

2020 Colorado Academic Standards

Family and Community Guides



4th Grade

To support families, communities, and teachers in realizing the goals of the Colorado Academic Standards (CAS), this guide provides an overview of the learning expectations for preschool. This guide offers some learning experiences students may engage in at school that may also be supported at home.



The comprehensive health standards in the elementary years focus on developing individual skills to enhance physical, emotional, and social wellness and using those individual skills in family, school, and community environments. In each grade, the standards ask students to investigate healthy eating and living habits, explore positive communication strategies, examine effective decision-making, and identify ways to ensure personal and community safety.

Expectations for 4th Grade Students:

- **Physical and Personal Wellness:** Set a goal to enhance personal nutrition and examine the connection between food and health (physical, emotional, social).
- **Social and Emotional Wellness:** Identify the positive behaviors that support relationships; define stress and stress management.
- **Prevention and Risk Management:** Use interpersonal communication skills to avoid tobacco; identify positive and negative uses for medicines; prevent conflict from escalating to violence.

Throughout 4th Grade You May Find Students:

- Explaining how healthy foods provide energy for daily activities and how nutrients are necessary for good health, proper growth, and development.
- Discussing and demonstrating how daily physical activity can make a person feel (increased energy and concentration).
- Developing healthy relationships with peers and adults who can support school success and encourage responsible behavior.
- Demonstrating how stress management helps build positive mental health.
- Communicating personal health needs and wants.
- Communicating physical and emotional consequences of violence.
- Effectively communicating to support healthy behaviors in others.
- Identifying the impact of excessive use of technology and unhealthy substances.



The dance standards in the elementary years focus on general dance knowledge and skills to ensure a solid foundation for more specialized dance studies. In each grade, students explore various dance forms, gain body awareness and movement skills, develop problem-solving skills through dance making, and respond to dance performances.

Expectations for 4th Grade Students:

- **Movement, Technique, and Performance (Perform/Present):** Perform dance sequences using safe and healthy practices; perform dance combinations that use the elements of space (levels of the body and floor), time (speed and pacing), and energy (intensity of movements).
- **Create, Compose and Choreograph (Create):** Adapt a simple group dance using basic dance patterns.
- **Historical and Cultural Context (Know/Comprehend):** Recognize how dance communicates values and beliefs in different cultures; recognize meaning and intent of famous dance pieces.
- **Reflect, Connect, and Respond (Critique/Evaluate/Refine):** Discuss the differences and similarities of various choreographers; connect training in dance class to the rehearsal and performance process.

Throughout 4th Grade You May Find Students:

- Performing dance sequences that emphasize the elements of dance (space, time, and energy); exploring different ways to change a group dance phrase.
- Discussing different dance styles and music genre (songs from Colorado's History, patriotic songs, contemporary songs).
- Identifying the country of origin of a dance.
- Analyzing and evaluating the process used when creating and performing a dance (describing decisions around transitioning from one dance pattern to another).



The drama and theatre arts standards in the elementary years focus on general drama knowledge/skills and basic theatre elements to ensure a solid foundation for more specialized study in later grades, including technical theatre, creative movement, improvisation, acting/writing/directing, and film studies. Students discover techniques; perform theatrical works; explore characters, plot, and themes; investigate dramatic texts; discover and describe personal theatre preferences; and explore constructive ways to reflect and respond to various dramatic works.

Expectations for 4th Grade Students:

- **Create:** Through exploration, use physical and vocal choices to create meaning in a drama to theatre work. Visualize and design technical elements of a production. Develop believable characters through body, voice, and improvisation. Contribute ideas to collaborate with peers.
- **Perform:** Propose design elements to enhance a dramatic work. Investigate dramatic works by portraying a character individually and collaboratively through movement and vocal choices.
- **Critically Respond:** Use personal experiences to analyze dramatic works. Analyze the impact of cultural and historical perspectives in performance. Reflect on technical choices in a performance.

Throughout 4th Grade You May Find Students:

- Examining stories for ideas to create or adapt for a dramatic performance.
- Creating props and/or sets to depict a setting or environment.
- Working in small ensembles to determine possible blocking (stage movement and placement) and character interactions.
- Exploring movement and voice techniques to depict a character.
- Discussing details about personal performances or the performances of others.
- Collaborating with peers to make character, setting, and thematic choices.



The mathematics standards in the elementary years focus on number and operations. Ideas from measurement and geometry help students learn about numbers and quantities. In each grade, students make sense of problems, explain their thinking, and describe their world with mathematics.

