

Course Title:	7th Grade Science
Grade(s):	7

Course Description
This dynamic, year-long 7th Grade General Science course provides an inquiry-based introduction to key scientific concepts across Earth Science, Physical Science, and Life Science, grounded in the Next Generation Science Standards (NGSS). Students will actively engage with the Science and Engineering Practices and Crosscutting Concepts to investigate phenomena, solve problems, and understand the interconnectedness of natural systems. The curriculum emphasizes critical thinking, data analysis, and using evidence to construct scientific explanations.
Approved Curricular Materials/Textbook(s)
Lab Aids: Geological Processes Chemistry of Materials Chemical Reactions Ecology

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Unit 1: Geological Processes	By the end of this unit, students will: • Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. • Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. • Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. • Construct a scientific explanation based on evidence for how the uneven	10 weeks (September - November)

	distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.	
Unit 2: Chemistry of Materials	By the end of this unit, students will: - Develop models to describe the atomic composition of simple molecules and extended structures. - Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. - Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.	9 weeks (November-January)
Unit 3: Chemical Reactions	By the end of this unit, students will: - Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. - Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. - Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes. - Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. - Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	7 weeks (January-March)

Unit 4: Ecology	By the end of this unit, students will: ● Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. ● Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. ● Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. ● Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. ● Evaluate competing design solutions for maintaining biodiversity and ecosystem services. ● Engage in March Mammal Madness, a widely popular science-simulated bracket competition inspired by basketball's March Madness, where teams of scientists research and simulate battles between mammals to determine a champion, engaging students and the public in biology, ecology, and evolution through fun, narrative-driven competitions and brackets.	12 weeks (March-June)
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