

DEAR PARENTS AND CAREGIVERS:

We recognize that you are your child's first and most important teacher and that it is our responsibility to build on your efforts by providing the rich set of learning experiences outlined in this curriculum digest.

Our curriculum follows the hundreds of pages of the Massachusetts Department of Education Curriculum Frameworks. This curriculum digest, therefore, is only a summary, but we believe the summary paints a vivid picture of the abilities and skills your child will develop this year. If you would like additional details about our curriculum expectations, please ask your child's teacher or download copies of the Massachusetts Frameworks from the Department of Education website at: <http://www.doe.mass.edu>.

As we deliver this curriculum we strive to provide all students with the skills and knowledge that they need to be successful in a complex world. We do this by providing an educational environment that is supportive of individual differences and where all people are valued and respected. Finally, we recognize how critical the parents and community members are to achieving this mission.

We look forward to communicating with you while we help your child to have a productive and rewarding year.



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Assistant Superintendent of Curriculum,
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ENGLISH LANGUAGE ARTS

Language *Students will:*

- Pose questions, listen to the ideas of others, and contribute their own information or ideas in group discussions or interviews in order to acquire new knowledge.
- Make oral presentations that demonstrate appropriate consideration of audience, purpose, and the information to be conveyed.
- Understand and acquire new vocabulary and use it correctly in reading and writing.
- Describe, analyze, and use appropriately formal and informal English.

Reading and Literature *Students will:*

- Identify the basic facts and main ideas in a text and use them as the basis for interpretation.
- Identify, analyze, and apply knowledge of the characteristics of different genres, including dramatic literature.
- Identify, analyze, and apply knowledge of theme in a literary work, the structure and elements of fiction, and the purposes, structure, and elements of nonfiction or informational materials and provide evidence from the text to support their understanding.
- Relate literary fiction or nonfiction to its historical or modern-day equivalent.
- Identify, analyze, and apply elements of poetry and provide supporting evidence to enhance understanding.
- Analyze an author's words and their effect on imagery, mood, and tone.
- Recognize elements of myths, traditional narratives, and classical literature.

Composition *Students will:*

- Write with clear focus, coherent organization, and sufficient detail for different audiences and purposes.
- Demonstrate improvement in organization, content, paragraph development, level of detail, style, tone, and word choice (diction) in their compositions after revisions.
- Use knowledge of Standard English conventions in their writing, revising, and editing.
- Gather information from a variety of sources, analyze and evaluate the quality of the information they obtain, and use it to answer their own questions.

Media *Students will:*

- Design and create a variety of media including audio, video, television, multimedia, Internet, and emerging technologies with clear vision, adequate detail, and appropriate consideration of audience, purpose, and medium.

Major Projects / Events

- Three Writing Prompts per Year
- Summer Reading Program

MATHEMATICS

Number Sense and Operations *Students will:*

- Define, compare, order, and apply frequently used irrational numbers, such as $\sqrt{2}$ and π .
- Demonstrate an understanding of absolute value, e.g., $|-3| = |3| = 3$.
- Apply the rules of powers and roots to the solution of problems.
- Use the associative, commutative, and distributive properties; properties of the identity and inverse elements and the notion of closure of a subset of rational numbers under an operation.
- Use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.
- Select and use appropriate operations to solve problems with rational numbers (including negatives).

Patterns, Relations, and Algebra *Students will:*

- Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, en possible, symbolic expressions. Include arithmetic and geometric progressions.
- Evaluate simple algebraic expressions for given variable values.
- Demonstrate an understanding of the identity $(-x)(-y)=xy$. Use this identity to simplify algebraic expressions.
- Create and use symbolic expressions and relate them to verbal, tabular, and graphical representations.
- Identify the slope of a line as a measure of its steepness and as a constant rate of change from its table of values, equation, or graph and apply the concept of slope to the solution of problems.
- Identify the roles of variables within an equation, expressing y as a function of x with parameters m and b .
- Set up and solve linear equations and inequalities with one or two variables using algebraic methods, models, and / or graphs.
- Explain and analyze how a change in one variable results in a change in another variable in functional relationships.
- Use linear equations to model and analyze problems involving proportional relationships with technology when appropriate.
- Use tables and graphs to represent and compare linear growth patterns. In particular, compare rates of change and x - and y -intercepts of different linear patterns.

