

# 8

## School Readiness What Students Should Know and Be Able to Do at the End of the 8th Grade



### Reading/English Language Arts *Based on the Maryland College and Career-Ready Standards*

Determine the meaning of words and phrases as they are used in a reading and analyze the impact of word choice on meaning and tone

Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the original story or script, and evaluate the choices made by the director or actors

Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea

Describe and evaluate arguments and claims in a reading, and assess whether the reasoning is sound and the evidence is sufficient

Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation

Present claims and findings, emphasize key points in a focused, coherent manner with evidence, sound reasoning, and well-chosen details

Use appropriate eye contact, adequate volume, and clear pronunciation

Write arguments to support claims with reasons and evidence

Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information

Write narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured event sequences

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

# 8

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### Mathematics

Understand slope and relate linear equations in two variables to lines in the coordinate plane

Solve linear equations and pairs of linear equations and write equations to solve related word problems

Understand functions as rules and using linear functions to model relationships

Analyze statistical relationships by using a best-fit line

Work with positive and negative exponents, square root and cube root symbols, and scientific notation

Understand congruence and similarity using physical models, transparencies, or geometry software

Understanding and applying the Pythagorean Theorem to solve problems

### Science

#### *Next Generation Science Standards (NGSS)*

Develop models to describe both simple and complex molecules

Analyze and interpret data on the properties of substances before and after they interact to determine if a chemical reaction has occurred

Construct, test, and modify a device that either releases or absorbs thermal energy

Design, construct, and test a device that either minimizes or maximizes thermal energy transfer

Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects

Construct and interpret tables and graphs to describe the relationships of kinetic energy to the mass and speed of an object

# 8

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Collect data to provide evidence for how air masses result in changes in weather conditions

Analyze and interpret data on natural hazards to forecast future catastrophic events

Develop and use a model to describe patterns of atmospheric and oceanic circulation that determine regional climates

Clarify evidence of the factors that have caused the rise in global temperatures over the past century

Design a method for monitoring and minimizing a human impact on the environment

Support an explanation for how animal behaviors and plant structures affect the probability of successful reproduction

Evaluate competing design solutions for maintaining ecosystems

### Social Studies

Examine primary and secondary sources to write about the political, economic, and cultural history of the United States from the 1790s through the Reconstruction Era

Investigate the evolution of the political system as expressed in the Constitution

Analyze how America became a diverse society as a result of immigration and the consequences of cultural interactions

Use geographic tools to examine issues associated with settlement patterns and regional growth

Examine interdependence, trade, and economic growth during this period and how changes in technology affected production and consumption

Study the emerging foreign policy, industrialization, the western movement, and the policies and people responsible for the abolition of slavery

Use historical thinking skills to study the events, places, and people within the historical period of 1790 through the Reconstruction Era