

Month	SOL	Content	Skills
August-early September	<b>6.1</b>	Unit 1: Introduction to Science  P.H. Science Explorer 6 Pgs.4-15; 642-647; 655-657	<ul style="list-style-type: none"> <li>• Learn chemistry equipment names &amp; uses</li> <li>• Identify safety symbols</li> <li>• Practice good safety rules</li> <li>• Label the parts of a microscope</li> <li>• List and apply the steps involved in the scientific method</li> <li>• Recognize science processes</li> <li>• Learn key vocabulary—science, scientific inquiry, observation, inference, etc. (see page 4 of the teacher’s edition)</li> <li>• Practice Reading Strategy: Physical and Chemical Changes (#1 of 12)</li> </ul>
September- October	6.1 6.2 <b>6.4</b> 6.9	Unit 2: Matter and the Environment  Chapter 1—Introduction. To Matter (pgs.18-47; 644 & 645; 660 & 661) <ul style="list-style-type: none"> <li>• Describing Matter and Energy</li> <li>• Measuring Matter</li> <li>• Particles of Matter</li> <li>• Elements From Earth</li> </ul>	Chapter 1: <ul style="list-style-type: none"> <li>• Define matter and energy</li> <li>• Classify substances by their physical and chemical properties</li> <li>• Explain differences between elements, compounds, and mixtures</li> <li>• Distinguish between physical and chemical changes</li> <li>• Identify different forms of energy, and give examples of energy transformations that affect matter</li> <li>• Explain the difference: weight and mass</li> <li>• Calculate the density of substances using SI units for mass and volume</li> <li>• Identify atoms as the smallest particles of an element</li> </ul>

	<p>6.1 6.4 <b>6.5</b></p>	<p>Chapter 2—Water and Solutions (pgs.50-67)</p> <ul style="list-style-type: none"> <li>• The Properties of Water</li> <li>• Understanding Solutions</li> </ul>	<ul style="list-style-type: none"> <li>• Describe Dalton’s theory of atoms</li> <li>• Identify chemical bonds as the force holding atoms together in molecules</li> <li>• Describe how the density of gold allows it to be panned</li> <li>• Explain that a chemical reaction is needed to obtain an element from one of its compounds</li> <li>• Learn key vocabulary—matter, energy, weight, mass, atom, nucleus, etc. (see pgs.18, 28, 35, and 40 of the teacher’s edition)</li> </ul> <p>Chapter 2:</p> <ul style="list-style-type: none"> <li>• Describe the physical and chemical properties of water</li> <li>• Explain how water dissolves other polar substances</li> <li>• Identify the three states in which water exists on Earth</li> <li>• Define and compare solutions, suspensions, and colloids</li> <li>• Explain what happens to particles of a solute when a solution forms</li> <li>• Describe how solutes affect the freezing and boiling points of solvents</li> <li>• Learn key vocabulary—polar molecule, surface tension, suspension, solute, etc. (see pgs.50, 59 of the teacher’s edition)</li> <li>• Practice Reading Strategy: Elements and</li> </ul>
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<p>November- mid January</p>	<p>6.1 6.5 6.7 6.9</p>	<p>Unit 3: Earth’s Changing Surface</p> <p>Chapter 4—Weathering and Soil Formation (pgs.92-123)</p> <ul style="list-style-type: none"> <li>• Rocks and Weathering</li> <li>• Soil Formation and Composition</li> <li>• Conserving Land and Soil</li> <li>• Waste Disposal and Recycling</li> </ul>	<p>Chapter 4:</p> <ul style="list-style-type: none"> <li>• Identify what causes mechanical weathering</li> <li>• Identify what causes chemical weathering</li> <li>• Describe the factors that determine how fast weathering occurs</li> <li>• Describe the composition of soil</li> <li>• Explain how soil is formed and how soil horizons develop</li> <li>• Identify the roles of plants and animals in soil formation</li> <li>• Describe some major forms of land use</li> <li>• Explain why soil is a valuable resource</li> <li>• List ways that soil can be lost or destroyed</li> <li>• Identify some ways that soil can be conserved</li> <li>• Describe methods of managing solid waste</li> <li>• List the four major types of recyclable waste</li> <li>• Identify methods for managing hazardous wastes</li> <li>• Learn key vocabulary—weathering, erosion, soil, bedrock, development, desertification, municipal solid waste, leachate, etc. (see pgs.92,101,109,115 of the teacher’s edition)</li> </ul>