Expectations for 4th Grade Students:

- **Number and Quantity:** Extend the concept of multiplication to multiplying a fraction by whole number through the idea of scaling (the picture is 3 times the original size versus the picture is $\frac{1}{3}$ times the original size); compare and contrast simple addition and subtraction of fractions to whole number addition and subtraction; compare the size of fractions; solve simple multi-digit multiplication and division problems by making connections to place value.
- **Algebra and Functions:** Fluently (consistently) add and subtract multi-digit numbers; generate and analyze patterns involving multiplication and division.
- **Data, Statistics, and Probability:** Solve word problems involving measurements including simple conversions from one unit to another; create bar graphs from measurement data.
- **Geometry:** Find the measure of angles; classify shapes based on lines and angles.

Throughout 4th Grade You May Find Students:

- Adding and subtracting large numbers with ease using place value.
- Explaining the connection between addition and subtraction.
- Solving multi-digit multiplication and division problems.
- Solving word problems about the addition and subtraction of fractions.
- Explaining what it means when something is one-half or one-third times the original size ($\frac{1}{2} \times 1$; $\frac{1}{3} \times 1$) versus three times the original size of an object (3×1).
- Describing turns with angle measurements ("He just did a 180 on his skateboard").
- Exploring what happens when you measure an item in inches versus feet and vice versa.



The music standards in the elementary years focus on general music knowledge and skills to ensure a solid foundation for the opportunity for more specialized musical study in later years. In each elementary grade, students investigate and perform various music styles and genres, examine the language of music through identifying and writing simple music notation, consider simple musical composition processes, and develop the ability to describe their own musical preferences as well as critique the music of others.

Expectations for 4th Grade Students:

- **Expression of Music (Perform/Present):** Perform using appropriate technique to include expressive details such as varied dynamics (loud/soft), tempo (moderate/fast), and harmony. Respond to peer, teacher feedback and self-reflection to improve musical skills.
- **Creation of Music (Create):** Create a melody.
- **Theory of Music (Know/Comprehend):** Read, write and demonstrate knowledge of various music notation symbols.
- **Aesthetic Valuation of Music (Appreciate and Understand):** Evaluate music and study music from American history.

Throughout 4th Grade You May Find Students:

- Following a conductor while singing and playing various musical styles.
- Exploring different ways to change part of a song, such as slowing it down or speeding it up for a specific intention (making the mood happier or more intense).
- Identifying music notation symbols on a piece of music such as tempo (rate of speed to perform), dynamic (how loud or soft to perform), meter (how many beats per measure).
- Identifying specific parts of a song.
- Discussing the origin and purpose of a song.



The physical education standards in the elementary years focus on enhancing movement concepts and skills, understanding basic health-related components and skill-related components of fitness and how it relates to personal fitness, demonstrating respect, and the ability to follow directions. In each grade, students demonstrate various movement concepts; assess personal behaviors; connect fitness development to body systems; demonstrate respect for self, others, and various physical activity environments; and utilize safety procedures during physical activities.

Expectations for 4th Grade Students:

- **Movement Competence and Understanding:** Identify the major characteristics of mature locomotor (e.g., walking, running, skipping), non-locomotor (e.g., twisting, stretching, bending), manipulative (e.g., catching, throwing, striking) and rhythmic skills (e.g., dancing, jumping rope, hula hoops); provide and receive feedback to and from peers using the major characteristics of mature locomotor and manipulative skills.
- **Physical and Personal Wellness:** Explain how the health-related fitness components are used to improve physical fitness; analyze opportunities for participating in physical activity and actively engage in teacher-directed and independent activities.
- **Social and Emotional Wellness:** Assess and take responsibility for personal behavior and stress management.
- **Prevention and Risk Management:** Demonstrate knowledge of safe practices in a physical activity setting.

Throughout 4th Grade You May Find Students:

- Dribbling and passing an object to a moving receiver.
- Using a variety of manipulatives to throw to a moving target, making the needed adjustments for skill improvement.
- Creating a rhythmic routine, including gymnastics, creative dance, or jump rope.
- Using peer assessment tools to recognize and evaluate the critical elements of movement in a variety of physical activities.
- Identifying health-related components of fitness and demonstrating an exercise that positively impacts each component.
- Understanding the importance of participation in fitness-enhancing physical activities such as gymnastics clubs, community-sponsored youth sports, or activity clubs.
- Demonstrating respect for the person who is officiating.
- Explaining safety considerations prior to participation in lead-up games.



