

# Welcome to HIGH SCHOOL!

The Commonwealth of Massachusetts sets expectations, or standards, for what every student will know and be able to do in school. This guide is designed to help you understand those standards and partner with teachers to support your child's learning during high school. If you have questions about this information or your child needs extra help, please talk to your child's teacher.

## To talk to your child about school, you can ask:

- ▶ Can you tell me about something you **read** today?
- ▶ How could you use the **math** you learned today?
- ▶ What **scientific ideas** did you talk about today?
- ▶ What did you learn about your **role in society** today?
- ▶ How did someone help you learn today?

## If your child is also learning English, you can ask:

- ▶ How does your teacher help you understand and participate in class?
- ▶ How do you work on your English while you learn academic material?



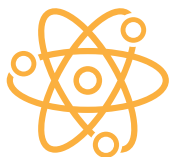
### TO LEARN ENGLISH LANGUAGE ARTS AND LITERACY at every grade, your child will:

- ▶ Read various texts, like books, poems, letters, news articles, and Internet pages.
- ▶ Speak and listen in formal and informal ways, like presentations and conversations.
- ▶ Communicate opinions, information, and experiences in writing for various readers.
- ▶ Use knowledge of English grammar and vocabulary in both speech and writing.



### TO LEARN MATHEMATICS at every grade, your child will:

- ▶ Use math to represent and solve real-world problems.
- ▶ Use math to make arguments about why something is true or false.
- ▶ Use tools, like rulers and calculators, to show mathematical relationships.
- ▶ Use patterns and the structures of numbers to think about math.



### TO LEARN SCIENCE AND TECHNOLOGY/ENGINEERING at every grade, your child will:

- ▶ Ask scientific questions about the natural world and things humans design.
- ▶ Learn through various experiences, like observations and experiments.
- ▶ Solve problems using the skills and tools of engineers and scientists.
- ▶ Share solutions and communicate explanations of how the world works.

### TO LEARN HISTORY AND SOCIAL SCIENCE at every grade, your child will:

- ▶ Learn about their local community and about the state, country, and world.
- ▶ Discover how people and events from the past relate to the present.
- ▶ Work to understand how different people see the world differently.
- ▶ Use various sources of information in research, discussion, and inquiry.



## NEW EXPECTATIONS FOR HIGH SCHOOL:

- ▶ Notice when a text (like an article or speech) is not coherent: for example, when it contradicts itself or uses the same words to mean different things.
- ▶ Read important texts from history. Analyze how they affected the people and societies around them, and how those people and societies affected them.
- ▶ Revise writing to get rid of unnecessary words and phrases. For example, change “I went together with my family” to “I went with my family.”
- ▶ In class discussions, take action when necessary to make sure that everyone can participate and all perspectives are heard.



## BY THE END OF HIGH SCHOOL, STUDENTS CAN:



- ▶ Use literary criticism (texts that analyze literature) to help understand literature. For example, analyze a poem using an article someone else wrote about the poem.
- ▶ Analyze texts with complex characters, structures, and messages: for example, books with multiple themes, settings, plots, or points of view.
- ▶ Understand ways in which authors and speakers try to influence readers and listeners: for example, telling sad stories, using big words, or leaving out important information.
- ▶ Use a variety of credible (believable) sources when doing research. Avoid relying too much on one source of information.
- ▶ Use semicolons (;), colons (:), and hyphens (-) correctly and effectively.
- ▶ Understand that the English language changes over time and that even experts can disagree about grammar and spelling.

## QUESTIONS YOU CAN ASK YOUR CHILD:

- ▶ When you look for information online, how do you know what sources to trust?
- ▶ What new type of speaking or writing have you tried recently? What was it like?



## TOPICS YOU CAN DISCUSS WITH YOUR CHILD'S TEACHER:

- ▶ Ways your child uses reading and writing outside of school
- ▶ Ways to help your child connect reading, writing, speaking, and listening



Districts have flexibility in designing high school course sequences to meet the math standards. Most students follow either a traditional course sequence (Algebra 1, Geometry, Algebra 2...) or an integrated one (Math 1, Math 2, Math 3...). **All high school students focus on six areas of math:**



**Number and Quantity**, including complex numbers and numbers with rational exponents. For example, choose appropriate units and technology to model the movement of a swing or the acceleration of a jet.

**Algebra**, applicable to tasks like calculating mortgage payments and comparing the costs of phone plans. Create and interpret linear and quadratic equations, use polynomials, solve systems of inequalities, and more.

*f(x)* **Functions**, describing situations where one quantity depends on another: for example, when the value of a savings account depends on how long it has existed. Use function notation, build functions, create quadratic and trigonometric models, and more.

**Modeling**, choosing and using appropriate methods to understand situations in the world and make good decisions about them. For example, create a model to predict how much food and drinking water a city will need after a flood.