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	6.1 6.2 6.3 6.5 6.7	Chapter 5—Erosion and Deposition (pgs.126-163) <ul style="list-style-type: none"> <li>• Changing Earth’s Surface</li> <li>• Water Erosion</li> <li>• The Force of Moving Water</li> <li>• Glaciers</li> <li>• Waves</li> <li>• Wind</li> </ul>	Chapter 5: <ul style="list-style-type: none"> <li>• Describe the processes that wear down and build up Earth’s surface</li> <li>• Identify the force that pulls rock and soil down slopes</li> <li>• Explain how water erosion is mainly responsible for shaping Earth’s land surface</li> <li>• Describe some land features formed by water erosion including groundwater erosion</li> <li>• Describe land features formed when rivers and streams deposit sediment</li> <li>• Describe the features of a river system</li> <li>• Describe how water is able to do work</li> <li>• Explain how sediment enters rivers and streams</li> <li>• List the factors that affect a river’s ability to erode and carry sediment</li> <li>• Name and describe two kinds of glaciers</li> <li>• Describe two processes by which glaciers erode land</li> <li>• Explain how glaciers deposit sediments, and role of the ice ages in glacial erosion</li> <li>• Identify what gives ocean waves their energy</li> <li>• Describe how waves shape a coast and create landforms</li> <li>• Describe the process by which wind causes erosion</li> </ul>
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	<p>6.1 6.8</p>	<p>Chapter 6—Earth’s Land Resources (pgs.166-189)</p> <ul style="list-style-type: none"> <li>• Exploring Earth’s Surface</li> <li>• Topographic Maps</li> <li>• Earth’s Land Biomes</li> </ul>	<ul style="list-style-type: none"> <li>• Identify the features resulting from erosion and deposition by wind</li> <li>• Learn key vocabulary—erosion, sediment, runoff, rill, energy, potential energy, glacier, beach, sand dune, etc. (see pgs.126,132,145,149,154,158 of the teacher’s edition)</li> </ul> <p>Chapter 6:</p> <ul style="list-style-type: none"> <li>• List the factors that determine the topography of Earth’s surface</li> <li>• Name and describe the main types of landforms</li> <li>• Identify the four “spheres” that make up Earth’s surface</li> <li>• Name and describe the layers that make up Earth’s structure</li> <li>• Describe a topographic map</li> <li>• Explain how elevation, relief, and slope are shown on topographic maps</li> <li>• Identify the Global Positioning System</li> <li>• List and describe Earth’s major land biomes</li> <li>• List and describe Earth’s major freshwater and ocean biomes</li> <li>• Learn key vocabulary—topography, map, biome, etc. (see pgs.166,173,178 of the teacher’s edition)</li> </ul>
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	<p>6.1 6.5 6.7 6.9</p>	<p>Unit 4: Earth's Waters</p> <p>Chapter 7—Fresh Water (pgs.192-221)</p> <ul style="list-style-type: none"> <li>• The Water Cycle</li> <li>• Water on the Surface</li> <li>• Water Underground</li> <li>• Wetland Environments</li> </ul>	<p>Chapter 7:</p> <ul style="list-style-type: none"> <li>• Identify how Earth's water is distributed among saltwater and freshwater sources</li> <li>• Describe how Earth's water moves through the water cycle</li> <li>• Give examples of how people and other living things use water</li> <li>• Describe a river system and how water flows into it</li> <li>• Identify conditions that cause floods and how floods can be controlled</li> <li>• Explain how ponds and lakes form</li> <li>• Describe pond and lake habitats and process of lake turnover</li> <li>• Explain how icebergs form and why they are dangerous to ships</li> <li>• Describe springs and how water moves through underground layers of soil and rock</li> <li>• Explain what an aquifer is and how people obtain water from an aquifer</li> <li>• Identify features of wetlands that make them suitable habitats for living things</li> <li>• Explain what a wetland is and how wetlands help control flooding</li> <li>• Learn key vocabulary—(water vapor, tributary, pore, wetland, etc. (see pgs.192,200,210,216 of the teacher's edition)</li> </ul>
