document Process Number**

A number unique to each administration, found in the bottom-right corner of the report, assigned by the testing contractor.

### 8.1.3 Item Map Information

Refer to page 2 of the Item Analysis Report.

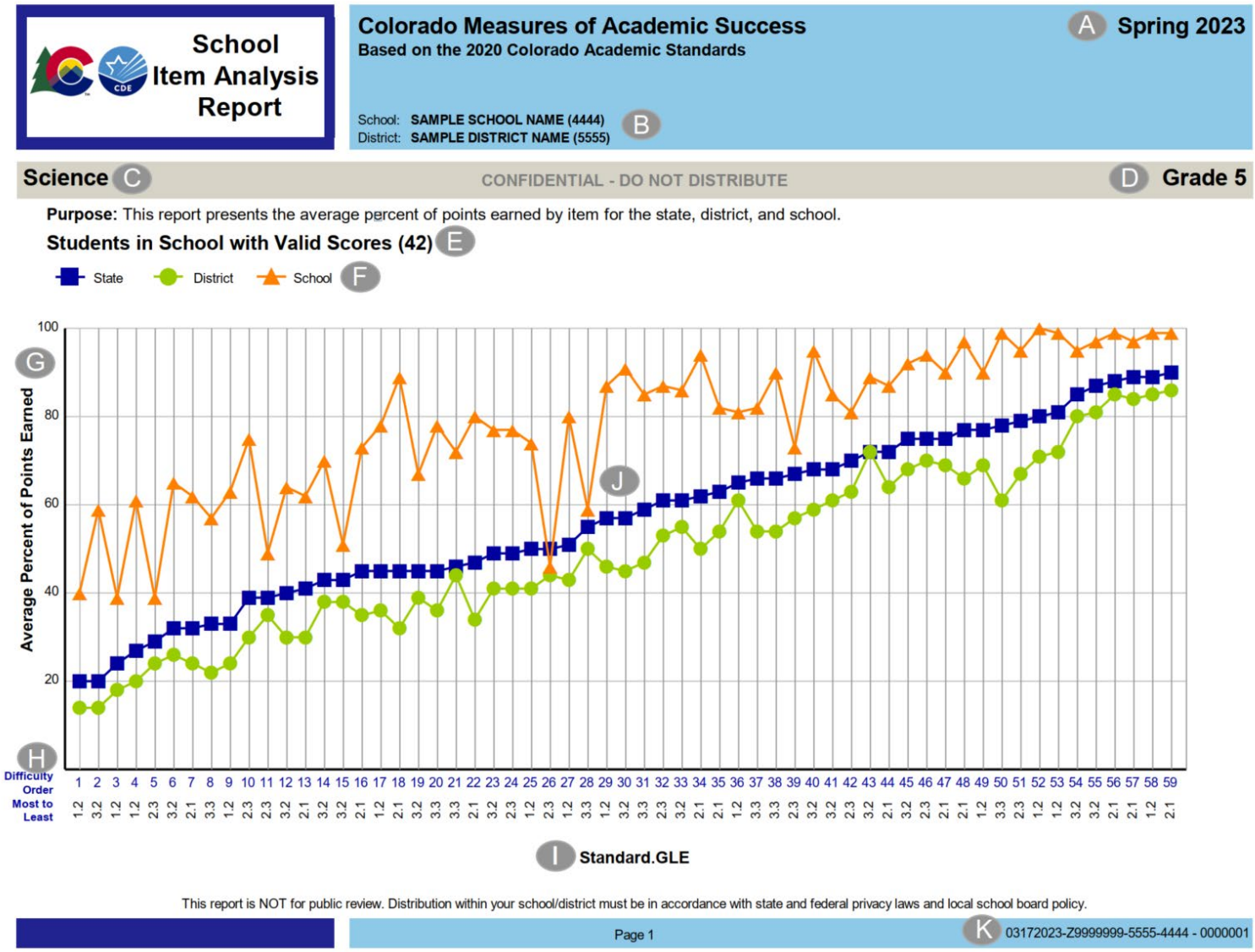
**L. Item Map Information**

Page 2 of the Item Analysis Report includes information for all the operational items included on the assessment. Items are ordered from most to least difficult, as they were on page 1 of the report. For each item, the following information is included:

- Difficulty order from most to least (matches page 1)
- Location on the test (unit number and item number)
- Standard and GLE numbers (for grade 5 only — grade 8 and grade 11 has Standard and PG number)
- Standard by name
- Scientific and Engineering Practices (SEP)
- Cross Cutting Concepts (CCC)
- Item type (Selected Response (SR); 2-point Constructed Response (CR-2)

## 8.2 Sample Item Analysis Report – CMAS Science

Page 1



Page 2

**Item Analysis Report Detail**

**Colorado Measures of Academic Success** **Spring 2023**
**Based on the 2020 Colorado Academic Standards**

**This report shows the operational items for the given grade and subject sorted by difficulty.**

**Science** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 5**

| Difficulty Order Most to Least | Unit-Item Number | Standard.GLE | Standard | SEP* | CCC* | Item Type Selected Response (SR) Constructed Response (CR) |
|---|---|---|---|---|---|---|
| 1 | 1-008 | 1.2 | Physical Science | SEP3 | CCC4 | CR-2 |
| 2 | 2-009 | 3.2 | Earth and Space Science | SEP2 | CCC4 | CR-2 |
| 3 | 3-019 | 1.2 | Physical Science | SEP3 | CCC4 | CR-2 |
| 4 | 1-009 | 1.2 | Physical Science | SEP3 | CCC4 | CR-2 |
| 5 | 1-022 | 2.3 | Physical/Life Science | SEP3 | CCC5 | SR |
| 6 | 3-007 | 3.2 | Earth and Space Science | SEP2 | CCC4 | SR |
| 7 | 3-013 | 2.1 | Physical/Life Science | SEP2 | CCC2 | CR-2 |
| 8 | 1-013 | 3.3 | Earth and Space Science | SEP3 | CCC5 | CR-2 |
| 9 | 3-015 | 1.2 | Physical Science | SEP3 | CCC4 | SR |
| 10 | 2-019 | 2.3 | Physical/Life Science | SEP3 | CCC5 | CR-2 |
| 11 | 3-006 | 2.3 | Physical/Life Science | SEP3 | CCC5 | SR |
| 12 | 2-003 | 3.2 | Earth and Space Science | SEP5 | CCC4 | CR-2 |
| 13 | 3-009 | 2.1 | Physical/Life Science | SEP2 | CCC2 | CR-2 |
| 14 | 1-002 | 3.2 | Earth and Space Science | SEP5 | CCC4 | SR |
| 15 | 3-010 | 3.2 | Earth and Space Science | SEP2 | CCC4 | SR |
| 16 | 1-010 | 2.1 | Physical/Life Science | SEP2 | CCC2 | SR |
| 17 | 1-023 | 1.2 | Physical Science | SEP3 | CCC4 | SR |
| 18 | 2-002 | 2.1 | Physical/Life Science | SEP2 | CCC2 | SR |
| 19 | 2-008 | 3.2 | Earth and Space Science | SEP2 | CCC4 | CR-2 |
| 20 | 3-018 | 3.3 | Earth and Space Science | SEP3 | CCC5 | CR-2 |
| 21 | 3-016 | 3.3 | Earth and Space Science | SEP3 | CCC5 | SR |
| 22 | 1-014 | 2.1 | Physical/Life Science | SEP2 | CCC2 | SR |
| 23 | 1-024 | 3.2 | Earth and Space Science | SEP5 | CCC4 | SR |
| 24 | 3-008 | 2.3 | Physical/Life Science | SEP3 | CCC5 | CR-2 |
| 25 | 2-013 | 1.2 | Physical Science | SEP3 | CCC4 | CR-2 |
| 26 | 2-017 | 2.3 | Physical/Life Science | SEP3 | CCC5 | SR |
| 27 | 3-001 | 1.2 | Physical Science | SEP3 | CCC4 | SR |
| 28 | 3-017 | 3.3 | Earth and Space Science | SEP3 | CCC5 | SR |
| 29 | 1-020 | 1.2 | Physical Science | SEP3 | CCC4 | CR-2 |
| 30 | 2-015 | 3.2 | Earth and Space Science | SEP2 | CCC4 | SR |
| 31 | 3-023 | 3.3 | Earth and Space Science | SEP3 | CCC5 | SR |
| 32 | 2-018 | 2.3 | Physical/Life Science | SEP3 | CCC5 | CR-2 |
| 33 | 3-022 | 3.2 | Earth and Space Science | SEP5 | CCC4 | CR-2 |
| 34 | 2-020 | 2.1 | Physical/Life Science | SEP2 | CCC2 | SR |
| 35 | 2-024 | 2.1 | Physical/Life Science | SEP2 | CCC2 | SR |
| 36 | 3-024 | 1.2 | Physical Science | SEP3 | CCC4 | SR |

continued

*Science and Engineering Practices (SEPs) and Cross Cutting Concepts (CCCs).
For the full lists of SEPs/CCCs and how they are applied at grade level see the following resources:
**https://www.cde.state.co.us/coscience/sep-progressions, https://www.cde.state.co.us/coscience/ccprogressions**.
Colorado Academic Standards: **https://www.cde.state.co.us/coscience/2020cas-sc-introduction**

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# 9.0 Participation Summary Reports

## 9.1 Description of Participation Summary Report – All Assessments

A Participation Summary Report is available at the district and school levels for each assessed grade and content area. The report includes overall student group composition and participation rates, which should always be taken into consideration when interpreting assessment results.

Information included on the Participation Summary Report can be used to show how the population of Students with Scores represents the total population of Enrolled Students. Reasonable interpretations for the Overall student group may be made with more confidence with higher participation rates and the more the Enrolled Students distribution mirrors the Students with Scores distribution. Interpretations for the Overall student group should be made with caution or completely avoided with lower participation rates and/or greater differences in participation rates across student groups.

Reasonable interpretations for individual student subgroups may be made with more confidence with higher participation rates. Interpretations for individual student subgroups with lower participation rates should be made with caution or completely avoided. Comparison of 2023 subgroup performance can be made with more confidence when the subgroups are of reasonable size and have relatively high and comparable participation rates. Comparisons between subgroups should be made with caution or completely avoided when subgroups have lower participation rates and/or greater differences in participation rates between them.

Districts and schools are encouraged to closely review their local participation data when interpreting and comparing aggregated and group results, as participation rates are critical to interpretation.

### 9.1.1 General Information

Refer to page 1 of the Participation Summary Report.

**A. Test Date**
The administration season and year.

**B. Identification Information**
The school and district name and code.

**C. Subject Area**
The subject area of the report (Mathematics, ELA, CSLA, or Science).

**D. Grade**
The grade level of the assessment.

### 9.1.2 Participation Information

Refer to page 1 of the Participation Summary Report.

**E. Table 1 Information: Distributions by Student Group**

Table 1 of the Participation Summary shows how the population of students with scores represents the total population of enrolled students.

**F. Student Group**

Demographic and program subgroup categories are listed on the left side of the table. The "Not Indicated" subgroups contain results of students for whom no demographic or program information was coded.

**G. Number of Enrolled Students**

The number of students in the demographic group enrolled in the organization (e.g., 35 males and 27 females).

**H. Percent of Total Enrolled Students**

The percent of total students in the demographic group enrolled in the organization (e.g., 56% male and 44% female).

Compare the information included in the *Percent of Total Enrolled Students* column with the information included in the *Percent of Total Students with Scores* column. Closer distributions between enrolled students and students with scores indicate a higher degree of similarity (e.g., representativeness) than distributions with greater differences.

**I. Number of Students with Scores**

The number of students in the demographic group with valid scores on the assessment. Valid scores are records that met attemptedness, are non-voided, and are without suppression codes that excluded them from aggregations (e.g., expelled and home-schooled students or when a misadministration or irregularity occurred during testing). The number of valid scores does not include students with "no score" on the assessment. Example: 30 of 35 males have valid scores; 24 of 27 females have valid scores.

**J. Percent of Total Students with Scores**

The percent of students in the demographic group with valid scores on the assessment (for example, the number of female students with scores divided by the total number of students with scores).

Compare the information included in the *Percent of Total Students with Scores* column with the information included in the *Percent of Total Enrolled Students* column. Closer distributions between enrolled students and students with scores indicate a higher degree of similarity (e.g., representativeness) than distributions with greater differences.

### 9.1.3 Participation Information

Refer to page 2 of the Participation Summary Report.

**K. Table 2 Information: Participation Rates by Student Group**

Table 2 of the Participation Summary provides participation rates for the overall population of students, as well as across student subgroups.

**L. Student Group**

Demographic and program subgroup categories are listed on the left side of the table. The "Not

Indicated" subgroups contain results of students for whom no demographic or program information was coded.

**M. Total Number of Enrolled Students**

The number of enrolled students at the school for that grade.

**N. Students without Scores**

The percent of students registered to take the assessment who did not receive scores.

**O. Students with Scores**

The percent of students with valid scores on the assessment. Valid scores are records that met attemptedness, are non-voided, and are without suppression codes that excluded them from aggregations (e.g., expelled and home-schooled students or when a misadministration or irregularity occurred during testing). The number of valid scores does not include students with "no score" on the assessment.

Reasonable interpretations for the overall student group may be made with more confidence when participation rates for the overall student group are higher and there is more similarity between the overall participation rate and the student group participation rates. Interpretations for the overall student group should be made with caution or completely avoided with lower participation rates and/or greater differences in participation rates across student groups.

Reasonable interpretations for individual student subgroups may be made with more confidence with higher individual participation rates. Interpretations for individual student subgroups with lower participation rates should be made with caution or completely avoided.

## 9.2 Sample Participation Summary Report

Page 1

**School Participation Summary**

**Colorado Measures of Academic Success** (A) **Spring 2023**

School: **SCHOOL NAME (9999)** (B)
District: **DISTRICT NAME (9999)**

**English Language Arts / Literacy** (C) CONFIDENTIAL - DO NOT DISTRIBUTE (D) **Grade 3**

**Purpose:** This report provides information on overall student group composition and participation rates, which should be considered when interpreting and determining appropriate uses of spring 2023 results. N-sizes should always be taken into consideration when interpreting assessment results.

Table 1 shows how the population of students with scores represents the total population of enrolled students. The number and percent of different groups of students by enrolled students and students with scores is included. Closer distributions indicate a higher degree of similarity between enrolled students and students with scores (e.g., representativeness) than distributions with greater differences. Reasonable interpretations for the overall student group may be made with more confidence the more the enrolled students distribution mirrors the students with scores distribution. Interpretations should be made with caution or completely avoided the less similar the students with scores distribution is from the enrolled students distribution.

(E) **Table 1: Spring 2023 CMAS Distributions by Student Group**

| (F) Student Group | (G) Number of Enrolled Students | (H) Percent of Total Enrolled Students | (I) Number of Students with Scores | (J) Percent of Total Students with Scores |
|---|---|---|---|---|
| Female | 27 | 44% | 24 | 44% |
| Male | 35 | 56% | 30 | 56% |
| | | | | |
| Hispanic or Latino | 31 | 50% | 26 | 48% |
| American Indian or Alaska Native | 1 | 2% | 1 | 2% |
| Asian | 2 | 3% | 2 | 4% |
| Black or African American | 0 | 0% | 0 | 0% |
| Native Hawaiian or Other Pacific Islander | 0 | 0% | 0 | 0% |
| White | 28 | 45% | 25 | 46% |
| Two or more races | 0 | 0% | 0 | 0% |
| Not Indicated | 0 | 0% | 0 | 0% |
| | | | | |
| Free/Reduced Lunch Eligible | 30 | 48% | 27 | 50% |
| Not Eligible for Free/Reduced Lunch | 32 | 52% | 27 | 50% |
| | | | | |
| IEP - Yes | 19 | 31% | 17 | 31% |
| IEP - No | 43 | 69% | 37 | 69% |
| | | | | |
| NEP and LEP | 14 | 23% | 12 | 22% |
| Not NEP or LEP | 48 | 77% | 42 | 78% |

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Page 2

**School Participation Summary**

**Colorado Measures of Academic Success** **Spring 2023**

School: **SCHOOL NAME (9999)**
District: **DISTRICT NAME (9999)**

**English Language Arts / Literacy** CONFIDENTIAL - DO NOT DISTRIBUTE **Grade 3**

Table 2 provides participation rates for the overall population of students, as well as across student subgroups. Reasonable interpretations for the overall student group may be made with more confidence when participation rates for the overall student group are higher and there is more similarity between the overall participation rate and the student group participation rates. Interpretations for the overall student group should be made with caution or completely avoided with lower participation rates and/or greater differences in participation rates across student groups.

Reasonable interpretations for individual student subgroups may be made with more confidence with higher individual participation rates. Interpretations for individual student subgroups with lower participation rates should be made with caution or completely avoided.

**K Table 2: Spring 2023 CMAS Participation Rates by Student Group**

| L Student Group | M Total Number of Enrolled Students | N Students without Scores | O Students with Scores |
|---|---|---|---|
| Overall | 62 | 13% | 87% |
| Female | 27 | 11% | 89% |
| Male | 35 | 14% | 86% |
| Hispanic or Latino | 31 | 16% | 84% |
| American Indian or Alaska Native | 1 | | 100% |
| Asian | 2 | | 100% |
| Black or African American | 0 | | |
| Native Hawaiian or Other Pacific Islander | 0 | | |
| White | 28 | 11% | 89% |
| Two or more races | 0 | | |
| Not Indicated | 0 | | |
| Free/Reduced Lunch Eligible | 30 | 10% | 90% |
| Not Eligible for Free/Reduced Lunch | 32 | 16% | 84% |
| IEP - Yes | 19 | 11% | 89% |
| IEP - No | 43 | 14% | 86% |
| NEP and LEP | 14 | 14% | 86% |
| Not NEP or LEP | 48 | 13% | 88% |

90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90

Bar graph segments without a value have a percentage of less than three, where applicable

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# Appendix A
## Scale Score Ranges

**CMAS Mathematics**
**Overall Scale Score Ranges**

| Grade Level/Content | Does Not Yet Meet | Partially Met Expectations | Approached Expectations | Met Expectations | Exceeded Expectations |
|---|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Grade 3 | 650-699 | 700-724 | 725-749 | 750-789 | 790-850 |
| Grade 4 | | | | 750-795 | 796-850 |
| Grade 5 | | | | 750-789 | 790-850 |
| Grade 6 | | | | 750-787 | 788-850 |
| Grade 7 | | | | 750-785 | 786-850 |
| Grade 8 | | | | 750-800 | 801-850 |

**CMAS English Language Arts/Literacy**
**Overall Scale Score Ranges**

| Grade Level | Does Not Yet Meet | Partially Met Expectations | Approached Expectations | Met Expectations | Exceeded Expectations |
|---|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Grade 3 | 650-699 | 700-724 | 725-749 | 750-809 | 810-850 |
| Grade 4 | | | | 750-789 | 790-850 |
| Grade 5 | | | | 750-798 | 799-850 |
| Grade 6 | | | | 750-789 | 790-850 |
| Grade 7 | | | | 750-784 | 785-850 |
| Grade 8 | | | | 750-793 | 794-850 |

**Colorado Spanish Language Arts**
**Overall Scale Score Ranges**

| Grade Level | Does Not Yet Meet | Partially Met Expectations | Approached Expectations | Met Expectations | Exceeded Expectations |
|---|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Grade 3 | 650-699 | 700-724 | 725-749 | 750-778 | 779-850 |
| Grade 4 | | | | 750-771 | 772-850 |

**CMAS Science**
**Overall Scale Score Ranges**

| Grade Level | Partially Met Expectations | Approached Expectations | Met Expectations | Exceeded Expectations |
|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Level 4 |
| Grade 5 | 650-724 | 725-749 | 750-788 | 789-850 |
| Grade 8 | 650-724 | 725-749 | 750-796 | 797-850 |
| Grade 11 | 650-724 | 725-749 | 750-786 | 787-850 |

**CMAS Science**
**2023 Content Standards Performance Indicator Ranges***

| Grade Level | Physical Science | Life Science | Earth and Space Science | Science and Engineering Practices |
|---|---|---|---|---|
| Grade 5 | 441-519 | 440-522 | 446-519 | 448-517 |
| Grade 8 | 444-515 | 440-516 | 442-516 | 447-514 |
| Grade 11 | 442-511 | 441-512 | 440-512 | 447-509 |

* At the content standards level there are performance indicators based on the overall state performance. These levels are not for accountability use and are not set in relation to the content or the overall performance levels. The cut scores are set using one standard deviation around the mean scale score for the state. They change from year to year. Students within this range have “average” performance compared to the state. Students with scores below this range scored “lower than average” in this area and students above the range scored “higher than average”.

**CoAlt Science**
**Overall Scale Score Ranges**

| Grade Level | Emerging | Approaching Target | At Target | Advanced |
|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Level 4 |
| Grade 5 | 150-224 | 225-249 | 250-272 | 273-350 |
| Grade 8 | 150-224 | 225-249 | 250-276 | 277-350 |
| Grade 11 | 150-224 | 225-249 | 250-276 | 277-350 |

# Appendix B

Performance Level Descriptors

## Grade 5 CMAS Science
## Performance Level Descriptors

**Students who Exceeded Expectations showed an advanced understanding of the Colorado Academic Standards' grade 5 science expectations and are ready for the next grade level. Students in the Exceeded Expectations level typically:**

- Model that matter (particles too small to be seen) is always conserved, and mixing can result in new substances.
- Evaluate, measure, and observe materials to identify them based on their properties.
- Explain Earth's gravity as the cause of objects being pulled down toward its center.
- Model that all energy in food on Earth was once energy from the Sun.
- Model matter and energy cycles in an ecosystem, and explain plants get materials to grow from air and water.
- Evaluate the impact of star distance from Earth on the apparent brightness of stars.
- Analyze and explain patterns caused by Earth's orbit and rotation and the orbit of the Moon around Earth.
- Model and analyze the interactions between Earth's major systems and their impact on shaping Earth's surface.
- Evaluate the distribution of water among the different reservoirs on Earth using percentages.
- Evaluate solutions that communities use to protect Earth's environment and resources.

**Students who Met Expectations showed a strong understanding of the Colorado Academic Standards' grade 5 science expectations and are ready for the next grade level. Students in the Met Expectations level typically:**

- Describe matter (particles too small to be seen) as always conserved, and mixing can result in new substances.
- Make observations and measurements of properties used to identify materials.
- Describe evidence that demonstrates Earth's gravity as the cause of objects being pulled down toward its center.
- Demonstrate that all energy in food on Earth was once energy from the Sun.
- Explain matter and energy cycles in an ecosystem and explain that plants get materials to grow from air and water.
- Describe that a star's distance from Earth affects its apparent brightness.
- Demonstrate patterns caused by Earth's orbit and rotation and the orbit of the Moon around Earth.
- Model the interactions between Earth's major systems and their impact on shaping Earth's surface.
- Describe the relative proportions of salt water and fresh water in different reservoirs on Earth.
- Communicate ways that communities use scientific ideas to protect Earth's environment and resources.

**Students who Approached Expectations showed a moderate understanding of the Colorado Academic Standards' grade 5 science expectations and will likely need additional academic support in the next grade level. Students in the Approached Expectations level typically:**

- Describe matter (particles too small to be seen) as always conserved, and mixing can result in new substances.
- Observe the properties of an object to identify it.
- Describe evidence that demonstrates Earth's gravity as the cause of objects being pulled toward its center.
- Show the transfer of energy from the Sun to things animals use as food.
- Describe matter and energy cycles in an ecosystem and explain that plants get materials to grow from air and water.
- Relate the distance between a star and Earth to the star's apparent brightness.
- Demonstrate Earth's patterns using shadows, day and night, and the seasonal appearance of some stars.
- Describe Earth's major systems and how they interact.
- Identify the proportions of salt water and fresh water in different reservoirs on Earth.
- Summarize ways that communities protect Earth's environment and resources.

**Students who Partially Met Expectations showed a limited understanding of the Colorado Academic Standards' grade 5 science expectations and will need additional academic support in the next grade level to successfully engage in further study. Students in this level typically:**

- Describe matter as made up of small particles and changes caused by the mixing of substances.
- Identify materials as having different properties.
- Identify gravity as the cause of objects falling to the ground.
- Demonstrate that the Sun and plants contribute to animals' food.
- Describe matter and energy cycles in an ecosystem and explain that plants get materials to grow from air and water.
- Compare the brightness of the Sun and stars as seen from Earth.

- Describe daily changes in day and night and the characteristics of shadows.
- Identify the major interacting systems on Earth and describe an interaction between two of them.
- Identify the different reservoirs of salt water and fresh water on Earth.
- Describe human activities interacting with natural Earth systems and their impact.

## Grade 8 CMAS Science
## Performance Level Descriptors

**Students who Exceeded Expectations showed an advanced understanding of the Colorado Academic Standards' middle school science expectations and are ready for the next grade level. Students in the Exceeded Expectations level typically:**

- Use complex data sets and models to describe the structure and properties of matter under different conditions.
- Use Newton's Laws to design investigations to show the relationship between mass and force.
- Demonstrate the numerical relationships between variables relating to transfers among different forms of energy.
- Explain the properties and behavior of waves and their interaction with different materials.
- Use multiple methods to demonstrate the function of parts of and explain the effects of different environments on organisms.
- Explain multiple effects of resource availability, patterns within, and consequences of changes to an ecosystem.
- Illustrate how mutations affect an organism, and the genetic impact of asexual versus sexual reproduction.
- Analyze complex patterns in modern and fossil organisms to infer and explain relationships.
- Analyze, model, and compare the properties of solar system objects with a focus on scale, cyclic patterns in the Sun-Earth-Moon system, and the role of gravity in motion of planetary systems and galaxies.
- Explain how geoscience processes cycle matter and energy among Earth's systems to transform Earth's surface features and climate throughout history.
- Use complex data and evidence to illustrate geologic processes and how humans interact with and manage natural resources and hazards.

