



# KY Standards

Your home for Kentucky Academic Standards.

## WELCOME TO GRADE 8!

### A Family's Guide to the *Kentucky Academic Standards*

This guide was made to help families understand the *Kentucky Academic Standards* and to show what children will learn by the end of 8th grade. This tool provides information about the key ideas and skills teachers will introduce in mathematics, reading and writing, science and social studies. It includes possible examples of what students will be asked to do in class, how to help your child at home, questions you can ask your 8th-grader and questions families can ask their child's teacher.

This guide also was designed to help parents understand how they can work with teachers to support the learning of their 8th-grader. When teachers and families work together to help students master *Kentucky's Academic Standards*, students can succeed by developing the skills they will need for life after graduation.

If you have questions about this information or if your child needs extra help, please contact your child's teacher.

#### Why are the *Kentucky Academic Standards* important?

*Kentucky Academic Standards* are important because they help make sure that all students, no matter where they live or what school they attend, have the skills they need to go after a successful future. Standards represent a goal or outcome of a subject area (such as mathematics, reading and writing, science and social studies). They help set clear and consistent expectations for what students should know and be able to do from kindergarten through high school. The standards are not a curriculum and do not determine the design of a lesson plan or how units should be organized. Decisions on how best to help students meet the goals in the standards are left to local school districts and teachers.

#### How are the standards organized?

The *Kentucky Academic Standards* are organized differently based on the content area. Some of the *Kentucky Academic Standards* are arranged grade-by-grade, while others are grouped into several grade levels, such as "high school" for grades 9-12. In all subjects, the standards show what students should learn and be able to do, but not how those learning experiences are to be designed or what resources should be used. For more information on the *Kentucky Academic Standards*, visit <https://kystandards.org/> to read the complete standards and find standards-related resources.



kystandards.org



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# GRADE 8 MATHEMATICS

## OVERVIEW:

During 8th grade, students will develop the ability to solve linear equations with one variable. Your child will:

- Use algebra to figure out personal finances and make business decisions;
- Explore linear situations in great depth, including using statistics as a tool to see if there is a linear relationship between two variables; and
- Explore the connections between geometric and algebraic ideas as students are introduced to the classic formulas, like the Pythagorean Theorem.

## Examples of Your Child's Work at School:

- Solving systems of two linear equations and relating those systems to pairs of lines that either intersect, never intersect or are the same line;
- Grasping the concept of a function as a rule that assigns to each input exactly one output;
- Using ideas about distance and angles to determine how they behave under changes such as rotations or reflections,
- Using ideas about congruence and similarity to describe, analyze and solve problems involving 2D figures; and
- Understanding and applying the Pythagorean Theorem to find distances between points on a coordinate plane.

## How to Help Your Child at Home:

- If you go bowling, talk to your child about the one-time cost of renting shoes and the repeated cost of paying for each game that is bowled.
- Compare the costs involved in bowling to going skating and paying a set amount for each person that is skating.
- Use everyday “function” language, such as how time at the grocery store is likely related to how many items you are buying or how many friends you run into.
- Discuss terms that mean something specialized in math compared to how we use them in family conversations, such as similar, translation, reflection, transformation, system, origin and variable.

## Questions You Can Ask Your Child:

- Would you rather start with \$50 and save \$5 per week for a year or start at \$0 and save \$7 per week for a year?
- At what point does one option become better than the other? Are there any circumstances that would lead you to select the other option?

## Questions You Can Ask Your Child's Teacher:

- What do you think is giving my child the most trouble? How can I help him or her improve in this area?
- How much time should my child spend on homework each night?
- Are there any tools (resources, websites, videos, etc.) we can use at home for support?
- How can we access Desmos? (Desmos is the online calculator students will have access to during upcoming assessments.) Are there any features that we should use at home to support classroom learning?
- What can I do to prepare my child for high school?
- What will my child be learning this year? How can I support her or his development in that area?

# GRADE 8 READING AND WRITING

## OVERVIEW:

During 8th grade, students will be provided with the tools to become proficient readers and writers. Your child will:

- Read a variety of texts – like books, poems, stories and articles – in both print and digital forms from diverse cultures and time periods on a variety of topics;
- Use print and non-print resources to write argumentative, informational and narrative products to become effective, independent communicators;
- Develop a knowledge of English grammar and an extensive vocabulary;
- Analyze how authors use words, structures and evidence for different purposes; and
- Think critically and analytically to become independent, proficient, lifelong learners.

## Examples of Your Child's Work at School:

- Making connections between modern texts and traditional ones, like when a short story reminds readers of an ancient myth, religious story or traditional works like fables or fairy tales;
- Reading articles and speeches on the same topic and finding where they disagree on facts, interpretations or perspectives, noticing when evidence does not relate to the claim;
- Writing arguments that are supported with facts and logical reasoning. Acknowledge that there is another side to the issue and provide evidence to prove that it is wrong; and
- Using narratives or stories as support in other forms of writing.