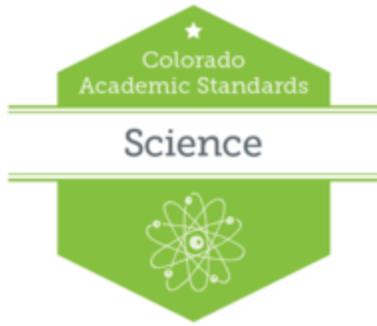
The reading, writing, and communicating standards in preschool are aligned to the expectations within Colorado’s Early Learning and Development Guidelines and the latest revision of the Head Start Early Learning Outcomes Framework. They outline development expectations and indicators of progress for preschool age students in receptive and expressive language; understanding and obtaining meaning from stories and information from books and other texts; phonological awareness; concepts of early decoding; names and sounds associated with alphabetic knowledge; emerging skills to communicate through written representations, symbols, and letters; and asking a question to identify and define a problem and its possible solution.

Expectations for 4th Grade Students:

- **Oral Expression and Listening:** Develop and use a plan to effectively convey information and use active listening strategies (asking questions, paraphrasing, body posture) to receive information.
- **Reading for All Purposes:** Read literary (stories), informational, and persuasive books and articles with understanding and with fluency (with appropriate speed, accuracy, and expression) supported by a knowledge of spelling patterns, word parts (prefixes, root words, suffixes), and vocabulary (word meanings) especially when it comes to words with many syllables.
- **Writing and Composition:** Use a writing process – planning, drafting, revising, editing, sharing – to produce a variety of stories, informational articles and essays, and opinion pieces for an intended audience and with a clear purpose.
- **Research Inquiry and Design:** Use reading and writing skills to gather information – individually and in groups – and produce a written or oral presentation based on the new information gained from the research process.

Throughout 4th Grade You May Find Students:

- Reading a variety of literature and nonfiction texts to understand different perspectives and perceptions; using strategies to understand texts (generating questions, summarizing, marking the text); making connections within and between different texts.
- Writing about texts to “think through” a response to a reading; using strategies to effectively share responses with group members; actively listening to others (paraphrasing, summarizing, and responding); reflecting on readings; making personal connections to texts.
- Exploring the decisions a writer makes in producing the piece of writing (the author’s “craft”); comparing different books, articles, or stories about the same topic; evaluating the use of illustrations or graphics in a text; explaining how writers use evidence to support ideas.
- Writing narratives to express experiences in the world; using evidence from texts to produce explanations or arguments; using research skills to answer questions about a topic; talking with peers and adults about how to improve writing; writing with accuracy and with a variety of sentence structures, appropriate vocabulary and word choice, and correct punctuation.



Three-dimensional science standards in the elementary grades lay the foundation for students to work and think like scientists and engineers. We also see strong connections to skills students will use to be successful with reading, literacy, and mathematics. In elementary grades, we will explore disciplinary core ideas in physical, life, and Earth and space sciences via phenomena in the world around us. Learners in elementary grades develop and ask testable questions, collect, and analyze different types of evidence, and write and communicate our understanding. Mastery of these standards will result in young learners who have a deep understanding of how scientific knowledge can provide solutions to practical problems we see in our world.

Expectations for 4th Grade Students:

- **Physical Science:** Recognize that energy comes in many forms such as light, heat, sound, magnetic, chemical, and electrical and can move from place to place; understand collisions between objects can impact motion; recognize that waves have regular patterns of motion, and that patterns can be used to encode, send, receive, and decode information, explain how an object can be seen.
- **Life Science:** Recognize that organisms have both internal and external structures that serve various functions, and describe how animals receive and process information through their senses.
- **Earth and Space Science:** Understand how Earth has changed over time, and how energy and fuels that humans use are derived from natural sources and their uses affect the environment in multiple ways.

Throughout 4th Grade You May Find Students:

- Using evidence to construct an explanation relating to the speed of an object, and ask questions about the changes in energy that occur when objects collide.
- Making observations to provide evidence that energy can be transferred from place to place.
- Developing models to describe the properties of waves or to describe how we see objects.
- Constructing an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- Using models to describe that animals receive and process information through their senses.
- Analyzing and interpreting data from maps to describe patterns of Earth's features.
- Identifying evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.
- Obtaining and combining information to describe that energy and fuels are derived from natural resources, and their uses affect the environment.



The social studies standards in the elementary years begin with individuals and families and move from there to explorations of neighborhoods, communities, the state of Colorado, and the United States. In each grade, students investigate historical events, examine geographic features and resources, consider economic decision-making processes, and define civic roles and responsibilities.

