

Map: **Science-Grade 6** Grade Level: **6**District: **Island Trees**Created: **08/28/2009** Last Updated: **08/28/2009**

	Essential Questions	Content	Skills	Assessments	Standards/PIs	Resources/Notes
Unit 1	<p>Interactions</p> <p>How are living and nonliving things connected in ecosystems?</p> <p>How does sunlight play a role in an ecosystem?</p> <p>How does energy flow through a food web?</p> <p>Cycles in Nature</p> <p>How do the three cycles of nature help to sustain life?</p> <p>How do mature communities develop through the process of succession?</p> <p>Land Biomes</p> <p>How is a biome characterized?</p> <p>How are the seven land biomes similar and different?</p>	<p>Interactions</p> <p>Living things are both similar to and different from each other and from nonliving things.</p> <p>Vocabulary</p> <p><i>ecology</i></p> <p><i>biotic</i></p> <p><i>abiotic</i></p> <p><i>population</i></p> <p><i>community</i></p> <p><i>ecosystem</i></p> <p><i>biosphere</i></p> <p>All living things are connected in a web of life.</p> <p>The biotic part of an environment is made up of all of the living things found within it.</p> <p>The abiotic part of an environment is made up of all of the nonliving things found within it, such as water and light.</p> <p>An ecosystem is made up of a community of organisms and its abiotic environment.</p> <p>Cycles in Nature</p> <p>Organisms maintain a dynamic equilibrium that sustains life.</p> <p>Vocabulary</p> <p><i>evaporation</i></p>	<p>Interactions</p> <p>Distinguish between the biotic and abiotic parts of the environment.</p> <p>Explain how populations and communities are related.</p> <p>Describe how the abiotic parts of the environment affect ecosystems.</p> <p>Describe the functions of producers, consumers, and decomposers in an ecosystem.</p> <p>Distinguish between a food chain and a food web.</p> <p>Explain how energy flows through a food web.</p> <p>Describe how the removal of one species affects the entire food web.</p> <p>Describe how a new species that is introduced into an environment affects the entire food web.</p> <p>Explain the relationship between carrying capacity and limiting factors.</p> <p>Describe the two types of competition.</p> <p>Distinguish between mutualism, commensalism,</p>	<p>Textbook Resource Files include:</p> <p>Skills Worksheets</p> <p>Directed Reading Articles</p> <p>Vocabulary and Section Summary</p> <p>Section Reviews</p> <p>Chapter Reviews</p> <p>Reinforcement Activities</p> <p>Critical Thinking Activities</p> <p>Assessments</p> <p>Section Quizzes</p> <p>Chapter tests</p> <p>Standardized Test Preparation</p> <p>Labs and Activities</p> <p>*Predators and Prey TE</p> <p>*Symbiosis TE</p> <p>*Internet Activity, HL5CYCW, SE</p> <p>*Connection Activity, Earth Science, Major Glaciers</p> <p>*Connection Activity ,Earth Science, Natural Disasters</p> <p>*Group Activity, Coral Reef, TE</p> <p>*Activity, Water Distribution, TE</p> <p>*Connection Activity, Real World, 3R's, TE</p> <p>*Activity, Environmental Protection, TE</p> <p>Datasheet for Chapter Lab</p> <p>Vocabulary Activities</p> <p>SciLinks Activities</p> <p>Dissecting Owl Pellets</p> <p>Poster Assignments:</p> <p>Food Chains</p> <p>Food Webs</p> <p>Carbon Cycle</p> <p>Water Cycle</p> <p>Nitrogen Cycle</p> <p>The 3 R's : Reduce, Reuse,</p>	<p>MST4-K8-8B</p> <p>MST4-K10-10A</p> <p>MST4-K11-11A</p> <p>MST4-K11-11B</p> <p>MST4-K11-11B</p> <p>MST4-K12-12A</p> <p>MST4-K12-12B</p> <p>MST4-K12-12B</p>	<p>Chapter 1-2</p> <p>Lab Wolfpack Survival</p> <p>Chapter 2 - 1</p> <p>Lab Nitrogen Needs</p> <p>Chapter 1-3</p> <p>Lab Owl Pellets</p> <p>Holt Science & Technology Module E Environmental Science</p> <p>Environmental Science</p> <p>Interactions</p> <p>VR #618 Bill Nye - Ecosystems</p> <p>VR #618 Bill Nye- Food Web</p> <p>VR #728 Magic School Bus Gets Eaten (Food Chains)</p> <p>VR #763 Food Chains</p> <p>VR #732 Ecosystems</p> <p>VR #806 Bill Nye- Biodiversity</p> <p>574.5 WEI U.X.L. <u>Encyc. Of Biomes</u></p> <p>574.5 books about biomes</p> <p>Cycles in Nature</p> <p>VR #804 Bill Nye-Water Cycle</p> <p>Land Biomes</p> <p>VR #803 Bill Nye- Forests</p> <p>DVD #19 Coniferous Forests</p> <p>DVD #20 Deciduous Forests</p> <p>DVD #21 Deserts</p>