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	6.1 6.2 6.5 6.9	Chapter 8—Freshwater Resources (pgs.226-257) <ul style="list-style-type: none"> <li>• Water to Drink</li> <li>• Balancing Water Needs</li> <li>• Freshwater Pollution</li> <li>• Water as an Energy Resource</li> </ul>	Chapter 8: <ul style="list-style-type: none"> <li>• Describe sources of drinking water and how it is treated and distributed</li> <li>• Explain what happens to wastewater</li> <li>• Describe conditions that can result in a water shortage and list sources of fresh water for the future</li> <li>• Explain how water can be conserved</li> <li>• Describe what water pollution is and list some of its sources</li> <li>• Explain how runoff affects ponds and streams</li> <li>• Describe how pollution can be prevented and how polluted water can be cleaned up</li> <li>• Explain how moving water can produce electricity</li> <li>• Describe the benefits and limitations of hydroelectric power</li> <li>• Describe the impact of dams</li> <li>• Learn key vocabulary—(water quality, drought, water pollution, kinetic energy, etc. (see pgs.226,236,243,251 of the teacher’s edition)</li> </ul>
	6.1 6.2 6.3 6.4	Chapter 9—Ocean Motions (pgs.260-287) <ul style="list-style-type: none"> <li>• Wave Action</li> </ul>	Chapter 9: <ul style="list-style-type: none"> <li>• Describe the characteristics of waves and explain how they form</li> <li>• Describe how waves change near the shore</li> <li>• Identify the effects of waves on beaches</li> </ul>

<p>Late January-early April</p>	<p>6.5</p>	<ul style="list-style-type: none"> <li>• Tides</li> <li>• Ocean Water Chemistry</li> <li>• Currents and Climates</li> </ul>	<p>and coastlines</p> <ul style="list-style-type: none"> <li>• Explain what causes tides and the daily and monthly tide cycles</li> <li>• Describe how people use the energy of tides</li> <li>• Identify the salinity, gas content, and temperature of ocean water</li> <li>• Describe how ocean conditions change with depth</li> <li>• Identify the forces that cause surface currents and deep currents</li> <li>• Describe how surface currents affect climate on land</li> <li>• Describe deep currents, upwelling, and El Nino</li> <li>• Learn key vocabulary—(wave, tide, salinity, current, etc. (see pgs.260,266,271,278 of the teacher’s edition)</li> </ul>
	<p>6.1 6.5 6.7 6.9</p>	<p>Chapter 10—Ocean Zones (pgs.290-327)</p> <ul style="list-style-type: none"> <li>• Exploring the Ocean</li> <li>• Life at the Ocean’s Edge</li> <li>• The Neritic Zone and Open Ocean</li> <li>• Resources From the Ocean</li> </ul>	<p>Chapter 10:</p> <ul style="list-style-type: none"> <li>• Describe the exploration of the ocean and its floor and identify factors that make ocean-floor research difficult</li> <li>• Describe features of the ocean floor and the processes that have shaped it</li> <li>• Describe the factors that affect where ocean organisms live</li> <li>• Identify the conditions that organisms in the rocky intertidal zone must overcome</li> </ul>

	<p>6.1 6.4 6.6 6.9</p>	<p>Unit5: Weather and Climate</p> <p>Chapter 11—The Atmosphere (pgs.330-359)</p> <ul style="list-style-type: none"> <li>• The Air Around You</li> <li>• Air Pollution</li> <li>• Air Pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Name and describe the major types of coastal environments</li> <li>• Describe conditions in the neritic zone that support organisms and two neritic zone habitats—kelp forests and coral reefs</li> <li>• Describe conditions in the open ocean and identify where algae live</li> <li>• Explain how hydrothermal vents support organisms</li> <li>• Explain how the supply of fish in a fishery changes from year to year and list sources of water pollution</li> <li>• Identify the ocean’s living and nonliving resources and explain how they can be protected</li> <li>• Learn key vocabulary—sonar, plankton, neritic zone, aquaculture, etc.(see pgs.290,298,304,311 of the teacher’s edition)</li> </ul> <p>Chapter 11:</p> <ul style="list-style-type: none"> <li>• State how the atmosphere is important to living things</li> <li>• Identify the gases that are present in Earth’s atmosphere</li> <li>• Identify and describe outdoor and indoor</li> </ul>