Expectations for 4th Grade Students:

- **History:** Explain the role of individuals, diverse cultural groups, and ideas in the historical development of Colorado; organize and sequence events in Colorado history in chronological order; recognize the connections between important Colorado events and important events in the history of the United States.
- **Geography:** Use maps to ask and answer questions about the geography of Colorado and to understand the interactions between humans and their environment.
- **Economics:** Explain the relationship between choice and “opportunity cost” (the value of something that you give up when choosing something else). **Personal Financial Literacy:** Define positive and negative incentives.
- **Civics:** Discuss multiple perspectives on an issue; explain the formation and structure of Colorado state government (General Assembly, Judicial, and Executive branches).

Throughout 4th Grade You May Find Students:

- Using primary and secondary sources such as artifacts, documents, photos, and newspaper articles to examine cause and effect relationships among events in Colorado’s history; explaining the role of individuals and groups in the development of Colorado (trappers, traders, miners); exploring examples of conflict and cooperation between the diverse cultures in Colorado.
- Using map keys, symbols, and legends to show how Colorado cities, towns, and neighborhoods were settled, and how they have developed and changed over time; exploring the connections between Colorado’s physical resources (mountains, plains) and why diverse populations have chosen to live here.
- Describing unique products and services provided in Colorado; exploring the connections between Colorado’s physical resources and what is produced and provided in the state.
- Discussing the work of the three branches of Colorado’s state government; explaining the types of services state government provides and how those are funded; examining multiple perspectives on a Colorado issue (use of water) in order to consider possible solutions that could benefit the most people.



The visual arts standards in preschool focus on experiences and exploration in art-making and with art materials. This helps to develop a foundation and appreciation for visual art. In preschool, students identify art in their daily surroundings, experience that art can be used to represent stories and ideas, explore various art-making processes, and begin to see how art is a part of their community.

Expectations for 4th Grade Students:

- **Observe and Learn to Comprehend (Know/Comprehend):** Find and explain similarities and differences in various types of art; explain art from different points of view.
- **Envision and Critique to Reflect (Critique/Evaluate/Refine):** Discuss what a work of art communicates; use visual art terminology to describe artworks.
- **Invent and Discover to Create (Create/Present):** Use art materials, techniques, and processes to express ideas; use materials, techniques, and processes in unique ways.
- **Relate and Connect to Transfer (Connect/Apply/Transfer):** Explain how people find individual and personal meaning in an artwork that may differ from others'; explain how works of art can provide details about the time and place they were created.

Throughout 4th Grade You May Find Students:

- Talking about how artists' feelings or emotions show up in artwork.
- Discussing the ideas or point of view an artist is trying to convey through their artwork sharing the personal meaning found in an artwork.
- Making an informed judgment about a work of art by using knowledge about artistic processes, techniques, and styles.
- Using art techniques to create a piece of art that shares important personal ideas or subjects; describing how artworks provide important historical and cultural details.
- Using traditional techniques to invent new ways to create artworks.



The world language standards are organized in language proficiency range levels. Language proficiency refers to the degree of skill with which a person can use a language to understand, speak, read, write, and listen in real-life situations. Colorado's standards provide guidance for the introduction of a new language (novice-low) through the minimum proficiency range deemed postsecondary and workforce ready (advanced-low).

The world languages standards in the elementary years create a roadmap to guide K-5 students in the process of learning a new language and understanding diverse cultural perspectives, as well as developing insights into their own language and culture at the appropriate developmental stage. The standards reflect a performance-based discipline which emphasizes communication skills (interpersonal speaking and writing; interpretive reading, listening, and viewing and presentational speaking and writing) in a new language to navigate real-life situations. Students use the newly acquired language while making connections with other academic disciplines, comparing both the nature of language and the nature of culture with their own language and the one being learned and with investigation and interaction of cultural practices and products in order to better understand multiple perspectives. These standards prepare students to participate more fully in the interconnected global community and the international marketplace.

Why are world language standards organized in language proficiency range levels? Language proficiency refers to the degree of skill with which a person can use a language to understand, speak, read, write, and listen in real-life situations. Colorado's standards provide guidance for the introduction of a new language (novice-low) through the minimum proficiency range deemed postsecondary and workforce ready (advanced-low). Progression through levels of proficiency is influenced by program design such as grade levels, competency-based programs, time for language instruction, and immersion programs. Language programs in many schools districts have multiple entry points. Both the length and the type of program design impact both language acquisition and proficiency level for students.

To view the expectations for elementary students at the various proficiency ranges, go to:
<http://www.cde.state.co.us/standardsandinstruction/2020cas-wl-es-guides>