Geometry *Students will:*

- Demonstrate an understanding of the Pythagorean theorem. Apply the theorem to the solution of problems.
- Predict the results of transformations on unmarked or coordinate plane and draw the transformed figure (e.g., predict how tessellations transform under translations, reflections, and rotations).

Measurement *Students will:*

- Use ratio and proportion (including scale factors) in the solution of problems, including problems involving similar plane figures and indirect measurement.
- Use models, graphs, and formulas to solve simple problems involving rates (e.g., velocity and density).

Data Analysis, Statistics, and Probability *Students will:*

- Select, create, interpret, and utilize various tabular and graphical representations of data (e.g., circle graphs, Venn diagrams, scatterplots, stem-and-leaf plots, box-and-whisker plots, histograms, tables, and charts).
- Differentiate between continuous and discrete data and ways to represent them.
- Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data. Use these notions to compare different sets of data.

SCIENCE

EARTH SCIENCE: *Students will:*

- Formulate a testable hypothesis.
- Design and conduct an experiment specifying variables to be changed, controlled and measured.
- Select appropriate tools and technology and make quantitative observations.
- Present and explain data and findings using multiple representations, including tables, graphs, mathematical and physical models, and demonstrations.
- Draw conclusions based on data or evidence presented in tables or graphs, and make inferences based on patterns or trends in the data.
- Communicate procedures and results using appropriate science and technology terminology.
- Offer explanations of procedures and critique and revise them.
- Understand and practice proper safety procedures in the science lab.

Mapping the Earth *Students will:*

- Recognize, interpret and create models of the earth's common physical features in various representations, including contour maps.

Earth's Structure *Students will:*

- Describe the layers of the solid earth.
- Describe the rock cycle and the processes that are responsible for the formations of igneous, sedimentary, and metamorphic rocks and compare the physical properties of these rocks.

Heat Transfer in the Earth System *Student's will:*

- Differentiate among radiation, conduction, and convection, the three mechanisms by which heat is transferred though the Earth's system.
- Explain the relationship among the energy provided by the sun, the global patterns of atmospheric movement, and the temperature differences among water, land, and atmosphere.

Earth's History *Students will:*

- Describe how the movement of the Earth's crustal plates causes both slow changes in the earth's surface (e.g., formation of mountains and ocean basins) and rapid ones (e.g., volcanic eruptions and earthquakes).
- Describe and give examples of ways in which the Earth's surface is built up and torn down by natural processes including deposition of sediments, rock formation, erosion, and weathering.
- Explain and give examples of how physical evidence, such as fossils and surface features of glaciations, supports theories that the Earth has evolved over time.
- Recognize that gravity is a force that pulls all things on or near the earth toward the center of the Earth and plays a major role in the formation of the planets, stars, and solar system and in determining their motion.

The Earth in the Solar System *Students will:*

- Describe lunar and solar eclipses, the observed moon phases, and tides and relate them to the relative positions of the Earth, Moon, and Sun.
- Compare and contrast properties and conditions of objects in the solar system to those on Earth.
- Explain how the tilt of the Earth and its revolution around the sun result in an uneven heating of the Earth, which in turn causes the seasons.
- Recognize that the universe contains billions of galaxies and that each galaxy contains billions of stars.

HISTORY/SOCIAL STUDIES

Theme: World History I: The world from the Fall of Rome through the Enlightenment

Topics

- The Emergence and Expansion of Islam, 600 to 1500 AD
- The Medieval Period in Europe, 500 to 1500 AD
- Two Worlds Meet: Christianity and Islam, 600 to 1500 AD
- The Renaissance, the Reformation, and European Exploration, 1400 to 1600
- The Growth and Decline of the Ottoman Empires, 1500 to 1700
- Continuity and Change in Asia, Africa, and Latin America to 1800
- The Scientific Revolution and the Enlightenment, 1600-1800

History and Geography *Students will:*

- Interpret and construct timelines that show how events and eras in various parts of the world are related to one another.
- Distinguish between long-term and short-term cause and effect relationships.
- Explain how a cause and effect relationship is different from a sequence or correlation of events.
- Show connections, casual 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 day norms and values.
- Distinguish historical fact from opinion.