## How to Help Your Child at Home:

- Keep books, magazines and newspapers available in your home.
- Visit your local library to see what resources and programs are available for your child.
- Make time to discuss events in your family and current events.

## Questions You Can Ask Your Child:

- What message does the text (book, movie, TV show, magazine article, movie, news programs or commercial) send to you? Do you believe the message? Why or why not?
- How did the writer choose certain words to impact how you think or feel about the topic?
- How would you challenge the information that the writer presented? What evidence would you use to argue the point with him or her?
- How are stories used in commercials? News segments? Magazine articles? Webpages?

## Questions You Can Ask Your Child's Teacher:

- How can we practice critical reading, viewing and discussions at home?
- How can I help my child develop as a reader and writer?
- How can we use his or her interests to encourage reading and writing at home?
- How can we practice debating claims and counterclaims about a topic?

# GRADE 8 SCIENCE

## OVERVIEW:

During 8th grade, your child will be an active learner who will be doing science to learn science. They will continue to build on concepts learned in grades K–7 and experience similar science and engineering practices (skills) as those used by professionals in the field such as obtaining, evaluating and communicating information; constructing explanations and designing solutions; developing and using models; analyzing and interpreting data; planning and carrying out investigations; engaging in arguments from evidence; and using mathematics and computational thinking while making connections across the different areas of science to develop a deeper understanding of the science concepts. Your child will:

- Develop an understanding of the significant and complex issues surrounding human uses of land, energy, mineral and water resources and the resulting impacts of their development;
- Build on their understanding of how environmental and genetic factors affect growth of organisms by connecting this to the role of animal behaviors in reproduction of animals as well as the dependence of some plants on animal behaviors for their reproduction;
- Describe ways gene mutations and sexual reproduction contribute to genetic variation and how they can use ideas of genetic variation in a population to make sense of organisms surviving and reproducing, hence passing on the traits of the species.
- Examine geoscience data to understand the processes and events in Earth's history.

## Examples of Your Child's Work at School:

- Constructing an argument supported by evidence for how increases in human population and consumption of natural resources impact Earth's systems;
- Analyzing and interpreting data in the fossil record that document the existence, diversity, extinction and change of life forms throughout the history of life on Earth;
- Gathering and synthesizing information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms; and
- Designing a method for monitoring and minimizing a human impact (water usage, land usage and pollution) on the environment.

## How to Help Your Child at Home:

- Observe and investigate the way humans interact with the environment in your community in the past and present;
- Visit a natural history museum near your home to learn about the way that plant and animal life have changed over time; and
- Discuss traits that are common in your family and how those traits have been passed down from previous generations.

## Questions You Can Ask Your Child:

- How do humans impact the environment and how could we minimize the impact?
- What are you trying to figure out in science class?
- What kinds of investigations are you doing in science class?
- What kinds of problems are you solving? How has research helped you develop a solution?

## Questions You Can Ask Your Child's Teacher:

- What kind of phenomena are being explored?
- How are students asked to incorporate evidence into their explanations and arguments?
- How are reading and writing and mathematics being brought into science instruction?

# GRADE 8 SOCIAL STUDIES

## OVERVIEW:

In 8th grade, students will investigate how conflict and compromise impacted the founding and development of the United States between 1600 and 1877 in the Colonial Era, Revolutionary Period, Early Republic, Westward Expansion, Civil War and Reconstruction. Your child will:

- Analyze the role of citizens in the U.S. political system, with attention to the definition of who is a citizen, the expansion of the definition over time and the changes in participation over time;
- Recognize the impact of diversity in the United States by considering multiple perspectives;
- Explain how global interconnections impacted culture, land use and trade in the United States; and
- Explain the role of changing political, social and economic perspectives had on the lives of diverse groups of people.

## Examples of Your Child's Work at School:

- Creating claims and arguments that are based on research and include multiple perspectives;
- Explaining the relationship between federalism and local, state and national governments;
- Interpreting how political, environmental, social and economic factors led to both forced and voluntary migration in the United States; and
- Explaining examples of political, geographic, social and economic changes and consistencies in the different regions of the United States.

## How to Help Your Child at Home:

- Encourage your child to ask questions. When he or she asks questions, rather than give answers immediately, suggest thinking about where the answer might be found.
- Encourage your child to read nonfiction materials, such as articles and biographies.
- Encourage your child to evaluate news reports of the same event from multiple news outlets.
- Visit local museums, libraries and historical societies and look for information about how early American historical events impacted your area.
- Model civic engagement by researching candidates before voting, filling out census documents as a family and participating in local events.

## Questions You Can Ask Your Child:

- How did events in early American history impact Kentucky?
- How did the choices early Americans made change the nation's history? Kentucky's history?
- How do Americans effectively compromise and what are some compromises that affected the nation?

## Questions You Can Ask Your Child's Teacher:

- What resources can we use to investigate multiple perspectives on current events?
- What books or online resources would support what you are teaching in class?
- What current events should my child know more about?