

ENGLISH LANGUAGE ARTS

Reading:

Key Ideas and Details:

- Read closely to determine what the text says explicitly and make logical inferences from it: cite specific textual evidence when writing or speaking to support conclusions drawn from the text
- Determine central ideas or themes of a text and analyze their development, summarize the key supporting details and ideas

Craft and Structure:

- Analyze how and why individuals, events, and ideas develop and interact over the course of a text
- Interpret words and phrases as they are used in a text
- Analyze the structure of texts
- Assess how point of view of purpose shapes the content and style of a text

Integration:

- Integrate and evaluate content presented in diverse formats and media
- Delineate and evaluate the argument and specific claims in a text
- Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take
- Read and comprehend complex literary and informational texts independently and proficiently

Writing:

- Produce clear and coherent writing in (arguments, informative/explanatory, and narrative) which the development, organization, and style are appropriate to task, purpose and audience
- Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach
- Use technology, including the internet to produce and publish writing and to interact and collaborate with others
- Conduct short as well as more sustained research projects based on focused questions demonstrating the understanding of the subject under investigation

- Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source
- Draw evidence from literary or informational texts to support analysis, reflection, and research
- Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences

Speaking and Listening:

- Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively
- Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally
- Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric
- Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience
- Adapt speech to a variety of contexts and communicative tasks, demonstrating command of the formal English when indicated or appropriate

MATHEMATICS

The Number System:

- Know that there are numbers that are not rational, and approximate them by rational Numbers

Expressions and Equations:

- Work with radicals and integer exponents
- Understand the connections between proportional relationships, line, and linear Equations
- Analyze and solve linear equations and pairs of simultaneous linear equations

Functions:

- Define, evaluate, and compare functions
- Use functions to model relationships between quantities

Geometry:

- Understand congruence and similarity using physical models, transparencies, or geometry software
- Understand apply the Pythagorean Theorem
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres

Statistics and Probability:

- Investigate patterns of association in bivariate data

SCIENCE AND TECHNOLOGY

Earth and Space Sciences:

- Develop and use a model of the Earth-sun system to explain the cyclical pattern of seasons,
- Explain the role of gravity in ocean tides, the orbital motions of planets, their moons, and asteroids in the solar system
- Develop and use a model to illustrate that energy from the Earth's interior drives convection which cycles Earth's crust
- Interpret basic weather data to identify patterns
- Describe how interactions involving the ocean affect weather and climate on a regional scale
- Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century

Life Science:

- Construct a scientific explanation based on evidence for how environmental and genetic factors influence and growth of organisms
- Describe that food molecules are broken down and rearranged through chemical reactions
- Develop and use a model to describe that structural changes to genes may or may not result in changes to proteins
- Develop and use a model to describe how asexual reproduction results in offspring with genetic variation
- Communicate through writing and in diagrams that chromosomes contain many distinct genes Illustrate that each gene holds the instructions for the production of specific proteins
- Develop and use a model to show that in sexually reproducing organisms individuals have two of each chromosome
- Explain the mechanism of natural selection.

Provide evidence that natural selection occurs over many generations

- Synthesize and communicate information about artificial selection

Physical Science:

- Develop a model to describe that atoms combine in a multitude of ways
- Analyze and interpret data on the properties of substances to determine if a chemical reaction has occurred
- Develop a model that describes and predicts changes when thermal energy is added or removed
- Use a model to explain the substances are rearranged during a chemical reaction to form new molecules with new properties
- Present evidence to support the claims that: a. substance are composed of molecules, compounds or atoms; and b. atoms form molecules or compounds
- Develop a model that demonstrates Newton's third law
- Provide evidence that the change in an object's motion depends on the sum of forces on the object and the mass of the object

Technology/Engineering:

- Recognize that materials maintain their composition under various kinds of physical processing
- Describe how a product can be created using the basic processes in manufacturing systems
- Recognize that processes that transform materials into products can be controlled by humans or Computers

SOCIAL STUDIES

History And Geography:

- Apply the skills of prekindergarten through grade seven
- Identify multiple ways to express time relationships and dates. Identify countries that use a different calendar from one used in the U. S. and explain the basis for the differences
- Interpret and construct timelines that show how events and eras in various parts of the world are related to one another
- Interpret how a cause and effect relationship is different from a sequence or correlation of events
- Distinguish between long-term and short-term

cause and effect relationships

- Show connections, causal and otherwise, between particular historical events and ideas and larger social, economic, and political trends and developments
- Interpret the past within its own historical context rather than in terms of present-days norms and values
- Distinguish intended from unintended consequences
- Distinguish historical fact from opinion
- Using historical maps, locate the boundaries of the major empires of world history at the height of their powers

Civics and Government:

- Define and use correctly the following words and terms: Magna Carta, parliament, habeas corpus, monarchy, and absolutism

Economics:

- Define and use correctly mercantilism, feudalism, economic growth, and entrepreneur
- Explain how people or communities examine and weigh the benefits of each alternative when making a choice and that opportunity costs are those benefits that are given up once one alternative is chosen
- Explain how financial markets, such as the stock market, channel funds from savers to investors
- Define and use correctly gross domestic
- Explain how competition among sellers lowers costs and prices, and encourages producers to produce more
- Describe how the earning of workers are affected by the market value of the product produced and worker skills
- Identify the cause of inflation, and explain who benefits from inflation and who suffers from inflation
- Define and distinguish between absolute and comparative advantage, and explain how most trade occurs because of comparative in the production of a particular good or service
- Explain how changes in exchange rates affect balance of trade and the purchasing power of people in the United States and other countries
- Differentiate between fiscal and monetary Policy

Economics:

- Explain the basic economic functions of the government in the economy of the United States
- Examine the development of the banking system in the United States, and describe the organization and functions of the Federal Reserve System
- Identify and describe laws and regulations adopted in the United States to promote economic competition
- Analyze how federal tax and spending policies affect the national budget and the national debt

Gardner Public Schools

CURRICULUM
GUIDE
GRADE 8

The purpose of this guide is to identify the major topics, concepts, and skills that are considered essential for this grade level as identified by the Massachusetts Curriculum

Gardner Public Schools

70 Waterford Street
Gardner, MA 01440
Phone: 978-632-1000