**Students who Met Expectations showed a strong understanding of the Colorado Academic Standards' middle school science expectations and are ready for the next grade level. Students in the Met Expectations level typically:**

- Describe the structure and properties of matter under different conditions, including the chemical composition.
- Use Newton's Laws to conduct conventional investigations to show the relationship between mass and force.
- Show the numerical relationships between variables relating to transfers among different forms of energy.
- Explain the properties and behavior of waves and their interaction with different materials.
- Explain the function of parts of and explain the effects of different environments on organisms.
- Explain an effect of resource availability, a predictable pattern, and a consequence of change to an ecosystem.
- Show how mutations affect an organism and the genetic impact of asexual versus sexual reproduction.
- Analyze routine patterns in modern and fossil organisms to infer and explain relationships.
- Describe properties of solar system objects with a focus on scale, routine cyclic patterns in the Sun-Earth-Moon system, and the role of gravity in motion of planetary systems and galaxies.
- Describe how geoscience processes cycle matter and energy among Earth's systems to transform Earth's surface features and climate throughout history.
- Describe geologic processes and how humans interact with and manage natural resources and hazards.

**Students who Approached Expectations showed a moderate understanding of the Colorado Academic Standards' middle school science expectations and will likely need additional academic support in the next grade level. Students in the Approached Expectations level typically:**

- Describe the structure and properties of matter under different conditions.
- Use Newton's Laws to show the relationship between mass and force.
- Show the numerical relationships between variables relating to transfers between different forms of energy.
- Use models to describe the properties and behavior of waves and their interaction with different materials.
- Illustrate the function of parts of, and explain the effects of different environments on, organisms.
- Identify an effect of resource availability, a predictable pattern, or consequence of change to an ecosystem.
- Describe how structural changes affect an organism and the genetic difference between reproduction types.
- Explain simple patterns among modern and fossil organisms to explain relationships between them.
- Identify and describe properties of solar system objects with a focus on scale, familiar cyclic patterns in the Sun-Earth-Moon system, and the role of gravity in motion of planetary systems and galaxies.

- Illustrate a basic explanation of how geoscience processes cycle matter and energy among Earth's systems to transform Earth's surface features and climate throughout history.
- Give a familiar explanation of geologic processes and how humans interact with and manage natural resources and hazards.

**Students who Partially Met Expectations showed a limited understanding of the Colorado Academic Standards' middle school science expectations and will need additional academic support in the next grade level to successfully engage in further study. Students in this level typically:**

- Partially label and identify familiar models showing the structure and properties of matter.
- Identify when Newton's Laws can be used to show the relationship between mass and force.
- Identify and observe examples, changes, and transfers of energy while describing the factors related to them.
- Use simple models to describe the properties and behavior of waves and their interaction with different materials.
- Use a model to show the parts of, and explain the effects of different environments on, organisms.
- Identify resources needed by organisms to live.
- Identify a pattern within or an effect of change to an ecosystem.
- Identify structural changes to genes and distinguish between asexual and sexual reproduction.
- Identify familiar patterns in fossils to infer simple relationships among organisms.
- Identify key properties of the major solar system objects with a focus on scale, cyclic patterns in the Sun-Earth-Moon system, and the importance of gravity in motion in planetary systems and galaxies.
- Identify major geoscience processes that cycle matter and energy among Earth's systems to transform Earth's surface features and climate throughout history.
- Communicate a basic explanation of geologic processes and how humans interact with and manage natural resources and hazards.

## Grade 11 CMAS Science
## Performance Level Descriptors

**Students who Exceeded Expectations showed an advanced understanding of the Colorado Academic Standards' middle school science expectations and are ready for the next grade level. Students in the Exceeded Expectations level typically:**

- Predict outcomes of chemical reactions using patterns and describe energy released during nuclear processes.
- Explain, predict, and evaluate how forces can affect the motion and momentum of objects in a system.
- Evaluate changes, transformations, and conservation of all types of energy in a complex system or device.
- Evaluate wave properties and electromagnetic radiation and the benefit to technological devices that use them.
- Explain how macromolecules are connected and how differentiation of cells leads to multiple levels of organization in complex organisms.
- Model complex interactions involved in ecosystems, including how matter and energy cycle through them.
- Explain the role of DNA and chromosomes in both common and complex scenarios.
- Analyze and explain the variation and impact of expressed traits relative to environmental conditions.
- Create and evaluate complex models and evidence about the size of the universe and changes in stars over their lifetimes.
- Illustrate how the geologic record shows that Earth's internal and surface processes and systems are interconnected.
- Explain, evaluate, and propose solutions to human interactions with Earth.

**Students who Met Expectations showed a strong understanding of the Colorado Academic Standards' middle school science expectations and are ready for the next grade level. Students in the Met Expectations level typically:**

- Describe patterns in the chemical and nuclear properties of elements and characteristics of reactions.
- Use math to demonstrate how forces can affect the motion and momentum of objects in a system.
- Describe and/or evaluate changes, transformations, and conservation of all types of energy in a simple system.
- Explain wave properties and electromagnetic radiation and the benefit to technological devices that use them.
- Explain connections among macromolecules and the multiple levels of organization in complex organisms.
- Analyze and explain complex interactions involved in ecosystems, including the cycling of matter and energy through them.
- Explain the role of DNA and chromosomes in common scenarios.
- Analyze and explain the variation and impact of expressed traits relative to environmental conditions.

- Model and communicate routine scientific ideas about the size of the universe and changes in stars over their lifetimes.
- Use models and data to illustrate how Earth's internal and surface processes and systems are interconnected.
- Explain and evaluate human interactions with Earth.

**Students who Approached Expectations showed a moderate understanding of the Colorado Academic Standards' middle school science expectations and will likely need additional academic support in the next grade level. Students in the Approached Expectations level typically:**

- Use models to identify patterns in chemical and nuclear reactions and describe properties using the periodic table.
- Describe or calculate how forces affect the motion and momentum of an object in a system.
- Illustrate and evaluate the energy of objects and the direction of the flow of energy in a system.
- Identify wave properties and electromagnetic radiation in technological devices.
- Communicate simple explanations of how macromolecules are related and how structures in complex organisms follow multiple levels of organization.
- With given models, describe interactions involved in ecosystems, including the cycling of matter and energy through them.
- Describe familiar examples of the role of DNA and chromosomes.
- Relate simple and familiar explanations, evidence, and statistics to the variation and impact of expressed traits relative to environmental conditions.
- Identify and use familiar details, evidence, and models about the size of the universe and changes in stars over their lifetimes.
- Use familiar models to illustrate how Earth's internal and surface processes and systems are interconnected.
- Provide familiar explanations and solutions about the availability, usage, and management of natural resources.

**Students who Partially Met Expectations showed a limited understanding of the Colorado Academic Standards' middle school science expectations and will need additional academic support in the next grade level to successfully engage in further study. Students in this level typically:**

- Recognize that the periodic table organizes the elements based on patterns, and chemical reactions involve electrons, while nuclear reactions involve changes in the nucleus.
- Apply simple math to describe how forces affect the motion and momentum of objects in a system.
- Identify the type of energy an object has and describe the flow and transformations of energy in a system.
- Describe how a change in one wave property affects other wave properties and identify technological devices that use electromagnetic radiation.
- Describe DNA structure, cell division, systems of structures in complex organisms, and how organisms grow.
- Identify the factors to describe interactions involved in simple ecosystems, including the cycling of matter and energy through them.
- Identify the importance of DNA and chromosomes.
- Describe how advantageous and disadvantageous expressed traits vary within a population.
- Identify the size of the universe as dynamic, and label basic models of stars producing the elements.
- Use simple models and data to illustrate how Earth's internal and surface processes and systems cycle matter and energy, shape Earth's surface, and affect life.
- Identify and summarize common human interactions with Earth regarding the availability, usage, and management of natural resources.

## Grade 5 CoAlt Science
## Performance Level Descriptors

**Students demonstrate science concepts and skills aligned to the Grade Level Expectations and Extended Evidence Outcomes contained in the Colorado Academic Standards.**

**Student showed an initial understanding of the EEOs of Colorado' s grade 5 science standards and will likely need extensive academic support to successfully engage in the next grade level. Students in the Emerging level typically:**

- Identify that matter is made of particles and that adding or removing matter from a sample changes the mass of the sample.
- Identify matter as solid, liquid, or gas.
- Identify down as the direction gravity causes objects to move.
- Identify that the Sun is the source of energy for plants and identify air and water as what plants need to grow.
- Identify an animal's source of food.
- Identify that the Sun appears brighter than other stars.
- Identify the length of shadows as something that changes at different times of the day and the amount of daylight as something that changes across seasons.
- Identify a living or nonliving thing involved in an interaction between any two of Earth's systems.
- Identify a source of salt water or fresh water.
- Identify a way to protect Earth's resources and environment.

**Student showed a limited understanding of the EEOs of Colorado' s grade 5 science standards and will likely need moderate academic support to successfully engage in the next grade level. Students in the Approaching Target level typically:**

- Identify that matter is made of particles whose behavior has observable effects.
- Identify that heating, cooling, and mixing substances does not change the total mass of the substances.
- Use an example to identify a material based on its properties.
- Identify gravity as the force that causes an object to move down toward Earth.
- Identify that the energy in animals' food was once energy from the Sun.
- Identify what living components of a food chain or web make their own food or must eat food.
- Identify that the Sun is a star that appears brighter than other stars because of their different distances from Earth.
- Identify an interaction between any two of Earth's systems (geosphere, biosphere, hydrosphere, and atmosphere).
- Identify that there is much more salt water than fresh water on Earth.
- Identify a way to protect Earth's resources and environment.

**Student showed a foundational understanding of the EEOs of Colorado' s grade 5 science standards and is academically prepared to successfully engage in the next grade level with appropriate support. Students in the At Target level typically:**

- Classify materials based on similarities and differences in their properties.
- Identify that heating, cooling, and mixing substances does not change the total mass of the substances but can change the properties of the substances.
- Describe that the force of gravity pulls all objects down toward Earth.
- Describe that air and water, but not soil, are sources of matter that plants need to grow.
- Describe the movement of matter between two components of a food chain or web.
- Identify that the Sun is a star that appears brighter than other stars because of different distances of the stars from Earth.
- Interpret daily changes in the amount of daylight across seasons and of the length of shadows at different times of the day.
- Describe an interaction between any two of Earth's systems (geosphere, biosphere, hydrosphere, and atmosphere).
- Describe the relative amounts of salt water and fresh water on Earth.
- compare ways to protect Earth's resources and environment.

**Student showed a foundational understanding of the EEOs of Colorado' s grade 5 science standards and is academically prepared to successfully engage in the next grade level with appropriate support. Students in the At Target level typically:**

- Classify and identify materials based on similarities and differences in their properties.
- Compare the properties of two substances before and after mixing.
- Describe that the force of gravity pulls all objects down toward Earth but that not all objects demonstrate downward movement toward Earth.
- Describe that the energy in animals' food was once energy from the Sun but that the matter in animal's food is not from the Sun.
- Describe that nutrients from soil can help a plant grow, but air and water are the sources of matter that make up the new mass that plants gain as they grow.
- Describe the movement of matter between three or more components of a food chain or web.
- Identify that the Sun is a star that appears brighter than other stars because of their different distances from Earth and that distance is proportional to apparent brightness.
- Graph daily changes in the amount of daylight across seasons and of the length of shadows across time and at different times of the day.
- Explain an interaction between any two of Earth's systems (geosphere, biosphere, hydrosphere, and atmosphere).
- Compare the relative amounts of salt water and fresh water on Earth found in oceans, lakes, rivers, glaciers, groundwater, and polar ice caps.
- Compare ways to protect Earth's resources and environment and describe why one way may be better than another.

## Grade 8 CoAlt Science
## Performance Level Descriptors

**Students demonstrate science concepts and skills aligned to the Grade Level Expectations and Extended Evidence Outcomes contained in the Colorado Academic Standards.**

**Student showed an initial understanding of the EEOs of Colorado' s middle school science standards and will likely need extensive academic support to successfully engage in the next grade level. Students in the Emerging level typically:**

- Identify that a molecule is made up of atoms and that atoms have mass.
- Identify a property that changes because of a chemical change.
- Identify a force as what makes objects move, change direction, or become damaged.
- Identify a change in temperature as evidence of energy transfer.
- Identify a cell as the smallest living part of a living thing and that organs and organisms are made up of cells.
- Identify that offspring have similar characteristics to their parents.
- Identify that the appearance of Earth's Moon changes, or Earth's seasons change, because of their relative positions in space.
- Identify that heat energy from Earth's interior can change and form rocks.
- Identify a change that makes more water vapor, liquid water, or ice.
- Identify that humans use natural resources, can affect the environment, and need to prepare for natural hazards.
- Identify that all solar system objects are affected by gravity.

**Student showed a limited understanding of the EEOs of Colorado' s middle school science standards and will likely need moderate academic support to successfully engage in the next grade level. Students in the Approaching Target level typically:**

- Identify that the amount of or the mass of atoms does not change in a chemical reaction.
- Identify simple molecules, such as water or oxygen gas.
- Identify a device that releases or absorbs heat energy by chemical processes and a device that either minimizes or maximizes heat energy transfer.
- Identify the relative amounts of kinetic and potential energy in a system.
- Identify that different materials can affect the reflection, absorption, or transmission of a light or sound wave.
- Identify how characteristic animal behaviors and specialized plant structures help the plants and animals survive, and identify examples of competitive, predatory, and mutually beneficial relationships between organisms.
- Identify an example of the cycling of matter and energy among living and nonliving parts of an ecosystem.

- Identify that variations of traits in populations increase some individuals' probability of surviving and reproducing and that natural selection works over many generations.
- Identify two locations of similar or different climates.
- Identify that regional climate is based on the region's landforms and latitude.
- Identify that Earth's resources are limited and unevenly distributed.
- Identify gravity as what keeps Earth and the Moon in their orbits and as what draws and holds together the matter making up Earth and the Moon.

**Student showed a foundational understanding of the EEOs of Colorado' s middle school science standards and is academically prepared to successfully engage in the next grade level with appropriate support. Students in the At Target level typically:**

- Describe the similarities and differences of the properties of a substance before and after a chemical change or a change in state.
- Explain the operation of a device that releases or absorbs thermal energy by chemical processes or a device that minimizes or maximizes thermal energy transfer from one object to another.
- Identify that electric or magnetic fields exist between objects exerting forces on each other even though the objects are not in contact.
- Identify factors that affect the strength of electric or magnetic forces.
- Describe how loudness or brightness is related to the energy in the sound wave.
- Identify that major organs are made up of cells.
- Describe the primary roles of at least three major components of a plant or animal cell.
- Describe how food supports growth and releases energy in an organism.
- Identify that organisms detect, process, and use information via the nervous system.
- Identify similarities and differences among modern organisms and fossilized organisms.
- Identify how the layering of fossils in rock strata reveals their chronological order of appearance.
- Describe the distribution of fossils as evidence of past tectonic plate motions.
- Describe that the motion and interaction of air masses cause changes in weather conditions and to describe how some natural hazards can be predicted, prepared for, and mitigated.
- Describe the cyclic patterns of the Moon's common phases and Earth's seasons.
- Identify at least one similarity and one difference among objects in the solar system.

**Student showed a solid understanding of the EEOs of Colorado' s middle school science expectations and is well prepared to successfully engage in the next grade level with appropriate support. Students in the Advanced level typically:**

- Describe that the number of or the mass of atoms does not change in a chemical reaction, but that the atoms are just rearranged.
- Design a solution to reduce the force of impact in a collision of two objects.
- Demonstrate that when the position of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
- Identify that digitized signals are a reliable way to encode and transmit information.
- Explain how photosynthesis plays a role in the cycling of matter and the flow of energy between plants and animals.
- Explain how food supports growth and releases energy in an organism.
- Explain how the genetic characteristics of a generation produced by asexual or sexual reproduction relate to the previous generation.
- Identify the relationship between genetic variations among individuals and advantages or disadvantages those individuals have for surviving and reproducing.
- Describe how the state of water changes as it moves through the water cycle.
- Describe how a natural resource can be transformed to make a new, synthetic material.
- Identify how a change in environmental conditions, such as resource availability, can affect organisms and populations in an ecosystem.
- Develop a solution to an environmental problem to minimize the impact of the problem.

## Grade 11 CoAlt Science
## Performance Level Descriptors

**Students demonstrate science concepts and skills aligned to the Grade Level Expectations and Extended Evidence Outcomes contained in the Colorado Academic Standards.**

**Student showed an initial understanding of the EEOs of Colorado' s high school science standards and will likely need extensive academic support to successfully engage in the next grade level. Students in the Emerging level typically:**

- Identify that matter is made of atoms that have mass.
- Identify that energy can be transferred but not created or destroyed, including in chemical reactions.
- Identify that waves are carriers of energy and information.
- Identify DNA as the molecule that carries instructions and cell division as what allows an organism to grow.
- Identify that offspring traits resemble parent traits and that those traits vary within a population.
- Identify that the energy and material resources, as well as the events and hazards in an environment, affect the organisms living there.
- Identify that energy from sunlight, water, and living things influence Earth systems.
- Identify a proposal that will protect a threatened or endangered species.
- Identify examples of conserving, recycling, and reusing limited energy and mineral resources.
- Identify that orbiting objects follow roughly circular orbital paths.

**Student showed a limited understanding of the EEOs of Colorado' s high school science standards and will likely need moderate academic support to successfully engage in the next grade level. Students in the Approaching Target level typically:**

- Identify elements in the periodic table based on properties.
- Describe changes in energy and matter that occur because of physical or chemical changes.
- Describe the Law of Conservation of mass, object motion, temperature changes, or the operation of a device.
- Describe the relationship between the properties of waves, energy, and information.
- Identify that the structure of DNA determines the characteristics of anatomical structures and that genes carry traits from parents to offspring.
- Identify that organisms use energy and matter obtained from the environment for growth.
- Identify how the quantity of resources, events, and hazards in an environment affect the organisms living there and identify that organisms that are better able to survive in the environment are better able to reproduce and increase in number.
- Describe an internal Earth process or external process that influences the characteristics of Earth's atmosphere, surface, or ocean floor, or changes in living organisms.
- Identify relationships between the management of natural resources, the sustainability of human populations, natural hazards, and biodiversity.
- Identify Earth as the object that pulls other objects on it down.
- Identify the universe as a space containing galaxies, which are collections of stars, and that stars produce elements.

**Student showed a foundational understanding of the EEOs of Colorado' s high school science standards and is academically prepared to successfully engage in the next grade level with appropriate support. Students in the At Target level typically:**

- Describe how mass and electrical charge affect force, the relationship between mass, speed, and momentum, and the relationship between forces and electric or magnetic fields.
- Identify energy transformations, such as light energy to heat energy, or energy transfer within a device.
- Calculate the inputs and outputs of energy from different components of a system or device.
- Compare the wave and particle models of electromagnetic radiation.
- Identify the advantages and disadvantages of using and storing digital information.
- Evaluate how a technological device uses wave energy to perform its function.
- Describe the function of an organ system.
- Identify a mechanism a body uses to stay in balance during environmental changes.
- Identify changes in the number of individuals in an animal population when conditions in their environment change.

- Describe the changes in the amount of matter or energy as it travels through an energy pyramid, a food web, or nutrient cycle.
- Describe the distribution of a trait within a population, how organisms with advantageous traits tend to increase in number, and how species with disadvantageous traits can become extinct.
- Describe a change in Earth's climate or a change to Earth's surface, atmosphere, or hydrosphere.
- Identify that the Sun has a life cycle during which its energy output changes and different elements are produced.
- Identify that galaxies move within space.
- Describe relationships between orbiting objects in the solar system.

**Student showed a solid understanding of the EEOs of Colorado' s high school science expectations and is well prepared to successfully engage in the next grade level with appropriate support. Students in the Advanced level typically:**

- Identify properties of groups and families of elements and the uses of commonly found elements.
- Explain or predict the relationship between changes in experimental conditions, the rate of energy transfer, and the amount of product from a chemical reaction.
- Describe the energy released and the composition of nuclei for nuclear fission or nuclear fusion.
- Evaluate designs that minimize the effect of the force on an object during a collision.
- Describe how a change in an electric current can change a magnetic field.
- Describe the process of photosynthesis transforming light into energy for plants.
- Explain how organisms combine the simple elements that make up sugar molecules with other elements to make up proteins necessary for growth and metabolism.
- Compare and contrast the use of oxygen and stored energy in aerobic and anaerobic environments.
- Describe common ancestry in terms of anatomical structures or genes.
- Describe the composition of Earth's layers and the cycling of matter by the convection of Earth's mantle and explain the ages of crystal rock in terms of plate motion.
- Explain relationships between orbiting objects in the solar system.

## About ELA and CSLA Performance Level Descriptors

| Performance Level | Level of Text Complexity[1] | Range of Accuracy[2] | Quality of Evidence[3] | |
|---|---|---|---|---|
| | | | Grade 3 | Grades 4-8 |
| 5 | Very Complex<br>Moderately Complex<br>Readily Accessible | Mostly Accurate<br>Mostly Accurate<br>Accurate | Explicit<br>Explicit<br>Explicit | Explicit &<br>Inferential Explicit<br>& Inferential |
| 4 | Very Complex<br>Moderately Complex<br>Readily Accessible | Generally Accurate<br>Generally Accurate<br>Mostly Accurate | Explicit<br>Explicit<br>Explicit | Explicit &<br>Inferential Explicit<br>& Inferential |
| 3 | Very Complex<br>Moderately Complex<br>Readily Accessible | Minimally Accurate<br>Generally Accurate<br>Mostly Accurate | Explicit<br>Explicit<br>Explicit | Explicit &<br>Inferential Explicit<br>& Inferential |
| 2 | Very Complex<br>Moderately Complex<br>Readily Accessible | Inaccurate<br>Minimally Accurate<br>Partially Accurate | Explicit<br>Explicit<br>Explicit | Explicit &<br>Inferential Explicit<br>& Inferential |

1. **Text Complexity**
   The complexity framework reflects the importance of text complexity as it relates to the CCSS, which indicates that 50 percent of an item's complexity is linked to the complexity of the text(s) used as the stimulus for that item. Consequently, to determine students' performance levels, it is critical to identify the pattern of responses when students respond to items linked to passages with distinct text complexities. To this end, a clear and consistent model was developed to define text complexity and has determined to use three text complexity levels: readily accessible, moderately complex, or very complex. For more information on text complexity, refer to the CCSS Appendix A (http://www.corestandards.org/ELA-Literacy) and Appendix B (http://www.corestandards.org/ELA-Literacy).

   Two components are used for determining text complexity for **all** passages:

   - Two quantitative text complexity measures (Reading Maturity Metric and Lexile) will be used to analyze all reading passages to determine **an initial** recommendation for placement of a text into a grade band and subsequently a grade level.
   - Text Analysis Worksheets (https://parcc-assessment.org/ela-literacy), one for informational text and one for literary text, are then used to determine qualitative measures. Trained evaluators use these worksheets to determine a recommendation for qualitative text complexity within the grade level, with each text defined as readily accessible, moderately complex, or very complex.

   For multimedia texts, qualitative judgments from one or both of the "optional" categories in the Complexity Analysis Worksheet will be combined with judgments in the other categories to make a holistic determination of the complexity of the material.

2. **Range of Accuracy**
   There are three types of items on the assessments. For Evidence-Based Selected Response (EBSR) and Technology-Enhanced Constructed Response (TECR) items, the design is such that the items help contribute to an understanding of how accurately students comprehend text (demonstrate mastery of CCSS Reading Standards 2-10). Some of these items offer opportunities for students to receive partial credit based on the range of accuracy. For Prose-Constructed Response (PCR) items, draft scoring rubrics were developed (refer to *CMAS Test Design: Scoring Rubrics* available at

http://www.cde.state.co.us/assessment/cmas) that include a Reading dimension to measure comprehension. Scores on the PCR items contribute to an evaluation of the degree to which a student can accurately comprehend a text. The Performance Level Descriptors (PLDs) describe five levels of accuracy at grades 3-8 that are determined using the reading data collected through EBSR, TECR, and PCR items:

**Accurate** – The student is able to accurately state both the general ideas expressed in the text(s) and the key and supporting details. The response is complete, and the student demonstrates full understanding.

**Mostly accurate** – The student is able to accurately state most of the general ideas expressed in the text(s) and the key and supporting details, but the response is incomplete or contains minor inaccuracies. The student demonstrates understanding.

**Generally accurate** – The student is able to accurately state the gist of the text(s) but fails to accurately state the key and supporting details in the text or to connect such details to the overarching meaning of the text(s). The student demonstrates basic understanding.

**Partially accurate –** The student is able to accurately state the gist of the text(s) but is unable to state some of the key or supporting details with accuracy. The student is partially able to connect the specific details of the text to the overarching meaning(s) of the text. The student demonstrates partial understanding**.**

**Minimally accurate** – The student is unable to accurately state the gist of the text(s) but is able to minimally state some of the key or supporting details with accuracy. The student does not connect the specific details of the text to the overarching meaning(s) of the text. The student demonstrates minimal understanding.

**Inaccurate** – The student is unable to accurately state either the gist of the text or the key and supporting details evident in the text. The student demonstrates limited understanding.

