A Parent’s Guide to Student Learning

Examples of what your child will be learning at each grade level

HIGH SCHOOL

Denver Public Schools has embraced the Colorado Academic Standards to ensure students are equipped for success in the 21st Century. These parent guides provide an overview of what your child will be learning in language arts, math, science and social studies, based on the academic standards, in each grade. They also describe ways you can help at home and include additional helpful resources.
Language Arts

**Critically read complex works, produce high-quality writing**
- Read and analyze foundational works of American and world literature and examine how two or more texts from the same time period treat similar themes or topics.
- Cite strong evidence from a text to analyze what it says explicitly as well as what it implies, including determining when a text leaves a point unclear or unproven.
- Identify and evaluate the reasoning used in historical documents, including the application of constitutional or legal principles.
- Support arguments in an analysis of challenging topics or texts using valid reasoning and relevant and sufficient evidence.
- Conduct short- and long-term research projects to answer a question or solve a problem.
- Participate effectively in group discussions, expressing ideas clearly and persuasively and building on the ideas of others.
- Demonstrate understanding of complex or figurative language (such as hyperbole) and distinguishing what is directly stated in a text from what is actually meant.
- Understand the role that figurative language plays in a text.
- Present evidence using multiple media formats (such as graphics or audio/visual presentations) to enhance understanding of findings, reasoning and evidence.

Mathematics

**Numerical skill and quantitative reasoning, algebra, functions, geometry**
- Create and solve equations (mathematical statements that use letters to represent unknown numbers, such as \(2x - 6y = 14\)) with two or more variables to describe numbers or relationships.
- Build an understanding of rational numbers (such as \(\frac{3}{4}\)) to include rational expressions (such as \(\frac{3}{(x-4)}\)).
- Use the structure of an expression to identify ways to rewrite it.
- Add, subtract and multiply polynomials.
- Interpret the slope of a line as the rate of change in two variables and the intercept as the constant term in a linear model.
- Build and analyze functions that describe relationships between quantities and use function notation.
- Represent and perform operations with complex numbers.
- Understand the rules of probability and use them to interpret data and evaluate the outcomes of decisions.
- Distinguish between correlation and causation.
- Interpret quantitative and categorical data.
- Use algebraic reasoning to prove geometric theorems.
- Apply geometric concepts to model real-life situations.
EXAMPLES OF WHAT YOUR CHILD WILL BE LEARNING IN HIGH SCHOOL

Science

Laws of motion, atomic and molecular structure, biological evolution

- Observe, explain and predict natural phenomena governed by Newton’s laws of motion, acknowledging the limitations for very small or very fast objects.
- Apply an understanding of atomic and molecular structure to explain the properties of matter and predict outcomes of chemical and nuclear reactions.
- Apply an understanding that energy exists in various forms and its transformation and conservation occur in processes that are predictable and measurable.
- Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems’ dependence on natural selection.
- Explain and illustrate with examples how living systems interact with the biotic and abiotic environment.
- Analyze how various organisms grow, develop and differentiate during their lifetimes based on an interplay between genetics and their environment.
- Explain how biological evolution accounts for the unity and diversity of living organisms.
- Describe and interpret how Earth’s geologic history and place in space are relevant to our understanding of the processes that have shaped our planet.
- Evaluate evidence that Earth’s geosphere, atmosphere, hydrosphere and biosphere interact as a complex system.

Social Studies

Use the historical method of inquiry, analyze public policy

- Use the historical method of inquiry to ask questions, evaluate primary and secondary sources, critically analyze and interpret data, and develop interpretations defended by evidence from primary and secondary sources.
- Understand key concepts of continuity and change, cause and effect, complexity, unity and diversity over time.
- Interpret the significance of ideas as powerful forces throughout history.
- Use maps and geographic tools to analyze features on Earth.
- Explain and interpret geographic variables that influence the interactions of people, places and environments.
- Understand the interconnected nature of the world, its people and places.
- Recognize productive resources – natural, human, capital – are scarce and choices must be made about how individuals and societies allocate them.
- Design a financial plan based on short- and long-term financial goals.
- Analyze strategic spending, saving and investment options to achieve the objectives of diversification, liquidity, income and growth.
- Describe purposes of and limitations on the foundations, structures and functions of government.
- Analyze how public policy – domestic and foreign – is developed at the local, state and national levels and compare how policymakers occur in other forms of government.
You do not have to be an expert to help your child with homework. The Colorado Academic Standards are focused on critical thinking. So asking your child these three simple questions can help develop deeper understanding:

• Ask “How do you know that?” to prompt your child to think critically about reaching an answer.
• Ask “Can you prove it?” to encourage your child to defend a solution or explain an alternate route.
• Ask “Can you use this in a real-world situation?” to spark thinking about using what’s learned in everyday life.

Language arts

• Samples of literacy texts by grade level:
  - In grades 9 and 10, this may include novels such as The Grapes of Wrath by John Steinbeck or poems such as The Raven by Edgar Allen Poe.
  - In grades 11 and 12, this may include novels such as The Great Gatsby by F. Scott Fitzgerald or Don Quixote by Miguel de Cervantes or poems such as Ode on a Grecian Urn by John Keats.

• Samples of informational texts by grade level:
  - In grades 9 and 10, this may include historical documents such as Letter from the Birmingham Jail by Martin Luther King, Jr. or Gettysburg Address by Abraham Lincoln.
  - In grades 11 and 12, this may include historical documents such as Common Sense by Thomas Paine or social commentary such as Politics and the English Language by George Orwell.

• Reach out to your child’s teacher – Ask questions such as:
  - Is my child becoming an effective writer? Is my child becoming more skilled at reading and understanding challenging material? What extra support can I provide at home to reinforce what you are teaching in class? How can I ensure that my child is prepared and developing good study habits for college?

Math

• Help your child learn outside of school:
  - Show enthusiasm for your child’s study of mathematics.
  - Encourage your child to be persistent; make sure that he or she knows that math requires patience, practice and time.
  - Urge your child to ask the teacher questions either during or after class.
  - Encourage your child to review class notes every night. If there is something he or she doesn’t understand, have your child look at the answers and work backwards to determine how the solution was found.

• Reach out to your child’s teacher – Ask questions such as:
  - Where is my child excelling? How can I support this success? What do you think is giving my child the most trouble? How can I help my child improve in this area? Are there options provided by the school for enrichment experiences in math, science, technology or engineering (STEM areas)? Is there a homework hotline to ask questions?

Want to learn more?

Resources: The DPS standards website provides additional information and parent resources on the academic standards and how you can help at home. Visit standards.dpsk12.org to find the following resources:

- **DPS guides:**
  - Parent guides for all grade levels.
  - Standards and students with special needs.
  - Technology expectations by grade level.
- **These guides were developed using the following outside resources (also available on the DPS standards site):**
  - Colorado Department of Education grade-level expectations for all 10 Colorado Academic Standards.
  - National PTA parent success guides, by grade level, in language arts and math (English and Spanish).
  - Council of Great City Schools parent roadmaps, by grade level, in language arts and math (English and Spanish).

Questions:

For questions, please email standards@dpsk12.org.