

## Science 6

State Standard Number	State Standard Area/Description	Unit Name	Course Topic Description
P	Physical Science		
P.1	All matter is made of atoms, which are far too small to see directly through a light microscope. Elements have unique atoms and thus, unique properties. Atoms themselves are made of even smaller particles	Matter and the Periodic Table	Pages 8-11 (Includes discussion assignment about atoms)
P.1.a	Identify evidence that suggests there is a fundamental building block of matter	Matter and the Periodic Table	Page 11 "Atoms Discussion" assignment
P.1.b	Use the particle model of matter to illustrate characteristics of different substances	Matter and the Periodic Table	Pages 12-15 (Includes periodic table interactive)
P.1.c	Develop an evidence based scientific explanation of the atomic model as the foundation for all chemistry		
P.1.d	Find and evaluate appropriate information from reference books, journals, magazines, online references, and databases to compare and contrast historical explanations for the nature of matter		
P.2	Atoms may stick together in well-defined molecules or be packed together in large arrays. Different arrangements of atoms into groups compose all substances	Elements, Molecules, and Chemical Reactions	Pages 7-10 (Including interactive game/quiz)
P.2.a	Explain the similarities and differences between elements and compounds	Elements, Molecules, and Chemical Reactions	Page 7
P.2.b	Identify evidence suggesting that atoms form into molecules with different properties than their components		

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P.2.c	Find and evaluate information from a variety of resources about molecules	Element Research	Element Research Paper
P.3	The physical characteristics and changes of solid, liquid, and gas states can be explained using the particulate model	States of Matter	Page 8 Interactive
P.3.a	Explain how the arrangement and motion of particles in a substance such as water determine its state	States of Matter	Pages 8-9 Interactives
P.3.b	Distinguish between changes in temperature and changes of state using the particle model of matter	States of Matter	Page 12
P.4	Distinguish among, explain, and apply the relationships among mass, weight, volume, and density		
P.4.a	Explain that the mass of an object does not change, but its weight changes based on the gravitational forces acting upon it	Matter and the Periodic Table	Pages 5-7 (Including Mass vs. Weight assignment)
P.4.b	Predict how changes in acceleration due to gravity will affect the mass and weight of an object		
P.4.c	Predict how mass, weight, and volume affect density		

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P.4.d	Measure mass and volume, and use these quantities to calculate density		
P.4.e	Use tools to gather, view, analyze, and report results for scientific investigations about the relationships among mass, weight, volume, and density		
L	Life Science		
L.1	Changes in environmental conditions can affect the survival of individual organisms, populations, and entire species	Interactions in the Environment	Pages 6-7 (Including interactive)
L.1.a	Interpret and analyze data about changes in environmental conditions - such as climate change - and populations that support a claim describing why a specific population might be increasing or decreasing		
L.1.b	Develop, communicate, and justify an evidence-based explanation about how ecosystems interact with and impact the global environment		
L.1.c	Model equilibrium in an ecosystem, including basic inputs and outputs, to predict how a change to that ecosystem such as climate change might impact the organisms, populations, and species within it such as the removal of a top predator or introduction of a new species		

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L.1.d	Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate how environmental conditions affect the survival of individual organisms		
L.2	Organisms interact with each other and their environment in various ways that create a flow of energy and cycling of matter in an ecosystem	Energy Flow in the Environment	Pages 6-8 (Including journal assignment)
L.2.a	Develop, communicate, and justify an evidence-based explanation about why there generally are more producers than consumers in an ecosystem		
L.2.b	Design a food web diagram to show the flow of energy through an ecosystem	Energy Flow in the Environment	Page 8 Journal Assignment
L.2.c	Compare and contrast the flow of energy with the cycling of matter in ecosystems	Ecology Unit Project	The Unit project is to research one geochemical cycle and describe the energy flow in the cycle
E	Earth Systems Science		
E.1	Complex interrelationships exist between Earth's structure and natural processes that over time are both constructive and destructive		
E.1.a	Gather, analyze, and communicate an evidence-based explanation for the complex interaction between Earth's constructive and destructive forces		

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E.1.b	Gather, analyze and communicate evidence from text and other sources that explains the formation of Earth's surface features		
E.1.c	Use or create a computer simulation for Earth's changing crust		
E.2	Water on Earth is distributed and circulated through oceans, glaciers, rivers, ground water, and the atmosphere	Water Cycle	Pages 7-10 (Including interactive placing correct names of steps of water cycle)
E.2.a	Gather and analyze data from a variety of print resources and investigations to account for local and world-wide water circulation and distribution patterns		
E.2.b	Use evidence to model how water is transferred throughout the earth		
E.2.c	Identify problems, and propose solutions related to water quality, circulation, and distribution - both locally and worldwide		
E.2.d	Identify the various causes and effects of water pollution in local and world water distributions		
E.2.e	Describe where water goes after it is used in houses or buildings	The Water Cycle	Page 8

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E.3	Earth's natural resources provide the foundation for human society's physical needs. Many natural resources are nonrenewable on human timescales, while others can be renewed or recycled	Renewable and Non-Renewable Energy	Pages 6 and 11
E.3.a	Research and evaluate data and information to learn about the types and availability of various natural resources, and use this knowledge to make evidence-based decisions		
E.3.b	Identify and evaluate types and availability of renewable and nonrenewable resources	Renewable and Non-Renewable Energy	"What Can I Do?" Activity
E.3.c	Use direct and indirect evidence to determine the types of resources and their applications used in communities		
E.3.d	Research and critically evaluate data and information about the advantages and disadvantages of using fossil fuels and alternative energy sources		