3. **Quality of Evidence**

All items are designed to contribute to an understanding of how students "read closely to determine what the text says explicitly and to make logical inferences from it" and "cite specific textual evidence when writing or speaking to support conclusions drawn from the text" (CCSS Anchor Reading Standard 1). Some items offer opportunities for students to receive partial credit based on the quality of evidence provided. Students support their comprehension with explicit and/or inferential evidence:

**Explicit evidence** – Students show how the explicit words and phrases (details) from the text support statements made about the meaning of the text.

**Inferential evidence** – Students show how inferences drawn from the text support statements made about the meaning of the text.

# Grade 3 ELA and CSLA Performance Level Descriptors

Reading

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text.<br>● With moderately complex text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text.<br>● With readily accessible text, students demonstrate the ability to be accurate when asking and/or answering questions, showing full understanding of the text when referring to explicit details and examples in the text. | In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the ability to be generally accurate when asking and/or answering questions, showing general understanding of the text when referring to explicit details and examples in the text.<br>● With moderately complex text, students demonstrate the ability to be generally accurate when asking and/or answering questions, showing general understanding of the text when referring to explicit details and examples in the text.<br>● With readily accessible text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text. | In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the ability to be minimally accurate when asking and/or answering questions, showing minimal understanding of the text when referring to explicit details and examples in the text.<br>● With moderately complex text, students demonstrate the ability to be generally accurate when asking and/or answering questions, showing basic understanding of the text when referring to explicit details and examples in the text.<br>● With readily accessible text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text. | In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the inability to ask or answer questions, showing limited understanding of the text when referring to explicit details and examples in the text.<br>● With moderately complex text, students demonstrate the ability to be minimally accurate when asking and/or answering questions, showing minimal understanding of the text when referring to explicit details and examples in the text.<br>● With readily accessible text, students demonstrate the ability to be partially accurate when asking and/or answering questions, showing partial understanding of the text when referring to explicit details and examples in the text. |

Writing - Written Expression

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students address the prompts and provide effective development of ideas, including when drawing evidence from multiple sources, in the majority of instances | In **writing**, students address the prompts and provide development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating purposeful and | In **writing**, students address the prompts and provide basic development of ideas, including when drawing evidence from multiple sources, while in the majority of | In **writing**, students address the prompts and provide minimal development of ideas, including when drawing evidence from multiple sources, while in the |

| | | | |
|---|---|---|---|
| demonstrating purposeful and controlled organization.<br><br>The student:<br>● Provides effective development of the topic and/or narrative elements, using reasoning, details, text-based evidence, and/or description.<br>● Develops topic and/or narrative elements in a manner that is appropriate to the task and purpose.<br>● Demonstrates purposeful organization that includes an introduction and/or conclusion.<br>● Effectively uses linking words and phrases, descriptive words, and/or temporal words to express ideas with clarity. | mostly controlled organization.<br><br>The student:<br>● Develops the topic and/or narrative elements using reasoning, details, text- based evidence, and/or description.<br>● Develops topic and/or narrative elements in a manner that is mostly appropriate to the task and purpose.<br>● Demonstrates purposeful organization that is mostly controlled and may include an introduction and/or conclusion.<br>● Uses linking words and phrases, descriptive words, and/or temporal words to express ideas with clarity. | instances demonstrating organization that sometimes is controlled.<br><br>The student:<br>● Develops the topic and/or narrative elements using some reasoning, details, text- based evidence, and/or description.<br>● Demonstrates some organization.<br>● Includes some linking words and phrases, descriptive words, and/or temporal words, limiting the clarity with which ideas are expressed. | majority of instances demonstrating organization that often is not controlled.<br><br>The student:<br>● Minimal development of the topic and/or narrative elements and is, therefore, inappropriate to the task and purpose.<br>● Demonstrates minimal organization.<br>● Includes minimal linking words and phrases, descriptive words, and/or temporal words, limiting the clarity with which ideas are expressed. |

Writing - Knowledge of Language and Conventions

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students demonstrate full command of the conventions of Standard English consistent with edited writing. There may be some errors in grammar and usage, but overall meaning is clear. | In **writing**, students demonstrate command of the conventions of Standard English consistent with edited writing. There are errors in grammar and usage that may occasionally impede understanding. | In **writing**, students demonstrate basic command of the conventions of Standard English consistent with edited writing. There are few patterns of errors in grammar and usage that impede understanding, demonstrating partial control over language. | In **writing**, students demonstrate minimal command of the conventions of Standard English consistent with edited writing. There are patterns of errors in grammar and usage that impede understanding, demonstrating minimal control over language. |

# Grade 4 ELA and CSLA Performance Level Descriptors

Reading

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to be accurate when asking and/or answering questions, showing full understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to be generally accurate when asking and/or answering questions, showing general understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to be generally accurate when asking and/or answering questions, showing general understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to ask and/or answer questions with minimal accuracy, showing minimal understanding of the text when referring to explicit details and examples in the text.<br>• With moderately complex text, students demonstrate the ability to be generally accurate when asking and/or answering questions, showing basic understanding of the text when referring to explicit details and examples in the text.<br>• With readily accessible text, students demonstrate the ability to be mostly accurate when asking and/or answering questions, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the inability to be accurate when asking and/or answering questions, showing limited understanding of the text when referring to explicit details and examples in the text.<br>• With moderately complex text, students demonstrate the ability to ask and/or answer questions with minimal accuracy, showing minimal understanding of the text when referring to explicit details and examples in the text.<br>• With readily accessible text, students demonstrate the ability to be partially accurate when asking and/or answering questions, showing partial understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. |

Writing - Written Expression

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students address the prompts and provide effective development of ideas, including when drawing evidence from multiple sources, in the majority of instances demonstrating purposeful and controlled organization.<br><br>The student:<br>• Provides effective development of the topic and/or narrative elements, using reasoning, details, text-based evidence, and/or description.<br>• Develops topic and/or narrative elements in a manner that is appropriate to the task and purpose.<br>• Demonstrates purposeful organization that includes an introduction and/or conclusion.<br>• Correctly uses linking words and phrases, descriptive words, and/or temporal words to express ideas with clarity. | In **writing**, students address the prompts and provide development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating purposeful and mostly controlled organization.<br><br>The student:<br>• Develops the topic and/or narrative elements using reasoning, details, text-based evidence, and/or description.<br>• Develops topic and/or narrative elements in a manner that is mostly appropriate to the task and purpose.<br>• Demonstrates purposeful organization that is mostly controlled and may include an introduction and/or conclusion.<br>• Uses linking words and phrases, descriptive words, and/or temporal words to express ideas with clarity. | In **writing**, students address the prompts and provide basic development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating organization that sometimes is controlled.<br><br>The student:<br>• Develops topic and/or narrative elements in manner that is general in its appropriateness to the task and purpose.<br>• Demonstrates some organization.<br>• Includes some linking words and phrases, descriptive words, and/or temporal words, limiting the clarity with which ideas are expressed. | In **writing**, students address the prompts and provide minimal development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating organization that often is not controlled.<br><br>The student:<br>• Provides minimal development of the topic and/or narrative elements and is, therefore, inappropriate to the task and purpose.<br>• Demonstrates minimal organization.<br>• Includes minimal linking words and phrases, descriptive words, and/or temporal words, limiting the clarity with which ideas are expressed. |

Writing - Knowledge of Language and Conventions

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students demonstrate full command of the conventions of Standard English consistent with edited writing. There may be some errors in grammar and usage, but overall meaning is clear. | In **writing**, students demonstrate command of the conventions of Standard English consistent with edited writing. There are errors in grammar and usage that may occasionally impede understanding. | In **writing**, students demonstrate basic command of the conventions of Standard English consistent with edited writing. There are few patterns of errors in grammar and usage that impede understanding, demonstrating partial control over language. | In **writing**, students demonstrate minimal command of the conventions of Standard English consistent with edited writing. There are patterns of errors in grammar and usage that impede understanding, demonstrating minimal control over language. |

# Grade 5 ELA Performance Level Descriptors

Reading

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to be mostly accurate when quoting or referencing, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to be mostly accurate when quoting or referencing, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to be accurate when quoting or referencing, showing full understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to be generally accurate when quoting or referencing, showing general understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to be generally accurate when quoting or referencing, showing general understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to be mostly accurate when quoting or referencing, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to be minimally accurate when quoting or referencing, showing minimal understanding of the text when referring to explicit details and examples in the text.<br>• With moderately complex text, students demonstrate the ability to be generally accurate when quoting or referencing, showing basic understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to be mostly accurate when quoting or referencing, showing understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the inability to be accurate when quoting or referencing, showing limited understanding of the text when referring to explicit details and examples in the text.<br>• With moderately complex text, students demonstrate the ability to be minimally accurate when quoting or referencing, showing minimal understanding of the text when referring to explicit details and examples in the text.<br>• With readily accessible text, students demonstrate the ability to be partially accurate when quoting or referencing, showing partial understanding of the text when referring to explicit details and examples in the text and when explaining inferences drawn from the text. |

Writing - Written Expression

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students address the prompts and provide effective development of ideas, including when drawing evidence from multiple sources, in the majority of instances demonstrating purposeful and controlled organization.<br><br>The student:<br>● Provides effective development of the topic and/or narrative elements, using reasoning, details, and/or description.<br>● Develops topic and/or narrative elements in a manner that is appropriate to the task, purpose, and audience.<br>● Demonstrates coherence, clarity, and cohesion and includes an introduction and/or conclusion.<br>● Attends to the norms and conventions of the discipline.<br>● Effectively draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Effectively uses concrete words and phrases, sensory details, linking and transitional words, and/or domain-specific vocabulary to clarify ideas. | In **writing**, students address the prompts and provide development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating purposeful and mostly controlled organization.<br><br>The student:<br>● Develops the topic and/or narrative elements using reasoning, details, and/or description.<br>● Develops topic and/or narrative elements in a manner that is mostly appropriate to the task, purpose, and audience.<br>● Demonstrates general coherence, clarity, and cohesion and may or may not include an introduction and/or conclusion.<br>● Demonstrates general awareness of the norms and conventions of the discipline.<br>● Draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Uses concrete words and phrases, sensory details, linking and transitional words, and/or domain-specific vocabulary to clarify ideas. | In **writing**, students address the prompts and provide basic development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating organization that sometimes is controlled.<br><br>The student:<br>● Develops the topic and/or narrative elements minimally by using some reasoning, details, and/or description.<br>● Develops topic and/or narrative elements in manner that is general in its appropriateness to the task, purpose, and audience.<br>● Demonstrates some coherence, clarity, and cohesion, omitting the introduction or conclusion.<br>● Demonstrates some awareness of the norms of the discipline.<br>● Draws partial evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes some descriptions, sensory details, linking and transitional words, or domain-specific vocabulary to clarify ideas. | In **writing**, students address the prompts and provide minimal development of ideas, including when drawing evidence from multiple sources, while in the majority of instances demonstrating organization that often is not controlled.<br><br>The student:<br>● Minimal development of the topic and/or narrative elements and is, therefore, inappropriate to the task and purpose.<br>● Demonstrates minimal coherence, clarity, and cohesion.<br>● Demonstrates minimal awareness of the norms of the discipline.<br>● Draws minimal evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes minimal descriptions, sensory details, linking and transitional words, or domain-specific vocabulary, limiting the overall clarity with which ideas are expressed. |

Writing – Knowledge of Language and Conventions

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students demonstrate full command of the conventions of Standard English consistent with edited writing. There may be some errors in grammar and usage, but overall meaning is clear. | In **writing**, students demonstrate command of the conventions of Standard English consistent with edited writing. There are errors in grammar and usage that may occasionally impede understanding. | In **writing**, students demonstrate basic command of the conventions of Standard English consistent with edited writing. There are few patterns of errors in grammar and usage that impede understanding, demonstrating partial control over language. | In **writing**, students demonstrate minimal command of the conventions of Standard English consistent with edited writing. There are patterns of errors in grammar and usage that impede understanding, demonstrating minimal control over language. |

# Grade 6 ELA Performance Level Descriptors

Reading

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text<br>• With moderately complex text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do accurate analyses of the text, showing full understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to do generally accurate analyses of the text, showing general understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to do generally accurate analyses of the text, showing general understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to do minimally accurate analyses of the text, showing minimal understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to do generally accurate analyses of the text, showing basic understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the inability to do an accurate analysis of the text, showing limited understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to do minimally accurate analyses of the text, showing minimal understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do partially accurate analyses of the text, showing partial understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. |

Writing – Written Expression

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing,** students address the prompts and provide effective development of ideas, including when drawing evidence from multiple sources, while demonstrating effective coherence, clarity, and/or cohesion.<br>The student:<br>● Provides effective development of the claim, topic, and/or narrative elements, using clear reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is appropriate to the task, purpose, and audience.<br>● Demonstrates coherence, clarity, and cohesion and includes an introduction, conclusion, and a logical progression of ideas.<br>● Establishes and maintains an effective style, while attending to the norms and conventions of the discipline.<br>● Effectively draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes precise language including descriptive words and phrases, sensory details, linking and transitional words, words to indicate tone, and/or domain-specific vocabulary. | In **writing**, students address the prompts and provide development of ideas, including when drawing evidence from multiple sources, while demonstrating coherence, clarity, and/or cohesion.<br>The student:<br>● Provides development of the claim, topic, and/or narrative elements, using reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is mostly appropriate to the task, purpose, and audience.<br>● Demonstrates general coherence, clarity, and cohesion and includes an introduction, conclusion, and logically grouped ideas.<br>● Establishes and maintains a mostly effective style, while attending to the norms and conventions of the discipline.<br>● Draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes mostly precise language, including descriptive words and phrases, sensory details, linking and transitional words, words to indicate tone, and/or domain-specific vocabulary. | In **writing**, students address the prompts and provide basic development of ideas, including when drawing evidence from multiple sources, while generally demonstrating basic coherence, clarity, and/or cohesion.<br>The student:<br>● Provides some development of the claim, topic, and/or narrative elements, using basic reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is somewhat appropriate to the task, purpose, and audience.<br>● Demonstrates some coherence, clarity, and/or cohesion, making the writer's progression of ideas somewhat unclear.<br>● Employs a style that is generally effective, with basic awareness of the norms of the discipline.<br>● Draws some evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes some descriptions, sensory details, linking or transitional words, words to indicate tone, or domain-specific vocabulary. | In **writing**, students address the prompts and provide minimal development of ideas, including when drawing evidence from multiple sources, while demonstrating minimal coherence, clarity, and/or cohesion.<br>The student:<br>● Provides minimal development of the claim, topic, and/or narrative elements, using minimal reasoning, details, text-based evidence, and/or description.<br>● Minimal development of the claim, topic and/or narrative elements that is minimally appropriate to the task, purpose, and audience.<br>● Demonstrates minimal coherence, clarity, and/or cohesion, making the writer's progression of ideas unclear.<br>● Employs a minimally effective style, and minimal awareness of the norms of the discipline.<br>● Draws minimal evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes minimal descriptions, sensory details, linking or transitional words, words to indicate tone, or domain-specific vocabulary. |

Writing – Knowledge of Language and Conventions

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students demonstrate full command of the conventions of Standard English consistent with edited writing. There may be some errors in grammar and usage, but overall meaning is clear. | In **writing**, students demonstrate command of the conventions of Standard English consistent with edited writing. There are errors in grammar and usage that may occasionally impede understanding. | In **writing**, students demonstrate basic command of the conventions of Standard English consistent with edited writing. There are few patterns of errors in grammar and usage that impede understanding, demonstrating partial control over language. | In **writing**, students demonstrate minimal command of the conventions of Standard English consistent with edited writing. There are patterns of errors in grammar and usage that impede understanding, demonstrating minimal control over language. |

# Grade 7 ELA Performance Level Descriptors

Reading

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With moderately complex text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With readily accessible text, students demonstrate the ability to do accurate analyses of the text, showing full understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the ability to do generally accurate analyses of the text, showing general understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With moderately complex text, students demonstrate the ability to do generally accurate analyses of the text, showing general understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With readily accessible text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the ability to do minimally accurate analyses of the text, showing minimal understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With moderately complex text, students demonstrate the ability to do generally accurate analyses of the text, showing basic understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With readily accessible text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>● With very complex text, students demonstrate the inability to do an accurate analysis of the text, showing limited understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With moderately complex text, students demonstrate the ability to do minimally accurate analyses of the text, showing minimal understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>● With readily accessible text, students demonstrate the ability to do partially accurate analyses of the text, showing partial understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. |

Writing – Written Expression

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students address the prompts and provide effective development of ideas, including when drawing evidence from multiple sources, while demonstrating effective coherence, clarity, and/or cohesion.<br><br>The student:<br>● Provides effective development of the claim, topic, and/or narrative elements, using clear reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is appropriate to the task, purpose, and audience.<br>● Demonstrates coherence, clarity, and cohesion and includes an introduction, conclusion, and a logical progression of ideas.<br>● Establishes and maintains an effective style, while attending to the norms and conventions of the discipline.<br>● Effectively draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes precise language including descriptive words and phrases, sensory details, linking and transitional words, words to indicate tone, and/or domain-specific vocabulary. | In **writing**, students address the prompts and provide development of ideas, including when drawing evidence from multiple sources, while demonstrating coherence, clarity, and/or cohesion.<br><br>The student:<br>● Provides development of the claim, topic, and/or narrative elements, using reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is mostly appropriate to the task, purpose, and audience.<br>● Demonstrates general coherence, clarity, and cohesion and includes an introduction, conclusion, and logically grouped ideas.<br>● Establishes and maintains a mostly effective style, while attending to the norms and conventions of the discipline.<br>● Draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes mostly precise language, including descriptive words and phrases, sensory details, linking and transitional words, words to indicate tone, and/or domain-specific vocabulary. | In **writing**, students address the prompts and provide basic development of ideas, including when drawing evidence from multiple sources, while generally demonstrating basic coherence, clarity, and/or cohesion.<br><br>The student:<br>● Provides some development of the claim, topic, and/or narrative elements, using basic reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is somewhat appropriate to the task, purpose, and audience.<br>● Demonstrates some coherence, clarity, and/or cohesion, making the writer's progression of ideas somewhat unclear.<br>● Employs a style that is generally effective, with basic awareness of the norms of the discipline.<br>● Draws some evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes some descriptions, sensory details, linking or transitional words, words to indicate tone, or domain-specific vocabulary. | In **writing**, students address the prompts and provide minimal development of ideas, including when drawing evidence from multiple sources, while demonstrating minimal coherence, clarity, and/or cohesion.<br><br>The student:<br>● Provides minimal development of the claim, topic, and/or narrative elements, using minimal reasoning, details, text-based evidence, and/or description.<br>● Minimal development of the claim, topic and/or narrative elements that is minimally appropriate to the task, purpose, and audience.<br>● Demonstrates minimal coherence, clarity, and/or cohesion, making the writer's progression of ideas unclear.<br>● Employs a minimally effective style, and minimal awareness of the norms of the discipline.<br>● Draws minimal evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes minimal descriptions, sensory details, linking or transitional words, words to indicate tone, or domain-specific vocabulary. |

Writing – Knowledge of Language and Conventions

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students demonstrate full command of the conventions of Standard English consistent with edited writing. There may be some errors in grammar and usage, but overall meaning is clear. | In **writing**, students demonstrate command of the conventions of Standard English consistent with edited writing. There are errors in grammar and usage that may occasionally impede understanding. | In **writing**, students demonstrate basic command of the conventions of Standard English consistent with edited writing. There are few patterns of errors in grammar and usage that impede understanding, demonstrating partial control over language. | In **writing**, students demonstrate minimal command of the conventions of Standard English consistent with edited writing. There are patterns of errors in grammar and usage that impede understanding, demonstrating minimal control over language |

# Grade 8 ELA Performance Level Descriptors

Reading

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to do mostly accurate analyses of text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do accurate analyses of the text, showing full understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to do generally accurate analyses of the text, showing general understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to do generally accurate analyses of the text, showing general understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the ability to do minimally accurate analyses of the text, showing minimal understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to do generally accurate analyses of the text, showing basic understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do mostly accurate analyses of the text, showing understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. | In **reading**, the pattern exhibited by student responses indicates:<br>• With very complex text, students demonstrate the inability to do an accurate analysis of the text, showing limited understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With moderately complex text, students demonstrate the ability to do minimally accurate analyses of the text, showing minimal understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text.<br>• With readily accessible text, students demonstrate the ability to do partially accurate analyses of the text, showing partial understanding of the text when referring to explicit details and examples in the text and when supporting sound inferences drawn from the text. |

Writing – Written Expression

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students address the prompts and provide effective development of ideas, including when drawing evidence from multiple sources, while demonstrating effective coherence, clarity, and/or cohesion.<br>The student:<br>● Provides effective development of the claim, topic, and/or narrative elements, using clear reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is appropriate to the task, purpose, and audience.<br>● Demonstrates coherence, clarity, and cohesion and includes an introduction, conclusion, and a logical progression of ideas.<br>● Establishes and maintains an effective style, while attending to the norms and conventions of the discipline.<br>● Effectively draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes precise language including descriptive words and phrases, sensory details, linking and transitional words, words to indicate tone, and/or domain-specific vocabulary. | In **writing**, students address the prompts and provide development of ideas, including when drawing evidence from multiple sources, while demonstrating coherence, clarity, and/or cohesion.<br>The student:<br>● Provides development of the claim, topic, and/or narrative elements, using reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is mostly appropriate to the task, purpose, and audience.<br>● Demonstrates general coherence, clarity, and cohesion and includes an introduction, conclusion, and logically grouped ideas.<br>● Establishes and maintains a mostly effective style, while attending to the norms and conventions of the discipline.<br>● Draws evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes mostly precise language, including descriptive words and phrases, sensory details, linking and transitional words, words to indicate tone, and/or domain-specific vocabulary. | In **writing**, students address the prompts and provide basic development of ideas, including when drawing evidence from multiple sources, while generally demonstrating basic coherence, clarity, and/or cohesion.<br>The student:<br>● Provides some development of the claim, topic, and/or narrative elements, using basic reasoning, details, text-based evidence, and/or description.<br>● Develops claim, topic, and/or narrative elements in a manner that is somewhat appropriate to the task, purpose, and audience.<br>● Demonstrates some coherence, clarity, and/or cohesion, making the writer's progression of ideas somewhat unclear.<br>● Employs a style that is generally effective, with basic awareness of the norms of the discipline.<br>● Draws some evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes some descriptions, sensory details, linking or transitional words, words to indicate tone, or domain-specific vocabulary. | In **writing**, students address the prompts and provide minimal development of ideas, including when drawing evidence from multiple sources, while demonstrating minimal coherence, clarity, and/or cohesion.<br>The student:<br>● Provides minimal development of the claim, topic, and/or narrative elements, using minimal reasoning, details, text-based evidence, and/or description.<br>● Minimal development of the claim, topic and/or narrative elements that is minimally appropriate to the task, purpose, and audience.<br>● Demonstrates minimal coherence, clarity, and/or cohesion, making the writer's progression of ideas unclear.<br>● Employs a minimally effective style, and minimal awareness of the norms of the discipline.<br>● Draws minimal evidence from literary or informational texts to support analysis, reflection, and research.<br>● Includes minimal descriptions, sensory details, linking or transitional words, words to indicate tone, or domain-specific vocabulary. |

Writing – Knowledge of Language and Conventions

| Level 5 | Level 4 | Level 3 | Level 2 |
|---|---|---|---|
| A student who achieves at **Level 5 exceeds expectations** for the assessed standards. | A student who achieves at **Level 4 meets expectations** for the assessed standards. | A student who achieves at **Level 3 approaches expectations** for the assessed standards. | A student who achieves at **Level 2 partially meets expectations** for the assessed standards. |
| In **writing**, students demonstrate full command of the conventions of Standard English consistent with edited writing. There may be some errors in grammar and usage, but overall meaning is clear. | In **writing**, students demonstrate command of the conventions of Standard English consistent with edited writing. There are errors in grammar and usage that may occasionally impede understanding. | In **writing**, students demonstrate basic command of the conventions of Standard English consistent with edited writing. There are few patterns of errors in grammar and usage that impede understanding, demonstrating partial control over language. | In **writing**, students demonstrate minimal command of the conventions of Standard English consistent with edited writing. There are patterns of errors in grammar and usage that impede understanding, demonstrating minimal control over language. |