Civics and Government *Students will:*

- Define and use correctly the following words and terms: Magna Carta, Parliament, habeas corpus, and absolutism (specific words and terms to be chosen based on pathway studied).

Economics *Students will:*

- Define and use correctly mercantilism, feudalism, economic growth, and entrepreneur.
- Explain how people or communities examine and weigh benefits of each alternative when making a choice and that “opportunity costs” are those benefits that are given up once one alternative is chosen.
- Define and distinguish between absolute and comparative advantage and explain how most trade occurs because of comparative advantage in the production of a particular good or service.
- Identify the causes of inflation and explain who benefits and who suffers from inflation.
- Explain how competition among sellers lowers costs and prices, and encourages producers to produce more.

Major Projects / Events

- Content related projects
- Content writing exhibits
- Projects addressing multiple intelligences

WELLNESS

Physical Education *Students will:*

- Use combinations of manipulative, locomotor, and non-locomotor skills to develop movement sequences and patterns, both individually and with others.
- Apply basic principles of training and appropriate guidelines of exercise to improve immediate and long-term physical fitness.
- Demonstrate responsible social behavior in physical activity settings.

Health *Students will:*

- Describe a healthy diet and adequate physical activity during the adolescent growth spurt.
- Analyze dietary intake and eating patterns.
- Acquire the knowledge and skills necessary to make effective personal decisions that promote their emotional, sexual, and reproductive health.
- Acquire the knowledge about emotions and physical health, the management of emotions, personality and character development, and social awareness.
- Acquire the knowledge and skills to be competent in making health-enhancing decisions regarding the use of medications and avoidance of substances.

TECHNOLOGY EDUCATION

Technology is the study of the human quest for solutions. Technology combines people, their ideas, tools and other resources to solve problems with, for example, survival, transportation, communication, and entertainment. Not to be confused with informational technology (IT), Technology Education is more concerned with skills in design and engineering

Topics

- Teamwork and interpersonal skills.
- Constructive work habits/values.
- Technological procedures (e.g. interpreting technical data, identifying problems).
- Technological capability (being able to DO).
- Understanding new uses of technology.
- Deciding on appropriate uses for technology.

Students will:

- Complete design and engineering projects in the fields of manufacturing, transportation, communication, construction, bioengineering, and energy conservation.
- Design projects using a variety of tools and skills, including machine tools, hand tools, measuring, sketching, and problem solving.

INFORMATION TECHNOLOGY

In all academic courses *Students will:*

- Communicate using a variety of media and formats.
- Locate, evaluate, analyze, and use information.
- Compile, organize, analyze, and synthesize information.
- Draw conclusions and make generalizations based on information gathered.
- Collaborate and cooperate in team efforts.
- Communicate locally and globally.
- Select appropriate tools to solve problems.
- Use technology in ethical and appropriate ways.

LIBRARY MEDIA

Students will:

- Acquire information problem-solving skills.
- Appreciate literature, fiction and non-fiction, and its ability to reflect on one’s own life and one’s place in the world.
- Acquire increasingly sophisticated information accessing, evaluating, and synthesizing skills from library resources-including electronic resources and the Internet.

ART

Students will:

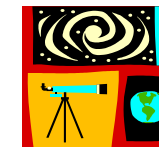
- Demonstrate knowledge of the methods, materials, and techniques unique to the visual arts.
- Create artwork in a variety of two-dimensional (2D) and three-dimensional (3D) media.
- Expand the repertoire of 2D and 3D art processes, techniques, and materials.
- Create artwork that demonstrates an awareness of the range and purpose of tools.
- Demonstrate appropriate use of vocabulary.
- Maintain the workspace, materials, and tools responsibly and safely.

INTRODUCTION TO SPANISH

Students will:

- Use the skills of listening, speaking, reading, and writing.
- Converse in the language to provide and obtain information, and express feelings and emotions.
- Understand and interpret ideas and information written or spoken in the language.
- Write and speak the language to present information, concepts, and ideas on a variety of topics.
- Gain knowledge and understanding of other cultures.
- Develop insight into the nature of language and culture by comparing their own language and culture with another.

MAYNARD PUBLIC SCHOOLS



A Curriculum Overview Your Child’s year in **EIGHTH GRADE**



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