



# ARKANSAS REFRIGERATOR CURRICULUM FOR EIGHTH GRADE



## ENGLISH LANGUAGE ARTS \*

*Aligned to Common Core State Standards*

- Identify what a reading selection explicitly says and draw inferences based on evidence from the text
- Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot
- Evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient
- Connect information and ideas efficiently and effectively in writing
- Analyze the purpose of information presented in diverse media formats, such as video clips or interactive maps
- Evaluate the advantages and disadvantages of using different mediums (such as print, or digital text, video, or multimedia) to present a particular topic or idea
- Participate in discussions on various topics, texts, and issues by expressing ideas and building on the ideas of others
- Introduce a topic clearly, previewing what is to follow, and develop the topic with relevant, well chosen facts, definitions, concrete details, quotations, or other information and provide a concluding statement or section that supports the information or explanation when writing informative texts
- Organize ideas, concepts, and information into broader categories
- Develop a large vocabulary of multi-use academic words and phrases; use precise language and subject-specific vocabulary

## MATHEMATICS \*

*Aligned to Common Core State Standards*

- Understand that every rational number (e.g.,  $\frac{1}{2}$ , 0.3, 2, or -2) can be written as a decimal, but that the decimal form of an irrational number (e.g.,  $\sqrt{2}$ ) is both non-repeating and infinite
- Know and apply the properties of integer exponents (e.g., positive numbers, negative numbers, or 0) to write equivalent expressions (e.g.,  $4^2 \times 4^3 = 4^5$ )
- Determine the value of square roots of small perfect squares (e.g.,  $\sqrt{49} = 7$ ) and cube roots of small perfect cubes (e.g.,  $\sqrt[3]{64} = 4$ )
- Understand the connections between proportional relationships, lines, and linear equations
- Graph proportional relationships and interpret the unit rate as the *slope* (how steep or flat a line is)
- Analyze and solve linear equations (equations that make a straight line when they are graphed, such as  $y=2x+1$ ) and systems of linear equations involving two variables
- Define, evaluate, and compare functions, and use functions to model relationships between quantities
- Understand that a function is a rule that assigns to each value of  $x$  exactly one value of  $y$ , such as  $y=2x$ , a rule that would yield such ordered pairs as (-2,-4), (3,6), and (4,8)
- Compare the properties of two functions represented in different ways (e.g., table, graph, equation, description)

- Use physical models, transparencies, or other tools to show that similar objects have the same shape but different sizes (e.g., a small square magnified into a larger square) and determine congruence (when shapes are of equal size and shape)
- Verify the properties of rotations, reflections, and translations and describe their effects on two-dimensional figures using coordinates
- Learn and apply the Pythagorean Theorem (an equation relating the lengths of the sides of a right triangle:  $a^2 + b^2 = c^2$ )
- Solve problems involving the volume of cylinders, cones, and spheres
- Investigate patterns of association and analysis of two variables

You are your child's first and most important teacher. We value your support in building a solid foundation to prepare your child for school. This is a list of concepts and skills that will help your child be successful in eighth grade. **This list is only a sample and does not include everything that will be taught throughout the year.**

\* Adapted from the Council of the Great City Schools Parent Roadmaps to Common Core Standards: <http://www.cgcs.org/domain/36>  
Additional resource: National PTA <http://www.pta.org/4446.htm>

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## SCIENCE

*Aligned to Arkansas Curriculum Frameworks*

- Actively investigate topics of interest, suggestions include the following:
  - Investigate elements of weather using common weather devices (e.g., thermometer, barometer, anemometer, computer weather models)
  - Identify examples of potential and kinetic energy
  - Investigate characteristics of waves (e.g., wavelength, frequency, amplitude)
  - Demonstrate that magnets have force fields using magnets and iron filings)
  - Investigate the permeability of various types of soil (e.g., clay, sand, potting soil)
- Research the influence of global water currents on regional weather
- Distinguish between a physical change and a chemical change and identify examples of each
- Create atomic models of common elements
- Explain why inherited characteristics of living things depend on genes; use simple Punnett Squares to study genetic crosses
- Identify natural physiographic divisions on a map of Arkansas
- Learn about energy sources (e.g., coal, natural gas, gasoline, solar, water, nuclear), and their formation, usage, and problems
- Research the greenhouse effect including how human activity may influence climate change
- Use topographical maps to identify surface features (e.g., mountains, valleys)
- Research how the moon's gravity affects Earth's ocean tides

## SOCIAL STUDIES

*Aligned to Arkansas Curriculum Frameworks*

- Construct specialized maps using data (e.g., climate, population, political units, resources)
- Research the contributions of people of various backgrounds (e.g., racial, ethnic)
- Analyze the impact of ideas, information, and technology on global interdependence
- Analyze different forms of government
- Research individuals and their roles in changing governments
- Discuss the struggles of citizens in various countries to gain rights and freedoms (e.g., voting, speech)
- Analyze the influence of citizen participation on government
- Describe the changes in society following World Wars I and II
- Examine the impact of population growth on renewable and nonrenewable resources
- Describe the establishment of colonies as a result of the conquest of indigenous people
- Investigate influences on modern society of Enlightenment thinkers
- Investigate social and political reform movements
- Discuss the growth of technology resulting from the space race

- Investigate causes and effects of post-World War II conflicts
- Interpret documentary evidence from diaries, letters, and journals in order to construct sound debates or write arguments
- Examine push-pull factors on various regions (e.g., disease, resources, industrialization, technology)

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