## Grade 3 Mathematics Performance Level Descriptors

| | **Grade 3 Math : Sub-Claim A**<br>The student solves problems involving Major Content for Grade 3 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Products and Quotients**<br>3.OA.1<br>3.OA .2<br>3.OA .4<br>3.OA .6<br>3.OA.7-1<br>3.OA.7-2 | **Understands** and interprets products and quotients of whole numbers.<br><br>Determines the unknown whole number in a multiplication or division problem by relating multiplication and division. **Both factors are greater than 5 and less than or equal 10.**<br><br>**Represents a multiplication or division situation as an equation.**<br><br>Accurately multiplies and divides within 100, using strategies relating multiplication and division or properties of operations. | Interprets products and quotients of whole numbers.<br><br>Determines the unknown whole number in a multiplication or division problem by relating multiplication and division. **One factor** is **greater than or equal** to 5.<br><br>**Accurately** multiplies and divides within 100, using strategies relating multiplication and division or properties of operations. | **Interprets** products and quotients of whole numbers.<br><br>Determines the unknown whole number in a multiplication or division problem by relating multiplication and division, with both factors less than or equal to 5, or with one factor of 10.<br><br>Multiplies and divides within 100, **using strategies relating multiplication and division or properties of operations.** | Determines products and quotients of whole numbers within 100.<br><br>Determines the unknown whole number in a multiplication or division problem by relating multiplication and division, with both factors less than or equal to 5, or with one factor of 10. |
| **Multiplication and Division**<br>3.OA.3-1<br>3.OA.3-2<br>3.OA.3-3<br>3.OA.3-4 | Uses multiplication and division within 100 to solve word problems involving equal groups, arrays, **area, and measurement quantities other than area. Both factors are > 5 and < or = to 10.**<br><br>**Identifies multiple contexts given a numerical expression involving multiplication and division.** | **Uses multiplication and division within 100 to solve word problems** involving equal groups and arrays. **One factor** is **> or =** to 5. | Given a visual aid, uses multiplication and division within 100 to solve word problems involving equal groups **and arrays**, with both factors < or = to 5, or with one factor of 10. | Given a visual aid, uses multiplication and division within 100 to solve word problems involving equal groups. Both factors are < or = to 5, with both factors < or = to 5, or with one factor of 10. |
| **Two-Step Problems**<br>3.OA.8<br>3.Int.1<br>3.Int.2 | Solves two-step **unscaffolded** word problems using the four operations, **including rounding where appropriate**, in which the unknown is in a variety of positions. **Both values** for each operation performed is substantial (towards the upper limits as defined by the standard assessed). | Solves two-step scaffolded word problems using the four operations **in which the unknown is in a variety of positions.** One of the values for each operation performed is substantial (towards the upper limits as defined by the standard assessed). | Solves two-step scaffolded word problems using the four operations and in which the sum, difference, product or quotient is always the unknown. **One of the values for each operation performed is substantial (towards the upper limits as defined by the standard assessed).** | Solves two-step scaffolded word problems using the four operations and in which the sum, difference, product or quotient is always the unknown. |
| **Fraction Equivalence**<br>3.NF.3a-1<br>3.NF.3a-2<br>3.NF.3b-1<br>3.NF-3c<br>3.NF-3d<br>3.NF.A.Int.1 | Understands, recognizes and generates equivalent fractions with denominators of 2, 3, 4, 6 and 8.<br><br>Expresses whole numbers as fractions and recognize fractions that are equivalent to whole numbers. | **Understands, recognizes and generates equivalent fractions using denominators of 2, 4, and 8.**<br><br>Expresses whole numbers as fractions. | Given a visual model, **understands,** recognizes and **generates** equivalent fractions with denominators of 2, 4 and 8.<br><br>Expresses **whole numbers** as fractions. | Given a visual model recognizes equivalent fractions with denominators of 2, 4 and 8.<br><br>Expresses the number 1 as a fraction. |

| | Grade 3 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 3 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | Compares two fractions that have the same numerator or same denominator using symbols to justify conclusions. **Plots the location of equivalent fractions on a number line.** The student must recognize that two fractions must refer to the same whole in order to compare.<br><br>**Given a whole number and two fractions in a real-world situation, plots all three numbers on a number line and determines which fraction is closest to the whole number. Justifies the comparison by plotting points on a number line.** | Compares two fractions that have the same numerator or same denominator using symbols **and justifies conclusions by using a visual model.** The student must recognize that two fractions must refer to the same whole in order to compare. | **Compares two fractions that have the same numerator or same denominator using symbols. The student must recognize that two fractions must refer to the same whole in order to compare.** | |
| **Fractions as Numbers**<br>3.NF.1<br>3.NF.2<br>3.NF.A.Int.1 | Understands 1/*b* is equal to one whole partitioned into *b* equal parts–limiting the denominators to 2, **3**, 4, **6** and 8.<br><br>Represents 1/*b* on a number line diagram by partitioning the number line between 0-1 into *b* equal parts recognizing that *b* is the total number of parts.<br><br>Demonstrates understanding of the quantity *a*/*b* by marking off *a* parts of 1/*b* from 0 on the number line and **states that the endpoint locates the number *a*/*b*.**<br><br>**Applies the concepts of 1/*b* and *a*/*b* in real-world situations.**<br><br>**Describes the number line that best fits the context.** | Understands 1/*b* is equal to one whole partitioned into *b* equal parts–limiting the denominators to 2, 4 and **8**.<br><br>Represents 1/*b* on a number line diagram by partitioning the number line between 0-1 into *b* equal parts recognizing that *b* is the total number of parts.<br><br>**Demonstrates the understanding of the quantity *a*/*b* by marking off *a* parts of 1/*b* from 0 on the number line.** | Understands 1/*b* is equal to one whole partitioned into *b* equal parts–limiting the denominators to 2 and 4.<br><br>**Represents 1/*b* on a number line diagram by partitioning the number line between 0-1 into *b* equal parts recognizing that *b* is the total number of parts.**<br><br>**Represents fractions in the form *a*/*b* using a visual model.** | Understands 1/*b* is equal to one whole partitioned into *b* equal parts–limiting the denominators to 2 and 4.<br><br>Identifies 1/*b* on a number line diagram when partitioned between 0 and 1 into *b* equal parts. |
| **Time**<br>3.MD.1-1<br>3.MD.1-2 | Tells, writes and measures time to the nearest minute.<br><br>Solves **two–step** word problems involving addition **and** subtraction of time intervals in minutes. | Tells, writes and measures time to the nearest minute.<br><br>**Solves one-step word problems involving addition or subtraction of time intervals in minutes.** | Tells, writes and measures time to the nearest minute.<br><br>**Solves one-step word problems involving addition or subtraction of time intervals in minutes, with scaffolding, such as a number line diagram.** | Tells, writes and measures time to the nearest minute. |
| **Volumes and Masses** | Using grams, kilograms or liters, measures, estimates and **solves** | **Using grams, kilograms or liters, measures and estimates** | Using grams, kilograms or liters, measures **and estimates** liquid | Using grams, kilograms or liters, measures liquid volumes and |

| | Grade 3 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 3 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| 3.MD.2-1<br>3.MD.2-2<br>3.MD.2-3<br>3.Int.5 | **multi-step word problems** involving liquid volumes and masses of objects using any of the four basic operations. **Number values should be towards the higher end of the acceptable values for each operation.**<br><br>Uses estimated measurements **to compare answers** to one-step word problems.<br><br>**Evaluates usefulness and accuracy of estimations.** | **liquid volumes and masses of objects using any of the four basic operations.**<br><br>**Uses estimated measurements, when indicated, to answer one-step word problems.** | volumes and masses of objects **using concrete objects** (beakers, measuring cups, scales) **to develop estimates.** | masses of concrete objects (beakers, measuring cups, scales). |
| **Geometric Measurement**<br>3.MD.5<br>3.MD.6<br>3.MD.7b-1<br>3.MD.7d | Recognizes area as an attribute of plane figures.<br><br>Understands area is measured using square units. **Describes a visual model to show understanding that** area that can be found by covering a plane figure without gaps or overlaps by unit squares and counting them.<br><br>**Connects counting squares to multiplication when finding area.**<br><br>Represents the area of a plane figure as "n" square units. | Recognizes area as an attribute of plane figures.<br><br>With a visual model, understands area is measured using square units. Determines area by covering a plane figure without gaps or overlaps by unit squares and counting them.<br><br>**Represents the area of a plane figure as "n" square units.** | Recognizes area as an attribute of plane figures.<br><br>With a visual model, understands area is measured using square units. **Determines area by covering a plane figure without gaps or overlaps by unit squares and counting them.** | Recognizes area as an attribute of plane figures.<br><br>With a visual model, understands area is measured using square units. Determines area by counting unit squares. |

| | Grade 3 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 3 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Multi-Digit Arithmetic**<br>3.NBT.2<br>3.NBT.3 | Accurately adds and subtracts within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.<br><br>Multiplies one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value | **Accurately** adds and subtracts within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.<br><br>Uses repeated addition to multiply one-digit whole numbers by multiples of 10 in the range 10-90 **using strategies based on place value and properties of operations.** | Adds and subtracts within 1000, using strategies and algorithms based on place value, properties of operations with scaffolding, and/or the relationship between addition and subtraction.<br><br>**Uses repeated addition to multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.** | Adds and subtracts within 1000, using strategies and algorithms based on place value, properties of operations with scaffolding, and/or the relationship between addition and subtraction. |

| | Grade 3 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 3 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Scaled Graphs**<br>3.MD.3-1<br>3.MD.3-3<br>3.Int.4 | Completes a scaled picture graph and a scaled bar graph to represent a data set.<br><br>Solves one-and two-step "how many more" and "how many less" problems, **requiring a substantial addition, subtraction or multiplication step,** using information presented in scaled bar graphs. | **Completes a scaled picture graph and a scaled bar graph to represent a data set**.<br><br>Solves one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. | **Completes a scaled picture graph and a scaled bar graph to represent a data set, with scaffolding, such as using a model as a guide.**<br><br>Solves one-step "how many more" and "how many less" problems using information presented in scaled bar graphs. | Identifies a correctly scaled picture graph and a correctly scaled bar graph to represent a data set.<br><br>Solves one-step "how many more" and "how many less" problems using information presented in scaled bar graphs. |
| **Measurement Data**<br>3.MD.4 | Generates measurement data by measuring lengths to the nearest half and **fourth** inch.<br><br>Shows the data by making a line plot, where the horizontal scale is marked in appropriate units of whole numbers, halves **or quarters**.<br><br>**Uses the line plot to answer questions or solve problems.** | Generates measurement data by measuring lengths to the nearest half inch.<br><br>Shows the data by making a line plot, where the horizontal scale is marked in appropriate units of whole numbers or halves. | **Generates measurement data by measuring lengths to the nearest half inch.**<br><br>**Shows the data by making a line plot, where the horizontal scale is marked in appropriate units of whole numbers or halves, with scaffolding.** | Identifies correct measurement from figures with appropriate scale provided. |
| **Understanding Shapes**<br>3.G.1 | Understands the properties of quadrilaterals and the subcategories of quadrilaterals.<br><br>Recognizes **and sorts** examples of quadrilaterals that have shared attributes and **shows** that the shared attributes can define a larger category.<br><br>Draws examples and **non-examples** of quadrilaterals with specific attributes. | **Understands the properties** of quadrilaterals and the subcategories of quadrilaterals.<br><br>Recognizes examples of quadrilaterals that have shared attributes and that the shared attributes can define a larger category.<br><br>**Draws examples of quadrilaterals with specific attributes.** | Identifies examples of quadrilaterals and the subcategories of quadrilaterals.<br><br>**Recognizes examples of quadrilaterals that have shared attributes and that the shared attributes can define a larger category.** | Identifies examples of quadrilaterals and the subcategories of quadrilaterals. |
| **Perimeter and Area**<br>3.G.2<br>3.MD.8<br>3.Int.3 | Solves real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and provides examples of rectangles with **the same perimeter and different areas** or with the same area and different perimeters**.**<br><br>**A substantial addition, subtraction, or multiplication step with number values towards the higher end of the** | Solves mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, **finding an unknown side length**, and **provides examples of** rectangles with the same area and different perimeters. | Solves mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, **and identifying rectangles with the same area and different perimeters.** | Solves mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths. |

| | Grade 3 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 3 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | **acceptable values for each operation**<br><br>Partitions shapes into parts with equal areas and expresses the area as a unit fraction of the whole. | | | |

| | Grade 3 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 3 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Properties of Operations**<br>3.C.1-1<br>3.C.1-2<br>3.C.1-3<br>3.C.2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• a logical/defensible approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• an efficient and logical progression of steps **with appropriate justification**<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols, labels<br>• justification of a conclusion<br>• **determination of whether an argument or conclusion is generalizable**<br>• evaluating, interpreting and critiquing the validity of other's responses, reasonings, and approaches, utilizing mathematical connections (when appropriate). **Provides a counter-example where applicable.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• a logical/**defensible** approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• a logical progression of steps<br>• precision of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluating**, interpreting and critiquing** the validity of other's responses, r**easonings, and approaches, utilizing mathematical connections (when appropriate)**. | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• **evaluating the validity of other's responses, approaches and conclusions.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• an approach based on a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations |

| | Grade 3 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 3 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Concrete Referents and Diagrams**<br>3.C.3-1<br>3.C.3-2<br>3.C.6-1<br>3.C.6-2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response based on operations using concrete referents such as diagrams--including number lines (whether provided in the prompt or constructed by the student) and connecting the diagrams to a written (symbolic) method, which may include:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• an **efficient** and logical progression of steps **with appropriate justification**<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• **determination of whether an argument or conclusion is generalizable**<br>• evaluating, interpreting, and critiquing the validity of other's responses, approaches, and reasoning**, and providing a counter-example where applicable** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-**organized and complete** response based on operations using concrete referents such as diagrams--including number lines (**whether provided in the prompt or constructed by the student**) and connecting the diagrams to a written (symbolic) method, which may include:<br>• a logical approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• a logical progression of steps<br>• **precision of calculation**<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluating, **interpreting, and critiquing** the validity of other's responses, approaches, and **reasoning.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates **a response** based on operations using concrete referents such as diagrams – including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include:<br>• **a logical approach based on a conjecture and/or stated assumptions**<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations.<br>• **evaluating** the validity of other's responses, **approaches and conclusions** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates **an** incomplete response based on operations using concrete referents such as diagrams – including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include:<br>• a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• accepting the validity of other's responses |
| **Distinguish Correct Explanation/ Reasoning from that which is Flawed**<br>3.C.4-1<br>3.C.4-2<br>3.C.4-3<br>3.C.4-4<br>3.C.4-5<br>3.C.4-6<br>3.C.5-1<br>3.C.5-2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response by:<br>• presenting and defending solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately<br>• **evaluating** explanation/reasoning; if | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates **a well-organized** and complete response by:<br>• presenting and **defending** solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response by**:**<br>• presenting solutions to **multi-step** problems in the form of valid chains of reasoning**,** using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response by:<br>• presenting solutions to scaffolded two-step problems in the form of valid chains of reasoning, sometimes using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed |

| | Grade 3 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 3 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| 3.C.4-7 | there is a flaw in the argument<br>• presenting **and defending** corrected reasoning<br>Response may include:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• **an efficient** and logical progression of steps **with appropriate justification**<br>• **precision of calculation** | that which is flawed<br>• identifying and describing the flaw in reasoning or describing errors in solutions to multi-step problems<br>• presenting corrected reasoning<br>Response may include:<br>• a logical approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• **a logical progression of steps**<br>• **precision of calculation** | • identifying and **describing the flaw in reasoning or describing errors in solutions to multi-step problems**<br>• **presenting corrected reasoning**<br>Response may include:<br>• **a logical approach based on a conjecture and/or stated assumptions**<br>• **a logical**, but incomplete, progression of steps<br>• **minor** calculation errors | • identifying an error in reasoning<br>Response may include:<br>• a conjecture based on faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error |
| | • correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating, interpreting, and critiquing the validity of other's responses, approaches and reasoning, and **providing a counter-example where applicable.** | • **correct** use of grade-level vocabulary, symbols and labels<br>• **justification of a conclusion**<br>• evaluating**, interpreting and critiquing** the validity of other's responses, approaches and **reasoning**. | • **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• **evaluating** the validity of other's responses, **approaches and conclusions.** | • limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• accepting the validity of other's responses |

| | Grade 3 Math: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 3 by applying knowledge and skills articulated in the standards for Grade 3 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly and quantitatively, using appropriate tools strategically, looking for the making use of structure, and/or looking for and expressing regularity in repeated reasoning. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Modeling**<br>3.D.1<br>3.D.2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions or making assumptions and using approximations to simplify a real-world situation<br>• **analyzing and/or creating constraints, relationships and goals** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions or **making assumptions and using** approximations to simplify a real-world situation<br>• **mapping relationships** between important quantities by selecting | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by<br>• using stated assumptions and approximations to simplify a real-world situation<br>• **illustrating relationships between important quantities by using provided** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• identifying important quantities by using provided tools to create models<br>• analyzing relationships |

| | **Grade 3 Math: Sub-Claim D**<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 3 by applying knowledge and skills articulated in the standards for Grade 3 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly and quantitatively, using appropriate tools strategically, looking for the making use of structure, and/or looking for and expressing regularity in repeated reasoning. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | • mapping relationships between important quantities by selecting appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• **justifying and defending models which lead to a conclusion**<br>• interpreting mathematical results in the context of the situation<br>• reflecting on whether the results make sense<br>• improving the model if it has not served its purpose<br>• writing a concise arithmetic expression or equation to describe a situation | appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• interpreting mathematical results in the context **of the situation**<br>• reflecting on whether the results make sense<br>• modifying **and/or improving** the model if it has not served its purpose<br>• writing an arithmetic expression or equation to describe a situation | **tools to create models**<br>• analyzing relationships mathematically **between important quantities** to draw conclusions<br>• **interpreting mathematical results in a simplified context**<br>• **reflecting on whether the results make sense**<br>• **modifying the model if it has not served its purpose**<br>• writing an arithmetic expression or equation to describe a situation | mathematically to draw conclusions<br>• writing an arithmetic expression or equation to describe a situation |

## Grade 4 Mathematics Performance Level Descriptors

| | Grade 4 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 4 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Fractions and Decimals**<br>4.NF.1-2<br>4.NF.2-1<br>4.NF.A.Int.1<br>4.NF.5<br>4.NF.6<br>4.NF.7<br>4.NF.Int.1<br>4.NF.Int.2 | Compares decimals to hundredths; uses decimal notations for fractions with denominators 10 or 100. Compares fractions, with like or unlike numerators and denominators, by creating equivalent fractions with common denominators, comparing to a benchmark fraction and **generating equivalent fractions.**<br><br>Recognizes that decimals and fractions must refer to the same whole in order to compare.<br><br>Shows results using symbols.<br><br>**Demonstrates the use of conceptual understanding of fractional equivalence and ordering when solving** simple word problems requiring fraction comparison.<br><br>**Converts a simple fraction to a denominator of 10 or 100 and writes as a decimal (e.g.,1/2 = 5/10 = .5, ¼ = 25/100 = 0.25, 1/20 = 5/100 = 0.05).**<br><br>**Adds fractions with denominators of 10 and 100.** | Given a visual model and/or manipulatives, compares decimals to hundredths: **Expresses a fraction with denominator 10 as an equivalent fraction with denominator 100.**<br>**Uses decimal notation for fractions with denominators 10 or 100.**<br>Compares fractions, with like or unlike numerators and denominators, by **creating equivalent fractions with common denominators** and comparing to a benchmark fraction.<br><br>Recognizes that decimals and fractions must refer to the same whole in order to compare.<br><br>Shows results using symbols.<br><br>**Solves simple word problems requiring fraction comparison**. | Given a visual model and/or manipulatives, compares decimals to hundredths; uses decimal notations for fractions (tenths and hundredths); compares fractions, with like **or unlike numerators and denominators by comparing to a benchmark fraction.**<br><br>**Recognizes that decimals and fractions must refer to the same whole in order to compare.**<br><br>**Shows results using symbols.**<br><br>**Solves simple word problems requiring fraction comparison with scaffolding**. | Given a visual model and/or manipulatives, compares decimals to hundredths; uses decimal notations for fractions (tenths and hundredths); compares fractions with like denominators. |
| **Building Fractions**<br>4.NF.3a<br>4.NF.3b-1<br>4.NF.3c<br>4.NF.3d<br>4.NF.Int.1 | **Understands** and solves mathematical and real-world problems involving the addition and subtraction of fractions and mixed numbers with like denominators by joining and separating parts referring to the same whole, and **justifying the solution by using a visual model.**<br><br>Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation. | Using visual models and/or manipulatives, solves mathematical and **word problems** involving the addition and subtraction of fractions and **mixed numbers** with like denominators by joining and separating parts referring to the same whole.<br><br>Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation. | Using visual models and/or manipulatives, solves mathematical problems involving the addition and subtraction of fractions with like denominators by joining and separating parts referring to the same whole.<br><br>**Decomposes a fraction into a sum of fractions with the same denominator in more than one way and records the decomposition using an equation.** | Using visual models and/or manipulatives, solves mathematical problems involving the addition and subtraction of fractions with like denominators by joining and separating parts referring to the same whole. |

| | Grade 4 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 4 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Multiplying Fractions**<br>4.NF.4a<br>4.NF.4b-1<br>4.NF.4b-2<br>4.NF.4c<br>4.NF.Int.1 | **Describes a visual fraction model** and solves mathematical and real-world problems by recognizing that fraction *a*/*b* is a multiple of 1/*b* and uses that construct to multiply a fraction by a whole number. | Using visual models and/or manipulatives, solves mathematical and **real- world problems** by recognizing that fraction *a*/*b* is a multiple of 1/*b* and uses that construct to multiply a fraction by a whole number. | Using visual models and/or manipulatives, solves mathematical problems by recognizing that fraction *a*/*b* is a multiple of 1/*b* **and uses that construct to multiply a fraction by a whole number.** | Using visual models and/or manipulatives, solves mathematical problems by recognizing that fraction *a*/*b* is a multiple of 1/*b*. |
| **Solving with Multiplication**<br>4.OA.1-1<br>4.OA. 1-2<br>4.OA.2 | Interprets multiplication equations as comparisons and represents statements of multiplicative comparisons as multiplicative equations.<br><br>**Distinguishes multiplicative comparisons.**<br><br>Uses multiplication or division to solve **multi-step** word problems involving multiplicative comparisons.<br><br>Uses a symbol for the unknown number. | Interprets multiplication equations as comparisons or represents statements of multiplicative comparisons as multiplicative equations.<br><br>Uses multiplication or division to solve **one- or two-step word problems** involving multiplicative comparisons. | Interprets multiplication equations as comparisons or represents statements of multiplicative comparisons as multiplicative equations.<br><br>**Uses multiplication or division to solve scaffolded word problems involving multiplicative comparisons.** | Interprets multiplication equations as comparisons or represents statements of multiplicative comparisons as multiplicative equations. |
| **Multi-step Problems**<br>4.OA.3-1<br>4.OA.3-2<br>4.NBT.5-1<br>4.NBT.5-2<br>4.NBT.6-1<br>4.NBT.6-2<br>4.Int.2<br>4.Int.3<br>4.Int.4<br>4.Int.5 | Solves multi-step word problems using the four operations with whole numbers: in multiplying a three- or four-digit by a one-digit number or two two-digit numbers.<br><br>Finds whole number quotients and remainders with up to **four**-digit dividends and one-digit divisors and interprets remainders as appropriate.<br><br>Chooses from a variety of strategies to solve these problems and **selects an appropriate context for the task.** | Solves two-step word and other problems using the four operations with whole numbers: in multiplying a three-digit by a one-digit number or two two-digit numbers<br><br>Finds whole number quotients and remainders with up to three-digit dividends and one-digit divisors and **interprets remainders as appropriate**.<br><br>**Chooses from a variety of strategies to solve these problems.** | Solves one- or two-step **word** problems using the four operations with whole numbers: in multiplying a three-digit by a one-digit number or two two-digit numbers.<br><br>Finds whole number quotients and remainders with up to three-digit dividends and one-digit divisors.<br><br>**Chooses from a variety of strategies to solve these problems. Can only solve two-step problems when scaffolding is provided for each step.** | Solves one-step mathematical problems using the four operations with whole numbers: in multiplying a three-digit by a one-digit number or two two-digit numbers.<br><br>Finds whole number quotients and remainders with up to three-digit dividends and one-digit divisors. |
| **Place Value**<br>4.NBT.1<br>4.NBT.2<br>4.NBT.3<br>4.NBT.Int.1 | In any **multi**-digit whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right.<br><br>Reads, writes and compares multi-digit whole numbers using base-10 numerals, number names in expanded form and | In any **four-digit** whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right.<br><br>Reads, writes and compares **four-digit** whole numbers using base-10 numerals, number names in expanded form and | In any three-digit whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right.<br><br>**Reads, writes and compares three-digit whole numbers using base-10 numerals, number names in expanded** | In any three-digit whole number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right. |

| | Grade 4 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 4 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | inequality symbols (>, <, =), rounds to any place **and chooses appropriate context given a rounded number.**<br><br>**Performs computations by applying conceptual understanding of place value, rather than by applying multi-digit algorithms.** | inequality symbols (>, <, =), and **rounds to any place.** | **form and inequality symbols (>, <, =), and rounds to any place with scaffolding.** | |
| **Addition and Subtraction**<br>4.NBT.4-1<br>4.NBT.4-2<br>4.Int.7<br>4.Int.8 | Solves **multiple**-step word and other problems by adding or subtracting multi-digit whole numbers using the standard algorithm. | Solves **two**-step word problems and other problems by adding and subtracting multi-digit whole numbers using the standard algorithm. | Solves one-step word problems and other problems by adding and subtracting multi-digit whole numbers using the standard algorithm with accuracy. | Solves one-step word problems and other problems by adding and subtracting multi-digit whole numbers using the standard algorithm with limited accuracy. |