**Geometry**, applicable to tasks like making quilts and creating computer animations. Work with concepts like congruence, similarity, and symmetry; explore geometric proofs and connections between algebra and geometry.

**Statistics and probability**, applicable to tasks like tracking student success over time or how disease spreads in a community. Conduct experiments using random samples, calculate the probability of events, use probability to make good decisions, and more.



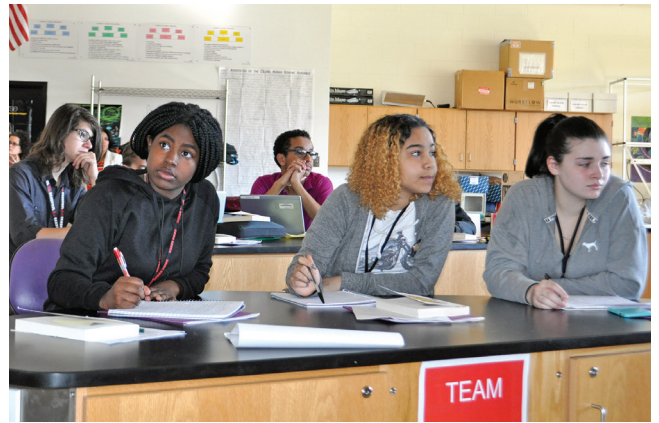
#### QUESTIONS YOU CAN ASK YOUR CHILD:

- ▶ How does the math you're learning relate to the real world?
- ▶ What is the most interesting thing you have learned in math this year?

#### TOPICS YOU CAN DISCUSS WITH YOUR CHILD'S TEACHER:

- ▶ Your child's readiness for future math courses
- ▶ Your child's course options beyond Algebra 2 or Mathematics 3

# SCIENCE AND TECHNOLOGY/ENGINEERING

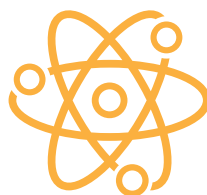


The standards for science and technology/engineering (STE) focus on five areas: earth and space science, biology, chemistry, physics, and technology/engineering. Districts have flexibility in designing high school course sequences and courses—including electives like environmental science, robotics, and forensics—aligned to the standards.



No matter what courses they take, all high school students develop and master certain STE skills, or practices. They might demonstrate these STE practices by:

- ▶ Analyzing and comparing solutions to global problems, like strategies for using less fossil fuel.
- ▶ Designing and doing an experiment, like to find out how photosynthesis turns light energy into stored chemical energy.
- ▶ Designing, building, and improving devices that change energy from one form to another.
- ▶ Using the periodic table as a tool to predict how elements will behave in different situations.
- ▶ Using models (including mathematical and computer-generated models) to explain, predict, or analyze: for example, to explain the carbon cycle, describe the impacts of climate change, or illustrate forces and changes in energy between magnetically or electrically charged objects.
- ▶ Using math to explain that living and nonliving factors affect populations and species within an ecosystem.
- ▶ Using evidence to explain relationships between natural resources, human populations, and biodiversity.
- ▶ Researching and communicating evidence to demonstrate biological evolution.



## QUESTIONS YOU CAN ASK YOUR CHILD:

- ▶ How does the science you're learning relate to the real world?
- ▶ What is the most interesting thing you have learned in science this year?

## TOPICS YOU CAN DISCUSS WITH YOUR CHILD'S TEACHER:

- ▶ Places in the community (museums, universities, businesses) where your child can learn science by working or volunteering
- ▶ Your child's readiness for future science or engineering courses

High school students take courses in United States history, world history, news/media literacy, and other social sciences. They learn through research and inquiry, completing multi-step projects focused on important and interesting questions and problems. At some point during high school, students lead a civics project in the community.

No matter what courses they take, all high school students develop certain history and social science skills, or practices:

- ▶ Being an involved and knowledgeable member of society
- ▶ Recognizing problems and questions that need to be addressed
- ▶ Collecting information from various sources and deciding which to trust
- ▶ Explaining what they have learned about a problem or question
- ▶ Explaining what should be done about the problem or question

Throughout high school, students explore how people of diverse backgrounds have built the United States, how the country became a world power, and how its people have fought for equality and against injustice. Students also explore world cultures, empires, and nations and the many ways in which they have interacted throughout history and continue to interact today.



### QUESTIONS YOU CAN ASK YOUR CHILD:

- ▶ What topics have you researched recently? What did your research teach you?
- ▶ Whose perspectives did you think about in class today, other than your own?
- ▶ How does what you're learning help you understand the world?

### TOPICS YOU CAN DISCUSS WITH YOUR CHILD'S TEACHER:

- ▶ Ways you can expand your child's knowledge of global issues
- ▶ Opportunities for your child to take elective and advanced courses in history and social science