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	<p>6.1 6.2 6.3 6.4 6.5 6.6 6.7 6.9</p>	<p>Chapter 14—Climate and Climate Change (pgs.432-465)</p> <ul style="list-style-type: none"> <li>• What Causes Climate?</li> <li>• Climate Regions</li> <li>• Long-Term Changes in Climate</li> <li>• Global Changes in the Atmosphere</li> </ul>	<ul style="list-style-type: none"> <li>• Learn new vocabulary—air mass, storm, flash flood, meteorologist, etc. (see pgs.396,403,415,419 of the teacher’s edition)</li> </ul> <p>Chapter 14:</p> <ul style="list-style-type: none"> <li>• Identify the factors that influence temperature and precipitation</li> <li>• Explain what causes the seasons</li> <li>• Identify factors used to define climates</li> <li>• Describe the different types of climate regions</li> <li>• Identify how scientists can learn about ancient climates</li> <li>• Describe how Earth’s surface changes during an ice age</li> <li>• Explain the theories that have been proposed to explain natural climate change</li> <li>• Describe the greenhouse effect and how human activities may be affecting the temperature of Earth’s atmosphere</li> <li>• Describe how human activities have affected the ozone layer</li> <li>• Learn key vocabulary—climate, rain forest, ice age, greenhouse gas, etc. (see pgs.432,442,454,459 of the teacher’s edition)</li> </ul>
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<p>April-June</p>	<p>6.1 6.2 6.4</p> <p>6.1 6.2 6.9</p>	<p>Unit 6: Energy and the Environment</p> <p>Chapter 15—Energy and Power (pgs.468-497)</p> <ul style="list-style-type: none"> <li>• The Nature of Energy</li> <li>• Energy Conversion and Conservation</li> <li>• Photosynthesis and Fossil Fuels</li> <li>• Power</li> </ul> <p>Chapter 16—Energy Resources (pgs.500-527)</p> <ul style="list-style-type: none"> <li>• Energy From Fossil Fuels</li> <li>• Renewable Sources of Energy</li> <li>• Nuclear Energy</li> <li>• Conserving Energy</li> </ul>	<p>Chapter 15:</p> <ul style="list-style-type: none"> <li>• Describe the relationship between work and energy</li> <li>• Define and calculate potential and kinetic energy</li> <li>• List different forms of energy</li> <li>• Describe the conversions between different forms of energy</li> <li>• State the law of conservation of energy</li> <li>• Describe the energy conversion that occurs during photosynthesis</li> <li>• Explain how fossil fuels contain energy that came from the sun</li> <li>• Define and calculate power</li> <li>• Compare energy and power</li> <li>• Learn key vocabulary –work, energy conversion, photosynthesis, power, etc. (see pgs.468,476,482,490 of the teacher’s edition)</li> </ul> <p>Chapter 16:</p> <ul style="list-style-type: none"> <li>• Explain how fuels provide energy</li> <li>• List the three major fossil fuels</li> <li>• Explain why fossil fuels are considered nonrenewable resources</li> <li>• Explain how the sun provides energy and describe ways to collect this energy</li> <li>• Identify and describe various sources of renewable energy</li> <li>• Describe nuclear fission and nuclear</li> </ul>
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	6.1 6.8	Chapter 19—The Solar System (pgs.594-635) <ul style="list-style-type: none"> <li>• Observing the Solar System</li> <li>• The Sun</li> <li>• The Inner Planets</li> <li>• The Outer Planets</li> <li>• Comets, Asteroids, and Meteors</li> <li>• Is There Life Beyond Earth?</li> </ul>	Chapter 19: <ul style="list-style-type: none"> <li>• Explain how the heliocentric and geocentric models of the solar system differ</li> <li>• Explain how the observations and views of scientists such as Kepler and Copernicus contributed to the current understanding of the solar system</li> <li>• Explain the two factors that keep planets in their orbits</li> <li>• Describe how the sun produces energy</li> <li>• List and describe the layers of the sun’s atmosphere</li> <li>• Identify features of the sun’s surface</li> <li>• Identify the main characteristics of the inner planets</li> <li>• Identify the main characteristics of the gas giant planets</li> <li>• Compare Pluto with the other planets</li> <li>• Identify the characteristics of comets and asteroids</li> <li>• Describe the formation of meteoroids</li> <li>• Identify the conditions needed for living things on Earth</li> <li>• State why Mars and Europa are thought to be good places to look for signs of life</li> <li>• Learn key vocabulary—geocentric, nuclear fusion, terrestrial planet, gas giant, comet, extraterrestrial life, etc. (see pgs.594,600,606,614,624,628 of the t.e.)</li> </ul>
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