| | Grade 4 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 4 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Operations and Factors**<br>4.OA.4-1<br>4.OA.4-2<br>4.OA.4-3<br>4.OA.4-4 | Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100, finds **all** factor pairs and determines multiples of whole numbers.<br><br>Determines whether a whole number in the range 1-100 is prime or composite. | Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100 finds factor pairs or determines multiples of whole numbers.<br><br>Determines whether a whole number in the range 1-100 is prime or composite. | Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100 finds factor pairs or determines multiples of whole numbers.<br><br>**Determines, with scaffolding, whether a whole number in the range 1-100 is prime or composite.** | Recognizes that a whole number is a multiple of each of its factors, and within the range of 1-100 identifies factor pairs or multiples of whole numbers. |
| **Measurement and Conversion**<br>4.MD.1<br>4.MD.2-1<br>4.MD.2-2<br>4.MD.3<br>4.Int.6 | Solves measurement word problems involving whole numbers which include calculation of area and perimeter – including those in which **side lengths are missing** – using all four operations.<br><br>Solves measurement word problems which include calculation of area and perimeter–including those in which **side lengths are missing**– using addition, subtraction, multiplication of simple fractions.<br><br>Records measurement equiv----- | **Solves measurement word problems involving whole numbers which include calculation of area and perimeter – when information about side lengths is provided –** using all four operations.<br><br>Solves measurement word problems **which include calculation of area and perimeter–when information about side lengths is provided–** using addition, subtraction, multiplication of simple fractions.<br><br>Records measurement | Solves mathematical measurement problems involving whole numbers using all four operations**.**<br><br>Solves mathematical measurement problems using addition, subtraction, **and multiplication** of simple fractions.<br><br>**Records measurement equivalents in a two-column table.**<br><br>**Uses knowledge of measurement units within one system to convert from larger units to smaller units.** | Solves mathematical measurement problems involving whole numbers using all four operations**.**<br><br>Solves mathematical measurement problems using addition and subtraction of simple fractions. |

| | Grade 4 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 4 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | -alents in a two-column table.<br><br>Uses knowledge of measurement units within one system to solve word problems, real-world problems, and mathematical problems involving converting from larger units to smaller units.<br><br>Represents measurement quantities using diagrams such as number line diagrams **that require students to provide the appropriate measurement scale given the context.** | equivalents in a two-column table.<br><br>Uses knowledge of measurement units within one system to **solve word problems, real-world problems and mathematical problems** involving converting from larger units to smaller units.<br><br>**Represents measurement quantities using diagrams such as number line diagrams that feature a measurement scale**. | | |
| **Represent and Interpret Data**<br>4.MD.4-1<br>4.MD.4-2 | Makes a line plot to display a data set of measurements in fractions of a unit with like denominators limited to 2, 4 and 8, **(including mixed numbers)** and uses addition and subtraction of fractions to solve problems involving information in the line plots and **evaluates the solution in relation to the data.** | Makes a line plot to display a data set of measurements in fractions of a unit with like denominators of 2 or 4 and **uses addition and subtraction of fractions to solve problems involving information in the line plot.** | **Makes** a line plot to display a data set of measurements in fractions of a unit with like denominators of 2 or 4. | Identifies a correct line plot that displays a data set of measurements in fractions of a unit with like denominators of 2 or 4. |
| **Geometric Measurement**<br>4.MD.5<br>4.MD.6<br>4.MD.7 | Recognizes how angles are formed and that angle measures are additive.<br><br>Understands and applies concepts of angle measurement **recognizing that angles are measured in reference to a circle.**<br><br>Uses a protractor to measure and sketch angles.<br><br>Solves mathematical and real-world problems by composing and decomposing angles**.**<br><br>Solves mathematical and real-world angle problems, **including problems that require the use of equations with a symbol for the unknown angle measure.** | Understands and applies concepts of angle measurement**.**<br><br>Uses a protractor to measure and **sketch angles.**<br><br>**Solves mathematical and real-world problems by composing and decomposing angles.** | Understands and **applies** concepts of angle measurement.<br><br>**Uses a protractor to measure angles.** | Understands and identifies concepts of angle measurement. |
| **Lines, Angles and Shapes**<br>4.G 1 | Draws and identifies points, lines, line segments, rays, angles (right, obtuse and acute), | **Draws** and identifies points, lines, line segments, rays, angles (right, obtuse and | Identifies points, lines, line segments, rays, angles (right, obtuse and acute), | Identifies points, lines, line segments, rays, angles (right, obtuse and acute), |

| | Grade 4 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 4 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| 4.G.2<br>4.G.3 | perpendicular lines, parallel lines, lines of symmetry and right triangles, and use **any of these** to classify **or describe** two-dimensional figures. | acute), perpendicular lines, parallel lines, lines of symmetry and right triangles, and use some of these to classify **two-dimensional figures.** | perpendicular lines, parallel lines, lines of symmetry and right triangles, and **use some of these to classify quadrilaterals and triangles.** | perpendicular lines, parallel lines, lines of symmetry and right triangles. |
| **Generate and Analyze Patterns**<br>4.OA.5 | Generates a number or shape pattern that follows a given rule and identifies apparent features of the pattern that were not explicit in the rule itself **and describes the rule for generating the number or shape pattern.** | Generates a number or shape pattern that follows a given rule and **identifies explicit features of the pattern.** | **Generates** a number or shape pattern that follows a given rule. | Identifies a number or shape pattern that follows a given rule. |

| | Grade 4 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 4 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Properties of Operations**<br>4.C.1-1<br>4.C.1-2<br>4.C.2<br>4.C.3 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete written response based on explanations/reasoning using the:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• a logical/defensible approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• an **efficient** and logical progression of steps **with appropriate justification**<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluation of whether an | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete written response based on explanations/reasoning using the:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• a logical/**defensible** approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• a logical progression of steps<br>• **precision of calculation**<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating**, interpreting and critiquing** the validity of other's responses, | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a written response based on explanations/reasoning using the:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• **evaluating the validity of other's responses, approaches and conclusions.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete written response based on explanations/reasoning using the:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>• identification of arithmetic patterns<br>Response may include:<br>• an approach based on a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations |

| | Grade 4 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 4 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | argument or conclusion is generalizable<br>• evaluating, interpreting and critiquing the validity of other's responses, reasonings, and approaches, utilizing mathematical connections (when appropriate). **Provides a counter-example where applicable.** | **reasonings, and approaches, utilizing mathematical connections (when appropriate).** | | |
| **Concrete Referents and Diagrams**<br>4.C.4-1<br>4.C.4-2<br>4.C.4-3<br>4.C.4-4<br>4.C.4-5<br>4.C.7-1<br>4.C.7-2<br>4.C.7-3<br>4.C.7-4 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response based on operations using concrete referents such as diagrams--including number lines (whether provided in the prompt or constructed by the student) and connecting the diagrams to a written (symbolic) method, which may include:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• an **efficient** and logical progression of steps **with appropriate justification**<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluation of whether an argument or conclusion is generalizable<br>• evaluating, interpreting, and critiquing the validity of other's responses, approaches, and reasoning, and **providing a counter-example where applicable.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-**organized** and complete response based on operations using concrete referents such as diagrams--including number lines (**whether provided in the prompt or constructed by the student**) and connecting the diagrams to a written (symbolic) method, which may include:<br>• a logical approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• a logical progression of steps<br>• **precision of calculation**<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **justification of a conclusion**<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating, **interpreting, and critiquing** the validity of other's responses, approaches, and **reasoning.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates **a complete response** based on operations using concrete referents such as diagrams--including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include:<br>• **a logical approach based on a conjecture and/or stated assumptions**<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations.<br>• **evaluating** the validity of other's responses, **approaches and conclusions** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates **an incomplete** response based on operations using concrete referents such as diagrams – including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include:<br>• a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• accepting the validity of other's responses. |
| **Distinguish** | In connection with the content | In connection with the content | In connection with the content | In connection with the content |

| | **Grade 4 Math: Sub-Claim C**<br>In connection with content, the student expresses Grade 4 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Correct Explanation/ Reasoning from that which is Flawed**<br>4.C.5-1<br>4.C.5-2<br>4.C.5-3<br>4.C.5-4<br>4.C.5-5<br>4.C.5-6<br>4.C.6-1<br>4.C.6-2<br>4.C.6-3 | knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response by:<br>• presenting and defending solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately<br>• **evaluating** explanation/reasoning; if there is a flaw in the argument<br>• presenting **and defending** corrected reasoning<br>Response may include:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• **an efficient** and logical progression of steps **with appropriate justification**<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluation of whether an argument or conclusion is generalizable<br>• evaluating, interpreting and critiquing the validity of other's responses, approaches and reasoning, and **providing a counter-example where applicable.** | knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates **a well-organized** and complete response by:<br>• presenting and **defending** solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed<br>• identifying and describing the flaw in reasoning or describing errors in solutions to multi-step problems<br>• presenting corrected reasoning<br>Response may include:<br>• a logical approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• **a logical progression of steps**<br>• **precision of calculation**<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **justification of a conclusion**<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating**, interpreting and critiquing** the validity of other's responses, approaches and **reasoning**. | knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response by**:**<br>• presenting solutions to **multi-step** problems in the form of valid chains of reasoning**,** using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed<br>• identifying and **describing the flaw in reasoning or describing errors in solutions to multi-step problems**<br>• **presenting corrected reasoning**<br>Response may include:<br>• **a logical approach based on a conjecture and/or stated assumptions**<br>• **a logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• **evaluating** the validity of other's responses, **approaches and conclusions.** | knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response by:<br>• presenting solutions to scaffolded two-step problems in the form of valid chains of reasoning, sometimes using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed<br>• identifying an error in reasoning<br>Response may include:<br>• a conjecture based on faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• accepting the validity of other's responses. |

| | Grade 4 Math: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 4 by applying knowledge and skills articulated in the standards for Grade 4 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly and quantitatively, using appropriate tools strategically, looking for the making use of structure, and/or looking for and expressing regularity in repeated reasoning. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Modeling**<br>4.D.1<br>4.D.2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions or making assumptions and using approximations to simplify a real-world situation<br>• **analyzing and/or creating constraints, relationships and goals**<br>• mapping relationships between important quantities by selecting appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• **justifying and defending models which lead to a conclusion**<br>• interpreting mathematical results in the context of the situation<br>• reflecting on whether the results make sense<br>• improving the model if it has not served its purpose<br>• writing **a concise** arithmetic expression or equation to describe a situation | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions or **making assumptions** and using approximations to simplify a real-world situation<br>• **mapping relationships between important quantities by selecting appropriate tools to create models**<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• interpreting mathematical results in the context **of the** situation<br>• reflecting on whether the results make sense<br>• modifying **and/or improving** the model if it has not served its purpose<br>• writing an arithmetic expression or equation to describe a situation | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• **illustrating relationships between important quantities by using provided tools to create models**<br>• analyzing relationships mathematically **between important quantities** to draw conclusions<br>• **interpreting mathematical results in a simplified context reflecting on whether the results make sense**<br>• **modifying the model if it has not served its purpose**<br>• writing an arithmetic expression or equation to describe a situation | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• identifying important quantities<br>• using provided tools to create models<br>• analyzing relationships mathematically to draw conclusions<br>• writing an arithmetic expression or equation to describe a situation |

## Grade 5 Mathematics Performance Level Descriptors

| | **Grade 5 Math : Sub-Claim A**<br>The student solves problems involving Major Content for Grade 5 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Addition and Subtraction Operations with Decimals**<br>5.NBT.7-1<br>5.NBT.7-2 | Adds or subtracts two decimals to hundredths using concrete models, drawings or strategies based on place value, properties of operations and/or the relationship between addition and subtraction.<br><br>**Applies this concept to a real-world context**, and relates the strategy to a written method and explain the reasoning used. | **Adds or subtracts two decimals to hundredths using concrete models, drawings or strategies based on place value**, properties of operations and/or the relationship between addition and subtraction. | Adds or subtracts (without regrouping) two decimals to hundredths using concrete models, drawings or strategies based on place value and/or the relationship between addition and subtraction. | Adds or subtracts (without regrouping) two decimals to hundredths **(both decimals presented with the same number of decimal places)** using concrete models, drawings or strategies based on place value and/or the relationship between addition and subtraction. |
| **Adding and Subtracting in Context with Fractions**<br>5.NF.2-1<br>5.NF.2-2<br>5.NF.A.Int.1 | **Describes a model to represent** word problems involving addition and subtraction of fractions and mixed numbers referring to the same whole in cases of unlike denominators by using visual fraction models or equations.<br><br>**Assesses and justifies reasonableness using benchmark fractions and number sense of fractions**. | Solves word problems involving addition and subtraction of fractions and mixed numbers referring to the same whole **in cases of unlike denominators** by using visual fraction models or equations. | Solves word problems involving addition and subtraction of fractions **and mixed numbers** using only denominators of 2, 4, 5 or 10 **or benchmark fractions with unlike denominators, referring to the same whole by using visual fraction models or equations.** | Solves word problems involving addition and subtraction of fractions using only denominators of 2, 4, 5 or 10. |
| **Fractions with Unlike Denominators**<br>5.NF.1-1<br>5.NF.1-2<br>5.NF.1-3<br>5.NF.1-4<br>5.NF.1-5 | Adds and subtracts **three or more** fractions and adds and subtracts two mixed numbers with unlike denominators in such a way as to produce an equivalent sum or difference with like denominators. | Adds and subtracts two fractions or mixed numbers with unlike denominators **in such a way as to produce an equivalent sum or difference with like denominators.** | Adds or subtracts two fractions or **mixed numbers** with unlike denominators using only fractions with denominators of 2, 4, 5 or 10 in such a way as to produce an equivalent sum or difference with like denominators.*<br>*below grade level. | Adds or subtracts two fractions with unlike denominators using only fractions with denominators of 2, 4, 5 or 10 in such a way as to produce an equivalent sum or difference with like denominators.*<br>*below grade level. |
| **Multiplication and Division Operations with Decimals**<br>5.NBT.7-3<br>5.NBT.7-4<br>5.NBT.Int.1 | Multiplies tenths by tenths or tenths by hundredths and divides in problems involving tenths and/or hundredths using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction.<br><br>**Performs exact and approximate multiplications and divisions by mentally applying place value strategies when appropriate.** | Multiplies tenths by tenths **or tenths by hundredths** and divides in problems involving tenths **and/or hundredths** using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction.<br><br>**Relates the strategy to a written method.** | Multiplies tenths by tenths **and divides** in problems involving tenths using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction. | Multiplies tenths by tenths in problems involving tenths using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction. |

| | Grade 5 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 5 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | Relates the strategy to a written method. | | | |
| **Multiply with Whole Numbers**<br>5.NBT.5<br>5.Int.1<br>5.Int.2 | Solves two-step **unscaffolded** word problems involving multiplication and multiplies **four**-digit by **two-digit** whole numbers **using the standard algorithm.**<br><br>**Performs exact and approximate multiplications and divisions by mentally applying place value strategies when appropriate.**<br><br>Accurately multiplies multi-digit whole numbers using the standard algorithm **and assesses reasonableness of the product.** | Solves two-step scaffolded word problems involving multiplication **of a three-digit by a one-digit whole number.**<br><br>**Accurately** multiplies multi-digit whole numbers using the standard algorithm. | Solves one-step word problems involving multiplication **of a three-digit by a one-digit whole number**.<br><br>**Multiplies multi-digit whole numbers using the standard algorithm with limited accuracy.** | Solves one-step word problems involving multiplication. |
| **Quotients and Dividends**<br>5.NBT.6 | Divides whole numbers up to four-digit dividends and **two-digit** divisors using strategies based on place value, the properties of operations and/or the relationship between multiplication and division.<br><br>**Illustrates and explains the calculations by using equations, rectangular arrays, and area models.**<br><br>**Checks reasonableness of answers by using multiplication or estimation.** | Divides whole numbers up to **four-digit** dividends and one-digit divisors which are multiples of ten using strategies based on place value, the properties of operations and/or the relationship between multiplication and division. | **Divides** whole numbers up to three-digit dividends and one-digit divisors which are multiples of ten **using strategies based on place value, the properties of operations and/or the relationship between multiplication and division.** | Correctly identifies the quotient of whole numbers up to three-digit dividends and one-digit divisors which are multiples of ten. |
| **Multiplying and Dividing with Fractions**<br>5.NF.4a-1<br>5.NF.4a-2<br>5.NF.4b-1<br>5.NF.6-1<br>5.NF.6-2<br>5.NF.7a<br>5.NF.7b<br>5.NF.7c | **Describes a model to represent and/**or solve real-world problem**s,** by multiplying a mixed number by a fraction, a fraction by a fraction and a whole number by a fraction; dividing a fraction by a whole number and a whole number by a fraction using visual fraction models and creating context for the mathematics **and equations**, including rectangular areas; and interpreting the product and/or quotient. | Multiplies a fraction or a whole number by a fraction and divides a fraction by a whole number – or whole number by a fraction – using visual fraction models and **creating context for the mathematics, including rectangular areas.** | Multiplies a fraction or a whole number by a fraction **and divide a fraction by a whole number or whole number by a fraction** using visual fraction models. | Multiplies a fraction or a whole number by a fraction using visual fraction models. |

| | Grade 5 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 5 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Interpreting Fractions**<br>5.NF.3-1<br>5.NF.3-2 | Solves word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.<br><br>Interprets the fraction as division of the numerator by the denominator.<br><br>**Identifies a simple model representing the** situation**.**<br><br>**Describes a model to represent the situation.** | Solves word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.<br><br>**Interprets the fraction as division of the numerator by the denominator.** | Solves word problems involving division of whole numbers leading to answers in the form of fractions **or mixed numbers** by using manipulatives or visual models to identify between which two whole numbers the answer lies. | Solves word problems involving division of whole numbers leading to answers in the form of fractions by using manipulatives or visual models to identify between which two whole numbers the answer lies. |
| **Recognizing Volume**<br>5.MD.3<br>5.MD.4 | Recognizes volume as an attribute of solid figures and understands volume is measured using cubic units and can be found by packing a solid figure with unit cubes and counting them.<br><br>**Represents the volume of a solid figure as "n" cubic units. Writes an equation that illustrates the unit cube pattern.** | Recognizes volume as an attribute of solid figures and understands volume is measured using cubic units and can be found by packing a solid figure with unit cubes and counting them. | Recognizes volume as an attribute of solid figures **and with a visual model understands that volume is measured using cubic units and can be found by packing a solid figure with unit cubes and counting them.** | Recognizes volume as an attribute of solid figures. |
| **Finding Volume**<br>5.MD.5b<br>5.MD.5c | Solves real-world and mathematical problems by applying the formulas for volume, relating volume to the operations of multiplication and addition, and recognizing volume is additive by finding the volume of solid figures of two **or more** non-overlapping parts. | Given a visual model, solves real-world and mathematical problems by applying the formulas for volume, **relating volume to the operations of multiplication and addition, and recognizing volume is additive by finding the volume of solid figures of two non-overlapping parts.** | Given a visual model **and the formulas for finding volume, solves real-world and mathematical problems by applying the formulas for volume ($V = l \times w \times h$ and $V = B \times h$).** | Given a visual model, solves volume problems by counting unit cubes. |
| **Read, Write and Compare Decimals**<br>5.NBT.3a<br>5.NBT.3b<br>5.NBT.4 | Reads, writes and compares decimals **to any place** using numerals, number names, expanded form and symbols (>, <, =); rounds to any place and **chooses appropriate context given a rounded number.** | Reads, writes and compares decimals to the **hundredths** using numerals, number names, expanded form and symbols (>, <, =), and **rounds to any place.** | **Reads, writes and compares** decimals to the hundredths using numerals, number names, expanded form and symbols (>, <, =), **and rounds to any place with scaffolding**. | Identifies the correct comparison of decimals to the hundredths using numerals, number names, expanded form and symbols (>, <, =). |
| **Place Value**<br>5.NBT.1<br>5.NBT.2-2<br>5.NBT.A.Int.1 | In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left and uses whole number exponents to denote powers of 10 and **uses symbols to** | In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right or 1/10 of what it represents in the place to its left and **uses whole number exponents to denote powers of 10.** | In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right or **1/10 of what it represents in the place to its left** by using manipulatives or visual models. | In any multi-digit number, recognizes a digit in one place represents 10 times as much as it represents in the place to its right by using manipulatives or visual models. |

| | Grade 5 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 5 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | **compare two powers of 10 expressed exponentially (compare $10^2$ to $10^5$).** | | | |
| **Multiplication Scaling**<br>5.NF.5a | Interprets multiplication scaling by comparing the size of the product to the size of one factor on the basis of the size of the second factor without performing the indicated multiplication, **focusing on one factor being a fraction greater than or less than one.** | Interprets multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor without performing the indicated multiplication **where one factor is a fraction less than one.** | **Interprets** multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor by performing the indicated multiplication where one factor is a fraction less than one using manipulatives or visual models. | Identifies multiplication scaling by comparing the size of a product to the size of one factor on the basis of the size of the second factor by performing the indicated multiplication where one factor is a fraction less than one using manipulatives or visual models. |
| **Write and Interpret Numerical Expressions**<br>5.OA.1<br>5.OA.2-1<br>5.OA.2-2 | Uses parentheses, brackets, or braces **with no greater depth than two,** to write and **evaluate** numerical expressions.<br><br>**Interprets numerical expressions without evaluating them.** | Uses parentheses, brackets, or braces to **write numerical expressions.**<br><br>Interprets simple numerical expressions without evaluating them. | Uses parentheses, **brackets, or braces** to write simple numerical expressions. | Uses parentheses to write simple numerical expressions. |

| | Grade 5 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 5 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Graphing on the Coordinate Plane**<br>5.G.1<br>5.G.2<br>5.OA.3 | Represents real-world and mathematical problems by locating and graphing points in the first quadrant of a coordinate plane and interprets coordinate values of points in the context of the situation**.** | Represents real-world and mathematical problems by locating **and** graphing points in the first quadrant of a coordinate plane. | Represents real-world and mathematical problems by locating **or graphing** points in the first quadrant of a coordinate plane. | Represents real-world mathematical problems by locating points in the first quadrant of a coordinate plane. |
| **Two-Dimensional Figures**<br>5.G.3<br>5.G.4 | Classifies two-dimensional figures in a hierarchy based on properties.<br><br>Understands that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.<br><br>**Uses appropriate tools to determine similarities and differences between categories and subcategories.** | Classifies two-dimensional figures in a **hierarchy** based on properties.<br><br>Understands that shared attributes categorize two-dimensional figures. | **Classifies** two-dimensional figures based on properties.<br><br>**Understands that shared attributes categorize two-dimensional figures.** | Identifies two-dimensional figures based on properties. |
| **Conversions**<br>5.MD.1-1<br>5.MD.1-2 | Converts among different-sized standard measurement units within a given measurement system and uses these conversions to solve real-world, **multi-step** problems. | Converts among different-sized standard measurement units within a given measurement system **and uses these conversions to solve real-world**, single-step problems. | **Converts** among different-sized standard measurement units within a given measurement system **and solves single-step problems by using manipulatives or visual models.** | Identifies the correct conversion among different-sized standard units within a given measurement system. |

| | Grade 5 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 5 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | **Chooses the appropriate measurement unit based on the given context.** | | | |
| **Data Displays**<br>5.MD.2-2 | Uses operations on fractions with denominators of 2, 4, and 8 to solve problems involving information in line plots and **interprets the solution in relation to the data.** | Uses operations on fractions with denominators of 2 and 4 to solve problems involving information in line plots. | Uses operations on fractions with like denominators of 2 **and 4** to solve problems involving information in line plots. | Uses operations on fractions with like denominators of 2 to solve problems involving information in line plots. |

| | Grade 5 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 5 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Properties of Operations**<br>5.C.1-1<br>5.C.1-2<br>5.C.1-3<br>5.C.2-1<br>5.C.2-2<br>5.C.2-3<br>5.C.2-4 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a well-organized and complete written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>Response may include:<br>• a logical/defensible approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• an **efficient** and logical progression of steps with appropriate justification<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluation of whether an argument or conclusion is generalizable<br>• evaluating, interpreting and critiquing the validity of other's responses, reasonings, and approaches, utilizing mathematical | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **well-organized** and complete written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>Response may include:<br>• a logical/**defensible** approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• a logical progression of steps<br>• **precision of calculation**<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **justification of a conclusion**<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating, **interpreting and critiquing** the validity of other's responses, **reasonings, and approaches, utilizing mathematical connections (when appropriate).** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a complete written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>Response may include:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a logical, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• **evaluating the validity of other's responses, approaches and conclusions.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an **incomplete** written response based on explanations/reasoning using:<br>• properties of operations<br>• relationship between addition and subtraction<br>• relationship between multiplication and division<br>Response may include:<br>• an approach based on a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations |

| | Grade 5 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 5 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | connections (when appropriate). **Provides a counter-example where applicable.** | | | |
| **Place Value**<br>5.C.3 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response based on place value system including:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• an efficient and logical progression of steps with appropriate justification<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluation of whether an argument or conclusion is generalizable<br>• evaluating, interpreting and critiquing the validity of other's responses, approaches and reasoning, and **providing a counter-example where applicable.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates a **well-organized** and complete response based on place value system including:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• a logical progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• **justification of a conclusion**<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating**,** interpreting and critiquing the validity of other's responses, approaches and reasoning. | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete response** based on place value system including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical, but incomplete, progression of steps<br>• minor calculation errors<br>• some use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• **evaluating the validity of other's responses, approaches and conclusions.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on place value system which may include:<br>• an approach based on a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations |
| **Concrete Referents and Diagrams**<br>5.C.4-1<br>5.C.4-2<br>5.C.4-3<br>5.C.4-4<br>5.C.5-1<br>5.C.5-2<br>5.C.5-3<br>5.C.6 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response based on operations using concrete referents such as diagrams--including number lines (whether provided in the prompt or constructed by the student) and connecting the diagrams to a written (symbolic) method, which may include:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates a **well-organized a**nd complete response based on operations using concrete referents such as diagrams--including number lines (**whether provided in the prompt or constructed by the student**) and connecting the diagrams to a written (symbolic) method, which may include:<br>• a logical approach based on a conjecture and/or stated assumptions, **utilizing** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates **a complete response** based on operations using concrete referents such as diagrams--including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include:<br>• **a logical approach based on a conjecture and/or stated assumptions**<br>• a **logical**, but incomplete, progression of steps | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on operations using concrete referents such as diagrams – including number lines (provided in the prompt) – connecting the diagrams to a written (symbolic) method, which may include:<br>• a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error |

| | Grade 5 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 5 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | mathematical connections (when appropriate)<br>• an **efficient** and logical progression of steps **with appropriate justification**<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• justification of a conclusion<br>• evaluation of whether an argument or conclusion is generalizable<br>• evaluating, interpreting, and critiquing the validity of other's responses, approaches, and reasoning, and **providing a counterexample where applicable** | **mathematical connections (when appropriate)**<br>• a logical progression of steps<br>• **precision of calculation**<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **justification of a conclusion**<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating, **interpreting, and critiquing** the validity of other's responses, approaches, and **reasoning.** | • **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations.<br>• **evaluating** the validity of other's responses, **approaches and conclusions.** | • limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• accepting the validity of other's responses |
| **Distinguish Correct Explanation/ Reasoning from that which is Flawed**<br>5.C.7-1<br>5.C.7-2<br>5.C.7-3<br>5.C.7-4<br>5.C.8-2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a well-organized and complete response by:<br>• analyzing and defending solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately<br>• **evaluating** explanation/ reasoning if there is a flaw in the argument<br>• presenting **and defending** corrected reasoning<br>Response may include:<br>• a logical approach based on a conjecture and/or stated assumptions, utilizing mathematical connections (when appropriate)<br>• **an efficient** and logical progression of steps **with appropriate justification**<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates **a well-organized** and complete response by:<br>• analyzing and **defending** solutions to multi-step problems in the form of valid chains of reasoning, using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed<br>• identifying and describing the flaw in reasoning or describing errors in solutions to multi-step problems<br>• presenting corrected reasoning<br>Response may include:<br>• a logical approach based on a conjecture and/or stated assumptions, **utilizing mathematical connections (when appropriate)**<br>• **a logical progression of steps**<br>• **precision of calculation**<br>• **correct** use of grade-level | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response by**:**<br>• analyzing solutions to **multi-step** problems in the form of valid chains of reasoning**,** using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed<br>• identifying and **describing the flaw in reasoning or describing errors in solutions to multi-step problems**<br>• **presenting corrected reasoning**<br>Response may include:<br>• **a logical approach based on a conjecture and/or stated assumptions**<br>• **a logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response by:<br>• analyzing solutions to scaffolded two-step problems in the form of valid chains of reasoning, sometimes using symbols such as equal signs appropriately<br>• distinguishing correct explanation/reasoning from that which is flawed<br>• identifying an error in reasoning<br>Response may include:<br>• a conjecture based on faulty assumptions<br>• an incomplete or illogical progression of steps<br>• an intrusive calculation error<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion based on own calculations<br>• accepting the validity of other's responses |

| | Grade 5 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 5 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | • justification of a conclusion<br>• evaluation of whether an argument or conclusion is generalizable<br>• evaluating, interpreting and critiquing the validity of other's responses, approaches and reasoning, and **providing a counter-example where applicable** | vocabulary, symbols and labels<br>• **justification of a conclusion**<br>• **evaluation of whether an argument or conclusion is generalizable**<br>• evaluating**, interpreting and critiquing** the validity of other's responses, approaches and **reasoning** | • partial justification of a conclusion based on own calculations<br>• **evaluating** the validity of other's responses, **approaches and conclusions.** | |

| | Grade 5 Math: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 5 by applying knowledge and skills articulated in the standards for Grade 5 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for the making use of structure and/or looking for and expressing regularity in repeated reasoning. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Modeling**<br>5.D.1<br>5.D.2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions or making assumptions and using approximations to simplify a real-world situation<br>• analyzing and/or creating constraints, relationships and goals<br>• mapping relationships between important quantities by selecting appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• justifying and defending models which lead to a conclusion<br>• interpreting mathematical results in the context of the situation<br>• reflecting on whether the results make sense | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions or **making assumptions** and using approximations to simplify a real-world situation<br>• mapping relationships between important quantities by selecting appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• interpreting mathematical results in the context of the situation<br>• reflecting on whether the results make sense<br>• modifying and/or improving the model if it has not served its purpose<br>• writing an arithmetic expression or equation to describe a situation | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• illustrating relationships between important quantities by using provided tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• interpreting mathematical results in a simplified context<br>• reflecting on whether the results make sense<br>• modifying the model if it has not served its purpose<br>• writing an arithmetic expression or equation to describe a situation | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan and applies mathematics to solve multi-step, real-world contextual word problems by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• identifying important quantities<br>• using provided tools to create models<br>• analyzing relationships mathematically to draw conclusions<br>• writing an arithmetic expression or equation to describe a situation |

| | Grade 5 Math: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 5 by applying knowledge and skills articulated in the standards for Grade 5 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for the making use of structure and/or looking for and expressing regularity in repeated reasoning. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | • improving the model if it has not served its purpose<br>• writing **a concise** arithmetic expression or equation to describe a situation | | | |

## Grade 6 Mathematics Performance Level Descriptors

| | **Grade 6 Math : Sub-Claim A**<br>The student solves problems involving Major Content for Grade 6 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **evel 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Multiplying and Dividing with Fractions**<br>6.NS.1-2 | Solves word problems involving **division of fractions by fractions.** | Divides fractions **with unlike denominators** and solves word problems with prompting embedded within the problem. | Divides fractions with common denominators **and solves word problems with prompting embedded within the problem.** | Divides fractions with common denominators. |
| **Ratios**<br>6.RP.1<br>6.RP.2<br>6.RP.3a<br>6.RP.3b<br>6.RP.3c-1<br>6.RP.3c-2<br>6.RP.3d | Uses ratio and rate reasoning to solve real-world and mathematical problems, including ratio, unit rate, percent and unit conversion problems.<br><br>Uses **and connects a variety of representations** and strategies to solve these problems.<br><br>Finds missing values in tables and plots values on the coordinate plane. | Uses ratio and rate reasoning to solve **real-world** and mathematical problems, including ratio, unit rate, percent and unit conversion problems using a limited variety of representations and strategies.<br><br>Finds missing values in tables and locates **and** plots values on the coordinate plane. | **Uses ratio and rate reasoning** to solve mathematical problems, including ratio, unit rate, percent and unit conversion problems using a limited variety of representations and strategies.<br><br>**Finds missing values in tables and locates or plots values on the coordinate plane.** | Solves problems including ratio, unit rate, percent and unit conversion problems using a limited variety of representations and strategies. |
| **Rational Numbers**<br>6.NS.5<br>6.NS.6a<br>6.NS.6b-1<br>6.NS.6b-2<br>6.NS.6c-1<br>6.NS.6c-2<br>6.NS.7a<br>6.NS.7b<br>6.NS.7c-1<br>6.NS.7c-2<br>6.NS.7d<br>6.NS.8 | Understands that positive and negative numbers describe mathematical or real-world quantities which have opposite values or directions and can be represented on a number line and compared with or without the use of a number line.<br><br>Understands **and interprets** the absolute value of a rational number.<br><br>Plots ordered pairs on a coordinate plane to solve real-world and mathematical problems.<br><br>Understands **(or recognizes) that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.**<br><br>**Distinguishes comparisons of absolute value from statements about order.** | Understands that positive and negative numbers describe mathematical or real-world quantities which have opposite values or directions and can be represented on a number line **and compared with or without the use of a number line.**<br><br>**Understands** the absolute value of a rational number.<br><br>Plots ordered pairs on a coordinate plane to solve **real-world and** mathematical problems. | Understands that positive and negative numbers describe mathematical or real-world quantities which have opposite values or directions and can be represented on a number line.<br><br>Determines the absolute value of a rational number.<br><br>**Locates or plots ordered pairs on a coordinate plane to solve mathematical problems.** | Understands that positive and negative numbers describe mathematical or real-world quantities which have opposite values or directions and can be represented on a number line.<br><br>Determines the absolute value of a rational number. |
| **Expressions and** | **Writes,** reads and evaluates numerical and algebraic | Reads and **evaluates** numerical and algebraic expressions, | **Reads numerical and algebraic expressions including those** | |

| | Grade 6 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 6 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **evel 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Inequalities**<br>6.EE.1-1<br>6.EE.1-2<br>6.EE.2a<br>6.EE.2b<br>6.EE.2c-1<br>6.EE.2c-2<br>6.EE.4 | expressions, including those that contain whole number exponents.<br><br>Identifies parts of algebraic and numerical expressions using mathematical terms **and views one or more parts of an expression as a single entity**.<br><br>Identifies equivalent expressions using properties of operations. | including those that contain whole number exponents.<br><br>**Writes numerical expressions and some algebraic expressions, including those that contain whole number exponents.**<br><br>Identifies parts of algebraic and numerical expressions using mathematical terms.<br><br>**Identifies equivalent expressions using properties of operations.** | **that contain whole number exponents**.<br><br>Identifies parts of algebraic **and** numerical expressions using mathematical terms. | Identifies parts of an algebraic or numerical expression using mathematical terms. |
| **Equations and Inequalities**<br>6.EE.5-1<br>6.EE.5-2<br>6.EE.6<br>6.EE.7<br>6.EE.8<br>6.EE.9 | Uses variables to represent numbers and writes expressions and single-step equations to solve real-world and mathematical problems **and understand their solutions.**<br><br>**Expresses a relationship between dependent and independent variables** and relates tables and graphs to equations.<br><br>Writes and graphs inequalities to represent a constraint or condition in a real-world or mathematical problem.<br><br>**Understands that there are an infinite number of solutions for an inequality.** | Uses variables to represent numbers and writes expressions and single-step equations to solve **real-world** or mathematical problems.<br><br>Relates tables and graphs to the equations.<br><br>**Writes** and graphs inequalities to represent a constraint or condition in a **real-world** or mathematical problem. | Uses variables to represent numbers and writes expressions without exponents, and single-step equations to solve mathematical problems.<br><br>**Relates tables and graphs to the equations.**<br><br>**Graphs inequalities to represent a constraint or condition in a mathematical problem.** | Uses variables to represent numbers and writes expressions without exponents, and single-step equations to solve mathematical problems |

| | Grade 6 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 6 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **evel 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Factors and Multiples**<br>6.NS.4-1<br>6.NS.4-2 | Finds greatest common factors and least common multiples. Uses the distributive property to **express** a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. | Finds greatest common factors and least common multiples. **Uses the distributive property to rewrite a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.** | Identifies greatest common factors **and** least common multiples. | Identifies greatest common factors or least common multiples. |

| | **Grade 6 Math: Sub-Claim B**<br>The student solves problems involving Additional and Supporting Content for Grade 6 with connections to the Standards for Mathematical Practice. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Geometry**<br>6.G.1<br>6.G.2-1<br>6.G.2-2<br>6.G.3<br>6.G.4 | Solves real-world and mathematical problems involving area of polygons by composing into rectangles or decomposing into triangles and other shapes.<br><br>Determines measurements of polygons in the coordinate plane.<br><br>Determines and uses nets of three-dimensional figures to find surface area.<br><br>Determines volume of right rectangular prisms with fractional edge lengths by packing them with unit cubes and using formulas.<br><br>**Uses volume formulas to find unknown measurements.**<br><br>**Understands the concepts of area and volume to solve unscaffolded problems.** | Solves **real-world** and mathematical problems involving area of polygons by either composing into rectangles or decomposing into triangles and other shapes.<br><br>Determines measurements of polygons in the coordinate plane.<br><br>**Determines** and uses nets of three-dimensional figures to find surface area.<br><br>Determines volume of right rectangular prisms with fractional edge lengths by packing them with unit cubes and using formulas. | Solves mathematical problems involving area of polygons by either composing into rectangles **or decomposing into triangles and other shapes.**<br><br>**Determines measurements of polygons in the coordinate plane.**<br><br>**Uses nets of three-dimensional figures to find surface area.**<br><br>**Determines volume of right rectangular prisms with fractional edge lengths by packing them with unit cubes and using formulas.** | Solves mathematical problems involving area of polygons by composing into rectangles. |
| **Statistics and Probability**<br>6.SP.1<br>6.SP.2<br>6.SP.3<br>6.SP.4<br>6.SP.5 | Recognizes a statistical question and understands that a set of collected data has a distribution which can be described by its center, spread and overall shape.<br><br>Understands the purpose of center and variability and that it can be summarized with a single number.<br><br>**Displays** numerical data in plots on a number line, including dot plots, histograms and box plots, and **determines which display is the most appropriate.**<br><br>**Summarizes numerical data sets in relation to their context, such as by reporting the number of observations, describing the nature of the attributes under investigation and using measures of center** | Recognizes a statistical question and understands that a set of collected data has a distribution which can be described by its center, spread and overall shape.<br><br>Understands the purpose of center and that it can be summarized with a single number. | **Recognizes a statistical question** and understands that a set of collected data has a distribution which can be described by its center, spread and overall shape.<br><br>Understands **the purpose of center** and that it can be summarized with a single number. | Understands that a set of collected data has a distribution which can be described by its center, spread and overall shape.<br><br>Understands that the center of a set of data can be summarized with a single number. |

| | Grade 6 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 6 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | **and variability.**<br><br>**Determines which measures of center and variability are the most appropriate for a set of data.** | | | |
| **Operations with Multi-Digit Numbers**<br>6.NS.2<br>6.NS.3-1<br>6.NS.3-2<br>6.NS.3-3<br>6.NS.3-4<br>6.Int.1 | Solves **two**-step word problems and other problems by dividing multi-digit numbers and adding, subtracting, multiplying and dividing multi-digit decimals **and assesses reasonableness of the result using different methods.** | Solves one-step **word** problems and other problems with some level of accuracy by dividing multi-digit numbers and adding, subtracting, multiplying and dividing multi-digit decimals. | Solves one-step problems by dividing multi-digit numbers and adding, subtracting, multiplying and dividing multi-digit decimals. | Solves one-step problems with **limited accuracy** by dividing multi-digit numbers and adding, subtracting, multiplying and dividing multi-digit decimals. |

| | Grade 6: Sub-Claim C<br>In connection with content, the student expresses Grade 6 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Properties of Operations**<br>6.C.1.1<br>6.C.2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on the properties of operations and the relationship between addition and subtraction or between multiplication and division, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• complete justification of a conclusion<br>• **generalization of an argument or conclusion**<br>• evaluating, interpreting, and critiquing the validity and **efficiency** of other's responses, approaches and reasoning, and **providing** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates a complete response based on the properties of operations and the relationship between addition and subtraction or between multiplication and division, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **complete** justification of a conclusion<br>• evaluating, **interpreting and critiquing** the validity of other's responses, approaches and reasoning. | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response based on the properties of operations and the relationship between addition and subtraction or between multiplication and division, including:<br>• **a logical** approach based on a conjecture and/or stated assumptions<br>• **a logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusions.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on the properties of operations and the relationship between addition and subtraction or between multiplication and division, which may include:<br>• a faulty approach based on a conjecture and/or stated assumptions<br>• an incomplete or illogical progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion |

| | Grade 6: Sub-Claim C<br>In connection with content, the student expresses Grade 6 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | **counter-examples where applicable**. | | | |
| **Concrete Referents and Diagrams**<br>6.C.3<br>6.C.4<br>6.C.5 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as: diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols, labels<br>• complete justification of a conclusion<br>• **generalization of an argument or conclusion**<br>• evaluating, interpreting and critiquing the validity and efficiency of other's responses, approaches and reasoning, and **provides a counter-example where applicable.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as: diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **complete justification of a conclusion**<br>• **evaluating**, interpreting and critiquing **the validity of other's** responses, **approaches and** reasoning | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response based on concrete referents provided in the prompt or **in simple cases, constructed by the student** such as: diagrams **that are connected to a written (symbolic) method**, number line diagrams or coordinate plane diagrams, including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some use** of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusions.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on concrete referents provided in the prompt such as: diagrams, number line diagrams or coordinate plane diagrams, which may include:<br>• a faulty approach based on a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion |
| **Distinguish Correct Explanation/ Reasoning from that which is Flawed**<br>6.C.6<br>6.C.7<br>6.C.8.1<br>6.C.8.2<br>6.C.9 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response to a given equation, multi-step problem, proposition or conjecture, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response to a given equation, multi-step problem, proposition or conjecture, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response to a given equation, multi-step problem, proposition or conjecture, including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• **a logical, but incomplete, progression of steps**<br>• minor calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response to a given equation, multi-step problem, proposition or conjecture, including:<br>• an approach based on a conjecture and/or stated or faulty assumptions<br>• an incomplete or illogical progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols and labels |

| | Grade 6: Sub-Claim C<br>In connection with content, the student expresses Grade 6 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | • complete justification of a conclusion<br>• **generalization of an argument or conclusion**<br>• evaluating, interpreting and critiquing the validity and efficiency of other's responses, approaches and reasoning, and **providing a counter-example where applicable.**<br>• identifying and describing errors in solutions and presents correct solutions.<br>• **distinguishing correct explanation/reasoning from that which is flawed. If there is a flaw, presents correct reasoning.** | • **complete** justification of a conclusion<br>• evaluating**, interpreting and critiquing** the validity of other's responses, approaches and **reasoning.**<br>• identifying and describing error in solutions and **presents correct solutions.** | • partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusion.**<br>• **identifying and describing errors in solutions.** | • partial justification of a conclusion |

| | Grade 6: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 6 by applying knowledge and skills articulated in the standards for Grade 6 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, making use of structure and/or looking for and expressing regularity in repeated reasoning. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Modeling**<br>6.D.1<br>6.D.2<br>6.D.3 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **d**evises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and making assumptions and approximations to simplify a real-world situation<br>• mapping relationships between important quantities by selecting appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• writing a complete, clear and correct algebraic expression | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and **making assumptions** and **approximations** to simplify a real-world situation<br>• **mapping relationships** between important quantities by **selecting appropriate** tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• writing **a complete, clear, and correct** algebraic expression | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• **illustrating relationships** between important quantities by using provided tools to create models<br>• analyzing relationships mathematically **between important quantities** to draw conclusions<br>• writing an incomplete algebraic expression or equation to describe a situation | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• identifying important quantities by using provided tools to create models<br>• analyzing relationships mathematically to draw conclusions<br>• writing an incomplete algebraic expression or equation to describe a situation |

| | Grade 6: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 6 by applying knowledge and skills articulated in the standards for Grade 6 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, making use of structure and/or looking for and expressing regularity in repeated reasoning. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | or equation to describe a situation<br>• applying proportional reasoning<br>• writing/using functions to describe how one quantity of interest depends on another<br>• using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• reflecting on whether the results make sense<br>• improving the model if it has not served its purpose<br>• interpreting mathematical results in the context of the situation<br>• **analyzing and/or creating limitations, relationships and interpreting goals within the model**<br>• **analyzing, justifying and defending models which lead to a conclusion** | or equation to describe a situation<br>• applying proportional reasoning<br>• writing/using functions to describe how one quantity of interest depends on another<br>• using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• reflecting on whether the results make sense<br>• **improving** the model if it has not served its purpose<br>• interpreting mathematical results in **the context of the situation** | • applying proportional reasoning<br>• **writing/**using functions to describe how one quantity of interest depends on another<br>• using **reasonable** estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• **reflecting on whether the results make sense**<br>• **modifying the model if it has not served its purpose**<br>• **interpreting mathematical results in a simplified context** | • applying proportional reasoning<br>• using functions to describe how one quantity of interest depends on another<br>• using unreasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity |

## Grade 7 Mathematics Performance Level Descriptors

| | **Grade 7 Math : Sub-Claim A**<br>The student solves problems involving Major Content for Grade 7 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Proportional Relationships**<br>7.RP.1<br>7.RP.2a<br>7.RP.2b<br>7.RP.2c<br>7.RP.2d<br>7.RP.3-1<br>7.RP.3-2 | **Analyzes** and uses proportional relationships to solve real-world and mathematical problems, including **multi-step** ratio/percent problems.<br><br>Computes unit rates of quantities associated with ratios of fractions.<br><br>Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate) in tables, equations, diagrams, verbal descriptions and graphs.<br><br>Interprets a point (*x, y*) on the graph of a proportional relationship in terms of the situation, with special attention to the points (0, 0) and (1, *r*) where *r* is the unit rate.<br><br>Represents proportional relationships by equations and uses them to solve mathematical and real-world problems, including multi-step ratio and percent problems.<br><br>**Determines when it is appropriate to use unit rates and understands its limitations.** | **Analyzes** and uses proportional relationships to solve real-world and mathematical problems, including simple ratio/percent problems.<br><br>Computes unit rates of quantities associated with ratios of fractions.<br><br>Decides whether two quantities are in a proportional relationship and identifies the constant of proportionality (unit rate) in tables, equations, diagrams, verbal descriptions and graphs.<br><br>**Interprets a point (*x, y*) on the graph** of a proportional relationship **in terms of the situation, with special attention to the points (0, 0) and (1, *r*) where *r* is the unit rate.**<br><br>**Represents proportional relationships by equations** and uses them to solve mathematical and real-world problems, including simple ratio and percent problems. | **Uses** proportional relationships to solve **real-world** and mathematical problems, including simple ratio/percent problems.<br><br>**Computes unit rates of quantities associated with ratios of fractions.**<br><br>**Decides** whether two quantities are in a proportional relationship and **identifies the constant of proportionality (unit rate) in tables, equations, diagrams, verbal descriptions and graphs.**<br><br>**Uses equations representing a proportional relationship to solve mathematical and real-world problems, including ratio and percent problems.** | Identifies proportional relationships to solve mathematical problems, including ratio/percent problems.<br><br>Identifies whether two quantities are in a proportional relationship. |
| **Operations with Fractions**<br>7.NS.1a<br>7.NS.1b-1<br>7.NS.1b-2<br>7.NS.1c-1<br>7.NS.1d<br>7.NS.2a-1<br>7.NS.2a-2<br>7.NS.2b-1<br>7.NS.2b-2<br>7.NS.2c<br>7.NS.3<br>7.EE.3 | Performs operations on positive and negative rational numbers in multi-step mathematical and real-world problems.<br><br>Represents addition and subtraction on a horizontal or vertical number line and recognizes situations in which opposite quantities combine to make zero.<br><br>Determines reasonableness of a solution and **interprets solutions in real-world contexts.** | Performs operations on positive and negative rational numbers in **multi-step** mathematical and real-world problems.<br><br>Represents addition and subtraction on a horizontal or vertical number line and recognizes situations in which opposite quantities combine to make zero.<br><br>**Determines reasonableness of a solution.** | Performs operations on positive and negative rational numbers in mathematical and **real-world** problems.<br><br>Represents addition and subtraction on a horizontal or vertical number line **and recognizes situations in which opposite quantities combine to make zero.** | Performs operations on positive and negative rational numbers in mathematical problems.<br><br>Represents addition and subtraction on a horizontal or vertical number line. |

| | Grade 7 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 7 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | **Using the properties of operations, justifies the steps taken to solve multi-step mathematical and real-world problems involving rational numbers.** | | | |
| **Expressions, Equations and Inequalities**<br>7.EE.1<br>7.EE.2<br>7.EE.4a-1<br>7.EE.4a-2<br>7.EE.4b | Applies properties of operations as strategies to add, subtract, factor and expand linear expressions.<br><br>Solves **multi-step** linear equations with rational coefficients.<br><br>In mathematical or real-world contexts, uses variables to represent quantities, construct and solve equations and inequalities, and graph **and interpret** solution sets.<br><br>**Rewrites an expression in different forms.**<br><br>**Describes the relationship between equivalent quantities that are expressed algebraically in different forms in a problem context and explains their equivalence in light of the context of the problem.** | Applies properties of operations as strategies to add, subtract, **factor** and expand linear expressions.<br><br>Solves two-step linear equations with rational coefficients.<br><br>In a mathematical or **real-world** context, uses variables to represent quantities, construct and solve equations and inequalities, and graph solution sets. | Applies properties of operations as strategies to add, subtract **and expand** linear expressions.<br><br>Solves **two-step** linear equations with rational coefficients.<br><br>**In a mathematical context, uses variables to represent quantities, construct and solve equations and inequalities, and graph solution sets.** | Applies properties of operations as strategies to add and subtract linear expressions.<br><br>Solves one-step linear equations with rational coefficients. |

| | Grade 7 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 7 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Representing Geometric Figures**<br>7.G.2<br>7.G.3 | Draws geometric figures – freehand, with a ruler and protractor or with technology – and describes their attributes.<br><br>Constructs triangles with given angle and side conditions and notices when those conditions determine a unique triangle, >1 triangle or no triangle.<br><br>Describes two-dimensional figures that result from slicing three-dimensional figures by a | Draws geometric figures – freehand, with a ruler and protractor or with technology – and describes their attributes.<br><br>Constructs triangles with given angle and side conditions.<br><br>**Describes the two-dimensional figures that result from slicing three-dimensional figures by a plane parallel or perpendicular to a base or face.** | Draws geometric figures – freehand, with a ruler and protractor, or with technology – and describes some of their attributes.<br><br>**Constructs triangles with given angle and side conditions.** | Draws geometric figures – freehand, with a ruler and protractor, or with technology – and describes some of their attributes. |

| | Grade 7 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 7 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | plane **which may or may not be** parallel or perpendicular to a base or face. | | | |
| **Drawings and Measurement**<br>7.G.1<br>7.G.4-1<br>7.G.4-2<br>7.G.5<br>7.G.6 | Solves mathematical and real-world problems involving circumference, area, surface area and volume of two-and three-dimensional objects, **including composite objects.**<br><br>Solves problems involving scale drawings of geometric figures, including reproducing a scale drawing at a different scale.<br><br>Represents angle relationships using equations to solve for unknown angles.<br><br>**Produces a logical conclusion** about the relationship between circle circumference and area. | Solves mathematical and **real-world** problems involving circumference, area, surface area and volume of two-and three-dimensional objects.<br><br>Solves problems involving scale drawings of geometric figures, **including reproducing a scale drawing at a different scale.**<br><br>**Represents** angle relationships **using equations to solve** for unknown angles. | Solves mathematical problems involving circumference, area, **surface area and volume** of two-**and three-**dimensional objects.<br><br>Solves problems involving scale drawings of geometric figures.<br><br>**Uses facts about angle relationships to determine the measure of unknown angles**. | Solves mathematical problems involving circumference and area of two-dimensional objects.<br><br>Solves problems involving scale drawings of geometric figures. |
| **Random Sampling and Comparative Inferences**<br>7.SP.1<br>7.SP.2<br>7.SP.3<br>7.SP.4 | Understands and uses random sampling to draw inferences about a population.<br><br>Draws relevant informal comparative inferences about 2 populations, including assessing the degree of visual overlap of 2 numerical data distributions with similar variabilities.<br><br>**Generates multiple samples of the same size to gauge the variation in estimates or predictions.**<br><br>**Analyzes whether a sample is representative of a population.** | **Understands and uses random sampling** to draw inferences about a population.<br><br>Draws **relevant** informal comparative inferences about two populations. | **Draws inferences about a population from a table or graph of random samples.**<br><br>**Draws informal comparative inferences about two populations.** | Compares two populations based on measures of center and measures of variability. |
| **Chance Processes and Probability Models**<br>7.SP.5<br>7.SP.6<br>7.SP.7a<br>7.SP.7b<br>7.SP.8a<br>7.SP.8b<br>7.SP.8c | Understands that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.<br><br>**Generates a sample space to determine** the probability of simple or compound events using methods such as organized lists, tables, tree diagrams or **simulations.** | Understands that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.<br><br>Finds probabilities when given sample spaces for simple **and compound** events using methods such as organized lists, tables and **tree diagrams.** | Understands that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.<br><br>**Finds probabilities when given sample spaces for simple events using methods such as organized lists and tables.** | Understands that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. |

| | Grade 7 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 7 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | Approximates the probability of a chance event by collecting data.<br><br>Develops probability models to determine the probabilities of events.<br><br>Designs and uses a simulation to generate frequencies for compound events.<br><br>**Designs and uses a simulation to estimate the probability of a compound event.** | **Develops a model to approximate the probability of a chance event and predicts approximate frequencies when given the probability or by observing frequencies in data generated from the process.** | | |

| | Grade 7 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 7 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Properties of Operations**<br>7.C.1.1<br>7.C.1.2<br>7.C.2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on properties of operations and relationship between addition and subtraction or multiplication and division, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols, labels<br>• complete justification of a conclusion<br>• **generalization of an argument or conclusion** evaluating, interpreting, and critiquing the validity of other's responses, approaches, conclusions and reasoning, and **correcting and providing counter-examples where applicable.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student **clearly** constructs and communicates a complete response based on the properties of operations and the relationship between addition and subtraction or between multiplication and division, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **complete** justification of a conclusion<br>• evaluating**, interpreting and critiquing** the validity of other's **responses,** approaches, conclusions, and **reasoning.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response based on the properties of operations and the relationship between addition and subtraction or between multiplication and division, including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical,** but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusions** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on the properties of operations and the relationship between addition and subtraction or between multiplication and division, including:<br>• a faulty approach based on a conjecture and/or stated assumptions<br>• an incomplete or illogical progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion |

| | Grade 7 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 7 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Concrete Referents and Diagrams**<br>7.C.3<br>7.C.4 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on concrete referents provided in the prompt or constructed by the student such as diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• complete justification of a conclusion<br>• generalization of an argument or conclusion<br>• evaluating, interpreting and critiquing the validity and efficiency of other's responses, approaches, conclusions and reasoning, and **providing a counterexample where applicable.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a **complete** response based on concrete referents provided in the prompt or **constructed by the student** such as: diagrams that are connected to a written (symbolic) method, number line diagrams or coordinate plane diagrams, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **complete** justification of a conclusion<br>• evaluating, **interpreting and critiquing** the validity of other's responses, approaches, conclusions and **reasoning.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on concrete referents provided in the prompt or in **simple cases, constructed by the student** such as: diagrams **that are connected to a written (symbolic) method,** number line diagrams or coordinate plane diagrams, including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion<br>• **evaluation the validity of other's approaches and conclusions.** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on concrete referents provided in the prompt such as: diagrams, number line diagrams or coordinate plane diagrams, which may include:<br>• a faulty approach based on a conjecture and/or stated assumptions<br>• an illogical and incomplete progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion |
| **Distinguish Correct Explanation / Reasoning from that which is Flawed**<br>7.C.5<br>7.C.6.1<br>7.C.7.1<br>7.C.7.2<br>7.C.7.3<br>7.C.7.4<br>7.C.8 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response to a given equation, multi-step problem, proposition or conjecture, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols, labels<br>• complete justification of a conclusion | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response to a given equation, multi-step problem, proposition or conjecture, including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols, labels<br>• **complete** justification of a conclusion | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response to a given equation, multi-step problem, proposition or conjecture, including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical,** but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response to a given equation, multi-step problem, proposition or conjecture, including:<br>• a faulty approach based on a conjecture and/or stated assumptions<br>• an illogical and incomplete progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols, labels<br>• partial justification of a conclusion |

| | Grade 7 Math: Sub-Claim C<br>In connection with content, the student expresses Grade 7 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | • **generalization of an argument or conclusion**<br>• evaluating, interpreting and critiquing the validity and **efficiency** of other's responses, approaches, conclusions and reasoning, and **provides a counterexample where applicable.**<br>• identifying and describing errors in solutions and presents correct solutions<br>• **distinguishing correct explanation/reasoning from that which is flawed. If there is a flaw, presents correct reasoning.** | • evaluating**, interpreting and critiquing** the validity of other's responses, approaches, conclusions and **reasoning.**<br>• identifying and describing errors in solutions and **presents correct solutions.** | • partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusions.**<br>• **identifying and describing errors in solutions.** | |

| | Grade 7 Math: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 7 by applying knowledge and skills articulated in the standards for Grade 7 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for the making use of structure and/or looking for and expressing regularity in repeated reasoning | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Modeling**<br>7.D.1<br>7.D.2<br>7.D.3<br>7.D.4 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and making assumptions and approximations to simplify a real-world situation<br>• mapping relationships between important quantities by selecting appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• writing a complete, clear and correct algebraic expression or equation to describe a situation<br>• applying proportional reasoning | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and **making assumptions** and **approximations** to simplify a real-world situation<br>• **mapping** relationships between important quantities by **selecting appropriate** tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• writing a **complete**, **clear and correct** algebraic expression or equation to describe a situation<br>• applying proportional reasoning | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• **illustrating relationships** between important quantities by using provided tools to create models<br>• analyzing relationships mathematically **between important quantities** to draw conclusions<br>• writing an incomplete algebraic expression or equation to describe a situation<br>• applying proportional reasoning | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and the workplace by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• identifying important quantities using provided tools to create models<br>• analyzing relationships mathematically to draw conclusions<br>• writing an incomplete algebraic expression or equation to describe a situation<br>• applying proportional reasoning using functions to describe how one quantity of interest depends on another |

| | **Grade 7 Math: Sub-Claim D**<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 7 by applying knowledge and skills articulated in the standards for Grade 7 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for the making use of structure and/or looking for and expressing regularity in repeated reasoning | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | • writing/using functions to describe how one quantity of interest depends on another<br>• using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• reflecting on whether the results make sense<br>• improving the model if it has not served its purpose<br>• interpreting mathematical results in the context of the situation<br>**• analyzing and/or creating constraints, relationships and goals**<br>**• analyzing, justifying and defending models which lead to a conclusion** | • writing/using functions to describe how one quantity of interest depends on another<br>• using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• reflecting on whether the results make sense<br>• **improving** the model if it has not served its purpose<br>• interpreting mathematical results in the **context of the situation** | • **writing**/using functions to describe how one quantity of interest depends on another<br>• using **reasonable** estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>**• reflecting on whether the results make sense**<br>**• modifying the model if it has not served its purpose**<br>**• interpreting mathematical results in a simplified context** | • using unreasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity |

## Grade 8 Mathematics Performance Level Descriptors

| | **Grade 8 Math : Sub-Claim A**<br>The student solves problems involving Major Content for Grade 8 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Expressions and Equations**<br>8 EE.1<br>8 EE.2 | Evaluates and generates equivalent numerical expressions using and applying properties of integer exponents.<br><br>Solves equations of the form $x^2 = p$ and $x^3 = p$, representing solutions **using √ or $\sqrt[3]{\ }$ symbols.** | Evaluates and **generates equivalent** numerical expressions using and **applying** properties of integer exponents.<br><br>**Solves** equations of the form $x^2 = p$, where $p$ is a perfect square, **and solves equations of the form $x^3 = p$, where $p$ is a perfect cube.** | Evaluates numerical expressions using properties of integer exponents.<br><br>**Partially solves equations of the form $x^2 = p$, where $p$ is a positive rational number and a perfect square < or = to 100, by representing only the positive solution of the equation.** | Evaluates numerical expressions using properties of integer exponents. |
| **Scientific Notation**<br>8.EE.3<br>8.EE.4-1<br>8.EE.4-2 | Using scientific notation, estimates very large and very small quantities, determines how many times as large a number is in relation to another.<br><br>Performs operations with numbers expressed in scientific notation. Interprets scientific notation that has been generated by technology.<br><br>Chooses appropriate units for measuring very large or very small quantities.<br><br>**Interprets scientific notation in context.** | Using scientific notation, estimates very large and **very small quantities.**<br><br>Performs operations with numbers expressed in scientific notation. | Using scientific notation, estimates very large quantities.<br><br>**Performs operations with numbers expressed in scientific notation.** | Using scientific notation, estimates very large quantities. |
| **Proportional Relationships and Linear Equations**<br>8.EE.5-1<br>8.EE.5-2<br>8.EE.6-1<br>8.F.3-1 | Graphs linear relationships in the form $y=mx+b$, including proportional relationships.<br><br>Interprets the unit rate as the slope of the graph of a proportional relationship and applies these concepts to solve real-world problems.<br><br>Compares two different proportional relationships represented in different ways.<br><br>Interprets $y=mx+b$ as defining a linear function.<br><br>Uses similar triangles to show that the slope is the same between any two distinct points on a non-vertical line in the coordinate plane. | Graphs linear relationships, in the form $y=mx+b$, including proportional relationships.<br><br>Interprets the unit rate as the slope of the graph of a proportional relationship and **applies these concepts to solve real-world problems**.<br><br>**Compares** two different proportional relationships represented in different ways. | Graphs linear relationships, in the form $y=mx+b$, **including proportional relationships.**<br><br>**Interprets the unit rate as the slope of the graph of a proportional relationship.**<br><br>**Makes some comparisons between two different proportional relationships represented in different ways**. | Graphs linear relationships, in the form $y=mx+b$. |

| | Grade 8 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 8 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Solving Linear Equations**<br>8.EE.7b<br>8.EE.C.Int. 1 | Solves **mathematical and real-world problems** linear equations in one variable, with rational number coefficients, including those that require use of the distributive property and combining like terms. | Solves linear equations in one variable, with rational number coefficients, including those that require use of the distributive property **and** combining like terms. | Solves linear equations in one variable, with rational number coefficients, **including those that require use of the distributive property or combining like terms.** | Solves linear equations in one variable, with rational number coefficients. |
| **Simultaneous Linear Equations**<br>8.EE.8a<br>8.EE.8b-1<br>8.EE.8b-2<br>8.EE.8b-3<br>8.EE.8c | Analyzes and solves mathematical and **real-world** problems leading to pairs of simultaneous linear equations graphically, algebraically and by **inspection.**<br><br>**Understands the relationship between the graphic representation and the algebraic solution to the system.**<br><br>**Verifies a solution utilizing multiple methods to prove accuracy.** | **Analyzes** and solves mathematical problems leading to pairs of simultaneous linear equations graphically and **algebraically.** | Solves mathematical problems leading to pairs of simultaneous linear equations graphically and by **inspection**. | Solves mathematical problems leading to pairs of simultaneous linear equations graphically, where the graph is provided. |
| **Functions**<br>8.F.1-1<br>8.F.1-2<br>8.F.2<br>8.F.3-2 | Understands that a function is a rule assigning to each input exactly 1 output, which can be graphed as a set of ordered pairs.<br><br>Compares properties of two functions represented in different ways.<br><br>Identifies **and proves** functions that are non-linear**.** | Understands that a function is a rule that assigns to each input exactly one output and can be graphed as a set of ordered pairs.<br><br>**Compares properties of two functions represented in different ways.** | Understands that a function is a rule that assigns to each input exactly one output **and can be graphed as a set of ordered pairs.** | Understands that a function is a rule that assigns to each input exactly one output. |
| **Congruence and Similarity**<br>8.G.1a<br>8.G.1b<br>8.G.1c<br>8.G.2<br>8.G.3<br>8.G.4 | Describes the effect of dilations, translations, rotations and reflections on two-dimensional figures with and without coordinates, determines whether two given figures are congruent or similar through one or more transformations and **describes the sequence of transformations to justify congruence or similarity of two figures.** | Describes the effect of **dilations**, translations, rotations and reflections on two-dimensional figures **with** coordinates, and determines whether two given figures are congruent **or similar through one or more transformations.** | Describes the effect of translations, rotations **and** reflections on two-dimensional figures without coordinates and determines whether two given figures are congruent. | Describes the effect of translations, rotations or reflections on two-dimensional figures without coordinates and determines whether two given figures are congruent. |
| **Pythagorean Theorem**<br>8.G.7-1<br>8.G.7-2<br>8.G.8 | Applies the Pythagorean Theorem in real world and mathematical problems in two and three dimensions and to find the distance between two points in a coordinate system. | Applies the Pythagorean Theorem in a simple planar case and **to find the distance between two points in a coordinate system.** | Applies the Pythagorean Theorem in solving **for any side** of the right triangle in a simple planar case without coordinates. | Applies the Pythagorean Theorem in solving for the hypotenuse of a right triangle in a simple planar case without coordinates. |

| | Grade 8 Math : Sub-Claim A<br>The student solves problems involving Major Content for Grade 8 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | **Recognizes situations to apply the Pythagorean Theorem in multi-step problems.** | | | |

| | Grade 8 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 8 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Rational Numbers**<br>8.NS.1<br>8.NS.2 | Distinguishes between rational and irrational numbers, understands that these numbers have decimal expansions and approximates their locations on a number line, and converts between terminating decimals or **decimals that repeat eventually** and fractional representations of rational numbers. | Distinguishes between rational and irrational numbers, understands that these numbers have decimal expansions and approximates their locations on a number line, and **converts between terminating decimals or repeating decimals of the form (0.aaa…) and fractional representations of rational numbers.** | Distinguishes between rational and irrational numbers and **understands that these numbers have decimal expansions** and approximates their locations on a number line. | Distinguishes between rational and irrational numbers and approximates their locations on a number line. |
| **Modeling with Functions**<br>8.F.4<br>8.F.5-1<br>8.F.5-2 | Constructs a function to model a linear relationship between two quantities described with or without a context.<br><br>Given a description of a relationship or two (*x,y*) values in a table of values or a graph, determines the rate of change and initial value of the function.<br><br>Analyzes **and** describes the functional relationship between two quantities.<br><br>Sketches a graph of a function when given a written description. | Constructs a function to model a linear relationship between two quantities described **with or without a context.**<br><br>**Given two (*x,y*) values in a table of values or a graph,** determines the rate of change and initial value of the function.<br><br>Analyzes the graph of a linear function to describe the functional relationship between two quantities.<br><br>**Sketches the graph of a function when given a written description.** | **Constructs** a function to model a linear relationship between two quantities in a table or a graph.<br><br>Determines the rate of change **and** initial value of the function from a table or graph that contains the initial value.<br><br>**Analyzes the graph of a linear function to describe the functional relationship between two quantities.** | Identifies a function to model a linear relationship between two quantities in a table or a graph.<br><br>Determines the rate of change or initial value of the function from a table or graph that contains the initial value. |
| **Volume**<br>8.G.9 | Identifies the formulas for the volume of cones, cylinders and spheres, and uses them to find the volume **or dimensions** of solids in mathematical and real-world problems.<br><br>**Applies these formulas to multiple composite mathematical solids.** | Identifies the formulas for the volume of cones, cylinders and spheres, and uses them to find the volume of solids in mathematical and **real-world** problems. | Identifies the formulas for the volume of cones, cylinders and spheres, and **uses them to find the volume of solids in mathematical problems.** | Identifies the formulas for the volume of cones, cylinders and spheres. |
| **Bivariate Data** | Analyzes and describes the patterns of association that can | **Analyzes** and describes the patterns of association that can | Describes the patterns of association that can be seen in | Describes the patterns of association that can be seen in |

| | Grade 8 Math: Sub-Claim B<br>The student solves problems involving Additional and Supporting Content for Grade 8 with connections to the Standards for Mathematical Practice. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| 8.SP.1<br>8.SP.2<br>8.SP.3<br>8.SP.4 | be seen in bivariate data by constructing, displaying and interpreting scatter plots and two-way tables.<br><br>Uses the equation of a linear model to solve problems in context.<br><br>Informally fits a straight line to a scatter plot that suggests a linear association and **assesses the model fit.**<br><br>**Compares linear models used to fit the same set of data to determine which is a better fit.** | be seen in bivariate data by **constructing, displaying and** interpreting scatter plots and two-way tables.<br><br>Uses the equation of a linear model to solve problems in context.<br><br>**Informally fits a straight line to** a scatter plot that suggests a linear association. | bivariate data by interpreting scatter plots and two-way tables.<br><br>**Uses a given equation of a linear model to solve problems in context.**<br><br>**Identifies a line of best fit for a scatter plot that suggests a linear association.** | bivariate data by interpreting scatter plots and two-way tables. |

| | Grade 8: Sub-Claim C<br>In connection with content, the student expresses Grade 8 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Graphs and Equations**<br>8.C.1.1<br>8.C.1.2<br>8.C.2 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• complete justification of a conclusion<br>• **generalization of an argument or conclusion**<br>• evaluating, interpreting, and critiquing the validity and efficiency of other's responses, approaches and | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **complete** justification of a conclusion<br>• evaluating, **interpreting and critiquing** the validity of other's responses, approaches, conclusions and **reasoning** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical,** but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusions** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on the principle that a graph of an equation in two variables is the set of all its solutions and a given equation or system of equations including:<br>• a faulty approach based on a conjecture and/or stated assumptions<br>• an illogical or incomplete progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion |

| | Grade 8: Sub-Claim C<br>In connection with content, the student expresses Grade 8 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
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| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | reasoning, conclusions and **reasoning correcting and providing a counterexample where applicable.** | | | |
| **Reasoning**<br>8.C.3.1<br>8.C.3.2<br>8.C.3.3<br>8.C.4.1<br>8.C.6 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level vocabulary, symbols and labels<br>• complete justification of a conclusion<br>• **generalization of an argument or conclusion**<br>• evaluating, interpreting and critiquing the validity of other's responses, approaches, conclusions and reasoning, **correcting and providing a counterexample where applicable** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level vocabulary, symbols and labels<br>• **complete** justification of a conclusion<br>• evaluating, **interpreting and critiquing** the validity of other's responses, approaches, conclusions and **reasoning** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusions** | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on a chain of reasoning to justify or refute algebraic, function or linear-equation propositions or conjectures including:<br>• a faulty approach based on a conjecture and/or stated assumptions<br>• an illogical and incomplete progression of steps<br>• major calculation errors<br>• limited use of grade-level vocabulary, symbols and labels<br>• partial justification of a conclusion. |
| **Geometric Reasoning**<br>8.C.5.1<br>8.C.5.2<br>8.C.5.3 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and complete progression of steps<br>• precision of calculation<br>• correct use of grade-level | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student clearly constructs and communicates a complete response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including:<br>• a logical approach based on a conjecture and/or stated assumptions<br>• a logical and **complete** progression of steps<br>• **precision** of calculation<br>• **correct** use of grade-level | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates a **complete** response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including:<br>• a **logical** approach based on a conjecture and/or stated assumptions<br>• a **logical**, but incomplete, progression of steps<br>• **minor** calculation errors<br>• **some** use of grade-level | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student constructs and communicates an incomplete response based on applying geometric reasoning in a coordinate setting and/or use coordinates to draw geometric conclusions including:<br>• a faulty approach based on a conjecture and/or stated assumptions<br>• an illogical and incomplete progression of steps<br>• major calculation errors<br>• limited use of grade-level |

| | Grade 8: Sub-Claim C<br>In connection with content, the student expresses Grade 8 appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | vocabulary, symbols and labels<br>• complete justification of a conclusion<br>• **generalization of an argument or conclusion**<br>• evaluating, interpreting and critiquing the validity and **efficiency** of other's responses, approaches and reasoning, **correcting and providing a counterexample where applicable**<br>• identifying and describing errors in solutions and presenting correct solutions<br>• **distinguishing correct explanation/reasoning from that which is flawed. If there is a flaw, presents correct reasoning.** | vocabulary, symbols and labels<br>• **complete** justification of a conclusion<br>• evaluating, **interpreting and critiquing** the validity of other's responses, approaches, conclusions and **reasoning**<br>• identifying and describing errors in solutions and **presenting correct solutions** | vocabulary, symbols and labels<br>• partial justification of a conclusion<br>• **evaluating the validity of other's approaches and conclusions**<br>• **identifying and describing errors in solutions** | vocabulary, symbols and labels<br>• partial justification of a conclusion |

| | Grade 8: Sub-Claim D<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 8 by applying knowledge and skills articulated in the standards for Grade 8 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for and making use of structure and/or looking for and expressing regularity in repeated reasoning. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| **Modeling**<br>8.D.1<br>8.D.2<br>8.D.3<br>8.D.4 | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and workplace by:<br>• using stated assumptions and making assumptions and approximations to simplify a real-world situation<br>• mapping relationships between important quantities by selecting appropriate tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• writing a complete, clear and correct algebraic expression | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and workplace by:<br>• using stated assumptions and **making assumptions** and **approximations** to simplify a real-world situation<br>• **mapping** relationships between important quantities by **selecting appropriate** tools to create models<br>• analyzing relationships mathematically between important quantities to draw conclusions<br>• writing a **complete, clear and correct** algebraic expression | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and workplace by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• **illustrating relationships between important quantities by using provided tools to create models**<br>• analyzing relationships mathematically **between important quantities** to draw conclusions<br>• writing an incomplete algebraic expression or equation to describe a | In connection with the content knowledge, skills, and abilities described in Sub-claims A and B, the student devises a plan to apply mathematics in solving problems arising in everyday life, society and workplace by:<br>• using stated assumptions and approximations to simplify a real-world situation<br>• identifying important quantities using provided tools to create models<br>• analyzing relationships mathematically to draw conclusions<br>• writing an incomplete algebraic expression or equation to describe a situation |

| | **Grade 8: Sub-Claim D**<br>In connection with content, the student solves real-world problems with a degree of difficulty appropriate to Grade 8 by applying knowledge and skills articulated in the standards for Grade 8 (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them, reasoning abstractly, and quantitatively, using appropriate tools strategically, looking for and making use of structure and/or looking for and expressing regularity in repeated reasoning. | | | |
|---|---|---|---|---|
| | **Level 5: Exceeds Expectations** | **Level 4: Meets Expectations** | **Level 3: Approaches Expectations** | **Level 2: Partially Meets Expectations** |
| | or equation to describe a situation<br>• applying proportional reasoning<br>• writing/using functions to describe how one quantity of interest depends on another | or equation to describe a situation<br>• applying proportional reasoning<br>• writing/using functions to describe how one quantity of interest depends on another | situation<br>• applying proportional reasoning<br>• **writing**/using functions to describe how one quantity of interest depends on another | |
| | • using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• reflecting on whether the results make sense<br>• improving the model if it has not served its purpose<br>• interpreting mathematical results in the context of the situation analyzing and/or creating constraints, relationships and goals analyzing, justifying and defending models which lead to a conclusion | • using reasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• reflecting on whether the results make sense<br>• **improving** the model if it has not served its purpose interpreting mathematical results in the **context of the situation** | • using **reasonable** estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity<br>• **reflecting on whether the results make sense**<br>• **modifying the model if it has not served its purpose interpreting mathematical results in a simplified context** | • applying proportional reasoning<br>• using functions to describe how one quantity of interest depends on another using unreasonable estimates of known quantities in a chain of reasoning that yields an estimate of an unknown quantity |

# Appendix C

CMAS Science

Prepared Graduate Statements and Grade Level Expectations

**Grade 5 Science**
**Standards, Prepared Graduate Statements, and Grade Level Expectations**

| 1 | Physical Science |
|---|---|
| PG 1 | Structure, properties, and interactions of matter |
| GLE 1 | Matter exists as particles too small to be seen; properties can be used to identify materials |
| GLE 2 | Chemical reactions and the Law of Conservations of Mass |
| GLE 3 | Gravity |
| 2 | Physical/Life Science |
| PG 1 | Structure, properties, and interactions of matter |
| GLE 4 | Energy from food was once energy from sun |
| PG 6 | How living systems interact with the environment |
| GLE 2 | Plants get most of their material for growth from air and water |
| GLE 1 | Matter cycles between air and soil; organisms live and die |
| 3 | Earth and Space Science |
| PG 9 | The universe and Earth's place in it |
| GLE 1 | Earth's major systems interact in multiple ways |
| GLE 2 | Interactions between Earth's orbit and the moon's orbit |
| PG 10 | How and why Earth is constantly changing |
| GLE 3 | Earth's major systems interact in multiple ways |
| GLE 4 | Earths major water is in the ocean and much of Earth's freshwater is in glaciers or underground |
| GLE 5 | Societal activities have major effects on land, ocean, atmosphere, and even outer space |

**Grade 8 Science**
**Standards and Prepared Graduate Statements**

| 1 | Physical Science |
|---|---|
| **PG 1** | Structure, properties, and interactions of matter |
| **PG 2** | Interactions between objects and within systems of objects |
| **PG 3** | How energy is transferred and conserved |
| **PG 4** | Waves are used to transfer energy and information |
| **2** | **Life Science** |
| **PG 5** | How structures of living things function to support life, growth, behavior, and reproduction |
| **PG 6** | How living systems interact with the environment |
| **PG 7** | How genetic and environmental factors influence variation of organisms across generations |
| **PG 8** | Fossil records, genetic variation, how organisms adapt to different environments, and biodiversity |
| **3** | **Earth and Space Science** |
| **PG 9** | The universe and Earth's place in it |
| **PG 10** | How and why Earth is constantly changing |
| **PG 11** | How human activities and Earth's surface processes interact |

**Grade 11 Science**
**Standards and Prepared Graduate Statements**

| 1 | Physical Science |
|---|---|
| PG 1 | Structure, properties, and interactions of matter |
| PG 2 | Interactions between objects and within systems of objects |
| PG 3 | How energy is transferred and conserved |
| PG 4 | Waves are used to transfer energy and information |
| 2 | Life Science |
| PG 5 | How structures of living things function to support life, growth, behavior, and reproduction |
| PG 6 | How living systems interact with the environment |
| PG 7 | How genetic and environmental factors influence variation of organisms across generations |
| PG 8 | Fossil records, genetic variation, how organisms adapt to different environments, and biodiversity |
| 3 | Earth and Space Science |
| PG 9 | The universe and Earth's place in it |
| PG 10 | How and why Earth is constantly changing |
| PG 11 | How human activities and Earth's surface processes interact |

# Appendix D

CMAS Mathematics, ELA, and CSLA Assessed Standards

**CMAS Grade 3 ELA and CSLA**
**Reading, Writing, and Communicating Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 3.2.1.a.i<br>3.2.1.a.iii<br>3.2.1.a.iv<br>3.2.1.a.v<br>3.2.1.a.vi<br>3.2.1.a.vi | Reading: Literature | Key Ideas & Details | Domain 1, Descriptor 1 |
| 3.2.1.b.i<br>3.2.1.b.iii | Reading: Literature | Craft & Structure | Domain 1, Descriptor 3 |
| 3.2.1.c.i<br>3.2.1.c.ii | Reading: Literature | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 3.2.2.a.i<br>3.2.2.a.ii<br>3.2.2.a.iii<br>3.2.2.a.iv | Reading: Informational Text | Key Ideas & Details | Domain 1, Descriptor 2 |
| 3.2.2.b.i<br>3.2.2.b.ii | Reading: Informational Text | Craft & Structure | Domain 1, Descriptor 3 |
| 3.2.2.c.i<br>3.2.2.c.ii<br>3.2.2.c.iii | Reading: Informational Text | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 3.2.3.c.i<br>3.2.3.d.i<br>3.2.3.d.iii<br>3.2.3.e | Language | Conventions of Standard English<br>Knowledge of Language<br>Vocabulary Acquisition and Use | Domain 3, Descriptors 1 & 2<br>Domain 3, Descriptors 1 & 2<br>Domain 2, Descriptor 1 |

**CMAS Grade 4 ELA and CSLA**
**Reading, Writing, and Communicating Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 4.2.1.a.i<br>4.2.1.a.ii<br>4.2.1.a.iii<br>4.2.1.a.iv | Reading: Literature | Key Ideas & Details | Domain 1, Descriptor 1 |
| 4.2.1.b.i<br>4.2.1.b.ii | Reading: Literature | Craft & Structure | Domain 1, Descriptor 3 |
| 4.2.1.c.i<br>4.2.1.c.ii | Reading: Literature | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 4.2.2.a.i<br>4.2.2.a.ii<br>4.2.2.a.iii | Reading: Informational Text | Key Ideas & Details | Domain 1, Descriptor 2 |
| 4.2.2.b.i<br>4.2.2.b.ii | Reading: Informational Text | Craft & Structure | Domain 1, Descriptor 3 |
| 4.2.2.c.i<br>4.2.2.c.ii<br>4.2.2.c.iii | Reading: Informational Text | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 4.2.3.c.i<br>4.2.3.d.i<br>4.2.3.d.ii<br>4.2.3.d.iii<br>4.2.3.e | Language | Conventions of Standard English<br>Knowledge of Language<br>Vocabulary Acquisition and Use | Domain 3, Descriptors 1 and 2<br>Domain 3, Descriptors 1 and 2<br>Domain 2, Descriptor 1 |

**CMAS Grade 5 ELA**
**Reading, Writing, and Communicating Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 5.2.1.b.i<br>5.2.1.b.ii<br>5.2.1.b.iii | Reading: Literature | Key Ideas & Details | Domain 1, Descriptor 1 |
| 5.2.1.c.i<br>5.2.1.c.iii<br>5.2.1.c.iv | Reading: Literature | Craft & Structure | Domain 1, Descriptor 3 |
| 5.2.1.d.i<br>5.2.1.d.ii<br>5.2.1.d.iii | Reading: Literature | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 5.2.2.a.i<br>5.2.2.a.ii<br>5.2.2.a.iii<br>5.2.2.a.iv | Reading: Informational Text | Key Ideas & Details | Domain 1, Descriptor 2 |
| 5.2.2.b.i<br>5.2.2.b.ii<br>5.2.2.b.iii | Reading: Informational Text | Craft & Structure | Domain 1, Descriptor 3 |
| 5.2.2.c.i<br>5.2.2.c.ii<br>5.2.2.c.iii | Reading: Informational Text | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 5.2.3.d.i<br>5.2.3.i.i<br>5.2.3.i.ii<br>5.2.3.j | Language | Conventions of Standard English<br>Knowledge of Language<br>Vocabulary Acquisition and Use | Domain 3, Descriptors 1 and 2<br>Domain 3, Descriptors 1 and 2<br>Domain 2, Descriptor 1 |

**CMAS Grade 6 ELA**
**Reading, Writing, and Communicating Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 6.2.1.a.i<br>6.2.1.a.ii<br>6.2.1.a.iii | Reading: Literature | Key Ideas & Details | Domain 1, Descriptor 1 |
| 6.2.1.b.i<br>6.2.1.b.ii<br>6.2.1.b.iii | Reading: Literature | Craft & Structure | Domain 1, Descriptor 3 |
| 6.2.1.c.i<br>6.2.1.c.ii | Reading: Literature | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 6.2.2.a.i<br>6.2.2.a.ii<br>6.2.2.a.iii | Reading: Informational Text | Key Ideas & Details | Domain 1, Descriptor 2 |
| 6.2.2.b.i<br>6.2.2.b.ii<br>6.2.2.b.iii | Reading: Informational Text | Craft & Structure | Domain 1, Descriptor 3 |
| 6.2.2.c.i<br>6.2.2.c.ii<br>6.2.2.c.iii | Reading: Informational Text | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 6.2.3.b.i<br>6.2.3.b.ii<br>6.2.3.b.iii<br>6.2.3.c | Language | Conventions of Standard English<br>Knowledge of Language<br>Vocabulary Acquisition and Use | Domain 4, Descriptors 1 and 2<br>Domain 4, Descriptors 1 and 2<br>Domain 2, Descriptor 1 |
| | Literacy in History/Social Studies | Key Ideas and Details<br>Craft and Structure<br>Integration of Knowledge and Ideas<br>Range of Reading and Level of Text Complexity | Domain 3, Descriptor 1 |
| | Literacy in Science & Technical Subjects | Key Ideas and Details<br>Craft and Structure<br>Integration of Knowledge and Ideas<br>Range of Reading and Level of Text Complexity | Domain 3, Descriptor 2 |

**CMAS Grade 7 ELA**
**Reading, Writing, and Communicating Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 7.2.1.a.i<br>7.2.1.a.ii<br>7.2.1.a.iii | Reading: Literature | Key Ideas & Details | Domain 1, Descriptor 1 |
| 7.2.1.b.i<br>7.2.1.b.ii<br>7.2.1.b.iii | Reading: Literature | Craft & Structure | Domain 1, Descriptor 3 |
| 7.2.1.c.ii | Reading: Literature | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 7.2.2.a.i<br>7.2.2.a.ii<br>7.2.2.a.iii | Reading: Informational Text | Key Ideas & Details | Domain 1, Descriptor 2 |
| 7.2.2.b.i<br>7.2.2.b.ii<br>7.2.2.b.iii | Reading: Informational Text | Craft & Structure | Domain 1, Descriptor 3 |
| 7.2.2.c.i<br>7.2.2.c.ii<br>7.2.2.c.iii | Reading: Informational Text | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 7.2.3.a.i<br>7.2.3.b.i<br>7.2.3.b.ii<br>7.2.3.b.iii<br>7.2.3.c | Language | Conventions of Standard English<br>Knowledge of Language<br>Vocabulary Acquisition and Use | Domain 4, Descriptors 1 and 2<br>Domain 4, Descriptors 1 and 2<br>Domain 2, Descriptor 1 |
| | Literacy in History/Social Studies | Key Ideas and Details<br>Craft and Structure<br>Integration of Knowledge and Ideas<br>Range of Reading and Level of Text Complexity | Domain 3, Descriptor 1 |
| | Literacy in Science & Technical Subjects | Key Ideas and Details<br>Craft and Structure<br>Integration of Knowledge and Ideas<br>Range of Reading and Level of Text Complexity | Domain 3, Descriptor 2 |

**CMAS Grade 8 ELA**
**Reading, Writing, and Communicating Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 8.2.2.a.i<br>8.2.2.a.ii<br>8.2.2.a.iii | Reading: Literature | Key Ideas & Details | Domain 1, Descriptor 1 |
| 8.2.1.b.i<br>8.2.1.b.ii<br>8.2.1.b.iii | Reading: Literature | Craft & Structure | Domain 1, Descriptor 3 |
| 8.2.1.c.ii | Reading: Literature | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 8.2.2.a.i<br>8.2.2.a.ii<br>8.2.2.a.iii | Reading: Informational Text | Key Ideas & Details | Domain 1, Descriptor 2 |
| 8.2.2.b.i<br>8.2.2.b.ii<br>8.2.2.b.iii | Reading: Informational Text | Craft & Structure | Domain 1, Descriptor 3 |
| 8.2.2.c.i<br>8.2.2.c.ii<br>8.2.2.c.iii | Reading: Informational Text | Integration of Knowledge & Ideas | Domain 1, Descriptor 4 |
| 8.2.3.a.i<br>8.2.3.a.ii<br>8.2.3.b.i<br>8.2.3.b.ii<br>8.2.3.b.iii<br>8.2.3.c | Language | Conventions of Standard English<br>Knowledge of Language<br>Vocabulary Acquisition and Use | Domain 4, Descriptors 1 and 2<br>Domain 4, Descriptors 1 and 2<br>Domain 2, Descriptor 1 |
| | Literacy in History/Social Studies | Key Ideas and Details<br>Craft and Structure<br>Integration of Knowledge and Ideas<br>Range of Reading and Level of Text Complexity | Domain 3, Descriptor 1 |
| | Literacy in Science & Technical Subjects | Key Ideas and Details<br>Craft and Structure<br>Integration of Knowledge and Ideas<br>Range of Reading and Level of Text Complexity | Domain 3, Descriptor 2 |

**CMAS Grade 3**
**Mathematics Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 3.OA.A.1<br>3.OA.A.2<br>3.OA.A.3<br>3.OA.A.4 | Operations & Algebraic Thinking | Represent and solve problems involving multiplication and division. | Domain 1, Descriptor 1 |
| 3.OA.B.5<br>3.OA.B.6 | Operations & Algebraic Thinking | Apply properties of multiplication and the relationship between multiplication and division. | Domain 1, Descriptor 1 |
| 3.OA.C.7 | Operations & Algebraic Thinking | Multiply and divide within 100. | Domain 1, Descriptor 1 |
| 3.OA.D.8<br>3.OA.D.9 | Operations & Algebraic Thinking | Solve problems involving the four operations and identify and explain patterns in arithmetic. | Domain 1, Descriptor 1 |
| 3.NBT.A.1<br>3.NBT.A.2<br>3.NBT.A.3 | Number & Operations in Base Ten | Use place value understanding and properties of operations to perform multi-digit arithmetic. [1]<br><br>[1] A range of algorithms may be used. | Domain 1, Descriptor 2 |
| 3.NF.A.1<br>3.NF.A.2.a<br>3.NF.A.2.b<br>3.NF.A.3.a<br>3.NF.A.3.b<br>3.NF.A.3.c<br>3.NF.A.3.d | Number & Operations—Fractions[1]<br><br>[1] Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8. | Develop understanding of fractions as numbers. | Domain 1, Descriptor 2 |
| 3.MD.A.1<br>3.MD.A.2 | Measurement & Data | Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. | Domain 1, Descriptor 3 |
| 3.MD.B.3<br>3.MD.B.4 | Measurement & Data | Represent and interpret data. | Domain 1, Descriptor 3 |
| 3.MD.C.5<br>3.MD.C.6<br>3.MD.C.7.a<br>3.MD.C.7.b<br>3.MD.C.7.c<br>3.MD.C.7.d | Measurement & Data | Use concepts of area and relate area to multiplication and to addition. | Domain 1, Descriptor 3 |
| 3.MD.D.8 | Measurement & Data | Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. | Domain 1, Descriptor 3 |
| 3.G.A.1<br>3.G.A.2 | Geometry | Reason with shapes and their attributes. | Included in the overall test scale score |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: On Grade Level | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision. | Domain 2, Descriptor 1 |

| | | | |
|---|---|---|---|
| | | - Model with Mathematics | |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: Securely Held Knowledge | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 2 |

**CMAS Grade 4**
**Mathematics Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 4.OA.A.1<br>4.OA.A.2<br>4.OA.A.3 | Operations & Algebraic Thinking | Use the four operations with whole numbers to solve problems. | Domain 1, Descriptor 1 |
| 4.OA.B.4 | Operations & Algebraic Thinking | Gain familiarity with factors and multiples. | Domain 1, Descriptor 1 |
| 4.OA.C.5 | Operations & Algebraic Thinking | Generate and analyze patterns. | Domain 1, Descriptor 1 |
| 4.NBT.A.1<br>4.NBT.A.2<br>4.NBT.A.3 | Number & Operations in Base Ten | Generalize place value understanding for multi-digit whole numbers. | Domain 1, Descriptor 2 |
| 4.NBT.B.4<br>4.NBT.B.5<br>4.NBT.B.6 | Number & Operations in Base Ten | Use place value understanding and properties of operations to perform multi-digit arithmetic. | Domain 1, Descriptor 2 |
| 4.NF.A.1<br>4.NF.A.2 | Number & Operations - Fractions | Extend understanding of fraction equivalence and ordering. | Domain 1, Descriptor 3 |
| 4.NF.B.3.a<br>4.NF.B.3.b<br>4.NF.B.3.c<br>4.NF.B.3.d<br>4.NF.B.4.a<br>4.NF.B.4.b<br>4.NF.B.4.c | Number & Operations - Fractions | Build fractions from unit fractions. | Domain 1, Descriptor 3 |
| 4.NF.C.5<br>4.NF.C.6<br>4.NF.C.7 | Number & Operations - Fractions | Use decimal notation for fractions and compare decimal fractions. | Domain 1, Descriptor 3 |
| 4.MD.A.1<br>4.MD.A.2<br>4.MD.A.3 | Measurement & Data | Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. | Domain 1, Descriptor 4 |
| 4.MD.B.4 | Measurement & Data | Represent and interpret data. | Domain 1, Descriptor 4 |
| 4.MD.C.5.a<br>4.MD.C.5.b<br>4.MD.C.6<br>4.MD.C.7 | Measurement & Data | Geometric measurement: understand concepts of angle and measure angles. | Domain 1, Descriptor 4 |
| 4.G.A.1<br>4.G.A.2<br>4.G.A.3 | Geometry | Draw and identify lines and angles and classify shapes by properties of their lines and angles. | Included in the overall test scale score |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: On Grade Level | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 1 |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: Securely Held Knowledge | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 2 |

**CMAS Grade 5**
**Mathematics Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 5.OA.A.1<br>5.OA.A.2 | Operations & Algebraic Thinking | Write and interpret numerical expressions. | Included in the overall test scale score |
| 5.OA.B.3 | Operations & Algebraic Thinking | Analyze patterns and relationships. | Included in the overall test scale score |
| 5.NBT.A.1<br>5.NBT.A.2<br>5.NBT.A.3.a<br>5.NBT.A.3.b<br>5.NBT.A.4 | Number & Operations in Base Ten | Understand the place value system. | Domain 1, Descriptor 1 |
| 5.NBT.B.5<br>5.NBT.B.6<br>5.NBT.B.7 | Number & Operations in Base Ten | Perform operations with multi-digit whole numbers and with decimals to hundredths. | Domain 1, Descriptor 1 |
| 5.NF.A.1<br>5.NF.A.2 | Number & Operations - Fractions | Use equivalent fractions as a strategy to add and subtract fractions. | Domain 1, Descriptor 2 |
| 5.NF.B.3<br>5.NF.B.4.a<br>5.NF.B.4.b<br>5.NF.B.5.a<br>5.NF.B.5.b<br>5.NF.B.6<br>5.NF.B.7.a<br>5.NF.B.7.b<br>5.NF.B.7.c | Number & Operations - Fractions | Apply and extend previous understandings of multiplication and division. | Domain 1, Descriptor 2 |
| 5.MD.A.1 | Measurement & Data | Convert like measurement units within a given measurement system. | Domain 1, Descriptor 3 |
| 5.MD.B.2 | Measurement & Data | Represent and interpret data. | Domain 1, Descriptor 3 |
| 5.MD.C.3.a<br>5.MD.C.3.b<br>5.MD.C.4<br>5.MD.C.5.a<br>5.MD.C.5.b<br>5.MD.C.5.c | Measurement & Data | Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition. | Domain 1, Descriptor 3 |
| 5.G.A.1<br>5.G.A.2 | Geometry | Graph points on the coordinate plane to solve real-world and mathematical problems. | Included in the overall test scale score |
| 5.G.B.3<br>5.G.B.4 | Geometry | Classify two-dimensional figures into categories based on their properties. | Included in the overall test scale score |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: On Grade Level | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 1 |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: Securely Held Knowledge | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 2 |

**CMAS Grade 6**
**Mathematics Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 6.RP.A.1<br>6.RP.A.2<br>6.RP.A.3.a<br>6.RP.A.3.b<br>6.RP.A.3.c<br>6.RP.A.3.d | Ratios & Proportional Relationships | Understand ratio concepts and use ratio reasoning to solve problems. | Domain 1, Descriptor 1 |
| 6.NS.A.1 | The Number System | Apply and extend previous understandings of multiplication and division to divide fractions by fractions. | Domain 1, Descriptor 2 |
| 6.NS.B.2<br>6.NS.B.3<br>6.NS.B.4 | The Number System | Compute fluently with multi-digit numbers and find common factors and multiples. | Domain 1, Descriptor 2 |
| 6.NS.C.5<br>6.NS.C.6.a<br>6.NS.C.6.b<br>6.NS.C.6.c<br>6.NS.C.7.a<br>6.NS.C.7.b<br>6.NS.C.7.c<br>6.NS.C.7.d<br>6.NS.C.8 | The Number System | Apply and extend previous understandings of numbers to the system of rational numbers. | Domain 1, Descriptor 2 |
| 6.EE.A.1<br>6.EE.A.2.a<br>6.EE.A.2.b<br>6.EE.A.2.c<br>6.EE.A.3<br>6.EE.A.4 | Expressions & Equations | Apply and extend previous understandings of arithmetic to algebraic expressions. | Domain 1, Descriptor 3 |
| 6.EE.B.5<br>6.EE.B.6<br>6.EE.B.7<br>6.EE.B.8 | Expressions & Equations | Reason about and solve one-variable equations and inequalities. | Domain 1, Descriptor 3 |
| 6.EE.C.9 | Expressions & Equations | Represent and analyze quantitative relationships between dependent and independent variables. | Domain 1, Descriptor 3 |
| 6.G.A.1<br>6.G.A.2<br>6.G.A.3<br>6.G.A.4 | Geometry | Solve real-world and mathematical problems involving area, surface area, and volume. | Included in the overall test scale score |
| 6.SP.A.1<br>6.SP.A.2<br>6.SP.A.3 | Statistics & Probability | Develop understanding of statistical variability. | Included in the overall test scale score |
| 6.SP.B.4<br>6.SP.B.5.a<br>6.SP.B.5.b<br>6.SP.B.5.c<br>6.SP.B.5.d | Statistics & Probability | Summarize and describe distributions. | Included in the overall test scale score |

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| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: On Grade Level | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 1 |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: Securely Held Knowledge | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 2 |

**CMAS Grade 7**
**Mathematics Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 7.RP.A.1<br>7.RP.A.2.a<br>7.RP.A.2.b<br>7.RP.A.2.c<br>7.RP.A.2.d<br>7.RP.A.3 | Ratios & Proportional Relationships | Analyze proportional relationships and use them to solve real-world and mathematical problems. | Domain 1, Descriptor 1 |
| 7.NS.A.1<br>7.NS.A.2.a<br>7.NS.A.2.b<br>7.NS.A.2.c<br>7.NS.A.2.d<br>7.NS.A.3 | The Number System | Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. | Domain 1, Descriptor 2 |
| 7.EE.A.1<br>7.EE.A.2 | Expressions & Equations | Use properties of operations to generate equivalent expressions. | Domain 1, Descriptor 3 |
| 7.EE.B.3<br>7.EE.B.4.a<br>7.EE.B.4.b | Expressions & Equations | Solve real-life and mathematical problems using numerical and algebraic expressions and equations. | Domain 1, Descriptor 3 |
| 7.G.A.1<br>7.G.A.2<br>7.G.A.3 | Geometry | Draw construct and describe geometrical figures and describe the relationships between them. | Included in the overall test scale score |
| 7.G.B.4<br>7.G.B.5<br>7.G.B.6<br>7.G.B.7.a<br>7.G.B.7.b<br>7.G.B.8.a<br>7.G.B.8.b<br>7.G.B.8.c | Geometry | Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. | Included in the overall test scale score |
| 7.SP.A.1<br>7.SP.A.2 | Statistics & Probability | Use random sampling to draw inferences about a population. | Domain 1, Descriptor 4 |
| 7.SP.B.3<br>7.SP.B.4 | Statistics & Probability | Draw informal comparative inferences about two populations. | Domain 1, Descriptor 4 |
| 7.SP.C.5<br>7.SP.C.6<br>7.SP.C.7.a<br>7.SP.C.7.b<br>7.SP.C.8.a<br>7.SP.C.8.b<br>7.SP.C.8.c | Statistics & Probability | Investigate chance processes and develop, use, and evaluate probability models. | Domain 1, Descriptor 4 |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: On Grade Level | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 1 |

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| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: Securely Held Knowledge | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 2 |

**CMAS Grade 8**
**Mathematics Standards**

| Colorado Academic Standards | Domain | Standard Descriptor | Data File Code |
|---|---|---|---|
| 8.NS.A.1<br>8.NS.A.2 | The Number System | Know that there are numbers that are not rational and approximate them by rational numbers. | Included in the overall test scale score |
| 8.EE.A.1<br>8.EE.A.2<br>8.EE.A.3<br>8.EE.A.4 | Expressions & Equations | Expressions and equations work with radicals and integer exponents. | Domain 1, Descriptor 2 |
| 8.EE.B.5<br>8.EE.B.6 | Expressions & Equations | Understand the connections between proportional relationships, lines, and linear equations. | Domain 1, Descriptor 2 |
| 8.EE.C.7.a<br>8.EE.C.7.b<br>8.EE.C.8.a<br>8.EE.C.8.b<br>8.EE.C.8.c | Expressions & Equations | Analyze and solve linear equations and pairs of simultaneous linear equations. | Domain 1, Descriptor 2 |
| 8.F.A.1<br>8.F.A.2<br>8.F.A.3 | Functions | Define, evaluate, and compare functions. | Domain 1, Descriptor 3 |
| 8.F.B.4<br>8.F.B.5 | Functions | Use functions to model relationships between quantities. | Domain 1, Descriptor 3 |
| 8.G.A.1.a<br>8.G.A.1.b<br>8.G.A.1.c<br>8.G.A.2<br>8.G.A.3<br>8.G.A.4<br>8.G.A.5 | Geometry | Understand congruence and similarity using physical models, transparencies, or geometry software. | Domain 1, Descriptor 1 |
| 8.G.B.6<br>8.G.B.7<br>8.G.B.8 | Geometry | Understand and apply the Pythagorean Theorem. | Domain 1, Descriptor 1 |
| 8.G.C.9 | Geometry | Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. | Domain 1, Descriptor 1 |
| 8.SP.A.1<br>8.SP.A.2<br>8.SP.A.3<br>8.SP.A.4 | Statistics & Probability | Investigate patterns of association in bivariate data. | Included in the overall test scale score |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: On Grade Level | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 1 |
| SMP 3<br>SMP 6<br>SMP 4 | Modeling & Reasoning: Securely Held Knowledge | - Construct Viable Arguments and Critique the Reasoning of Others<br>- Attend to Precision.<br>- Model with Mathematics | Domain 2, Descriptor 2 |