	<p><i>condensation</i></p> <p><i>precipitation</i></p> <p><i>decomposition</i></p> <p><i>combustion</i></p> <p>Precipitation, evaporation, transpiration, and condensation are parts of the water cycle.</p> <p>Photosynthesis, respiration, decomposition, and combustion are parts of the carbon cycle.</p> <p>In the nitrogen cycle, nitrogen gas is converted into other forms and back to gas again.</p> <p>Many forms of matter on Earth pass through cycles. These cycles may be connected in many ways.</p> <p>Vocabulary</p> <p><i>succession</i></p> <p><i>pioneer species</i></p> <p>Ecological succession is the gradual development of communities over time.</p> <p>Often a series of stages is observed during succession.</p> <p>Primary succession occurs in an area that was not previously inhabited by living things; no soil is present.</p> <p>Secondary succession takes place in an area where an earlier community was disturbed by fire, landslides, floods, or plowing for crops and where soil is present.</p>	<p>and parasitism. Give an example of coevolution.</p> <p>Cycles in Nature</p> <p>Diagram the water cycle, and explain its importance to living things.</p> <p>Diagram the carbon cycle, and explain its importance to living things.</p> <p>Diagram the nitrogen cycle, and explain its importance to living things.</p> <p>Describe the process of succession.</p> <p>Contrast primary and secondary succession.</p> <p>Land Biomes</p> <p>Distinguish between abiotic and biotic factors in biomes.</p> <p>Identify seven land biomes.</p> <p>Environmental Problems/Solutions</p> <p>List five kinds of pollution.</p> <p>Distinguish between renewable and nonrenewable resources.</p> <p>Describe the impact of exotic species.</p> <p>Explain why human population growth has increased.</p> <p>Explain why habitat destruction affects biodiversity.</p> <p>Give two examples of how</p>	<p>Recycle</p> <p>Land Biomes:</p> <p>Brain Drops Organizer: Research topic and fill in with facts</p> <p>Context Maps:</p> <p>Primary Succession</p> <p>Secondary Succession</p> <p>Debates: On the Use of Fossil Fuels vs. Alternative Fuels</p>	<p>DVD #23 Grasslands</p> <p>DVD #25 Rainforest Biomes</p> <p>DVD #26 Tundra</p> <p>Environmental Problems/ Solutions</p> <p>VR #751 Pollution</p> <p>VR #806 Garbage</p> <p>Energy Resources</p> <p>VR #448 What is Energy?</p> <p>VR #754 Solar Energy</p>
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Environmental Problems/Solutions

Human decisions and activities have had a profound impact on the physical and living environment.

Vocabulary

pollution

renewable resource

nonrenewable resource

overpopulation

biodiversity

Pollutants include garbage, chemicals, high-energy wastes, gases, and noise.

Renewable resources can be used over and over. Nonrenewable resources cannot be replaced or are replaced over thousands of years.

Exotic species can become pests and compete with native species.

Overpopulation happens when a population is so large that it cannot get what it needs to survive.

Habitat destruction can lead to soil erosion, water pollution, and decreased biodiversity.

In addition to harming the environment, pollution can harm humans.

Vocabulary

conservation

recycling

Conservation is the preservation and wise use of natural resources.

Conservation helps reduce pollution, ensure that

resources will be available in the future, and protects habitats.

The three R's are Reduce, Reuse, and Recycle. Reducing means using fewer resources. Reusing means using materials and products over and over. Recycling is the recovery of materials from waste.

Biodiversity is vital for maintaining healthy ecosystems. A loss of one species can affect an entire ecosystem.

Biodiversity can be preserved by protecting endangered species and entire habitats.

Environmental strategies include reducing pollution, reducing pesticide use, protecting habitats, enforcing the Endangered Species Act, and developing alternative energy resources.

Energy Resources

Vocabulary

fossil fuel

petroleum

natural gas

coal

acid precipitation

smog

Energy resources are resources that humans use to produce energy.

Petroleum is a liquid fossil fuel that is made of hydrocarbon compounds.

Natural gas is a gaseous fossil fuel that is made of hydrocarbon compounds.

Coal is a solid fossil fuel that forms from the remains of ancient forests.

Petroleum and natural gas form from the remains of

		<p>microscopic sea life.</p> <p>Fossil fuels are found all over the world. The United States imports half of the petroleum it uses from the Middle East, South America, Africa, Mexico, and Canada.</p> <p>Fossil fuels are obtained by drilling oil wells, minng below Earth's surface, and strip mining.</p> <p>Fossil fuels are nonrenewable and will eventually run out.</p> <p>Acid precipitation, smog, water pollution, and the destruction of wildlife habit are some of the environmental problems that are created by the use of fossil fuels.</p>				
Unit 2	<p>What is a mineral?</p> <p>What is a mineral?</p> <p>How are minerals different from rocks?</p> <p>How does a compound differ from an element?</p> <p>How does the composition of a mineral determine how it is classified?</p>	<p>What is a mineral?</p> <p>Rocks are composed of minerals. Only a few rock-forming minerals make up most of the rocks of Earth.</p> <p>Vocabulary</p> <p>mineral</p> <p>element</p> <p>compound</p> <p>crystal</p> <p>-A mineral is a naturally formed, inorganic solid that has a definite crystalline structure</p> <p>-Minerals may be either elements or compounds</p> <p>-Mineral crystals are solid, geometric forms that are produced by a repeating pattern of atoms</p> <p>-Minerals are classified as either silicate or nonsilicate based on the elements that make them up</p>	<p>What is a mineral?</p> <p>Describe the structure of minerals</p> <p>Describe the two major groups of minerals</p> <p>Categorize minerals into their prospective groups</p>	<p>What is a mineral?</p> <p>-Paired Summary of text</p> <p>-Drawing of the 6 classes of nonsilicate minerals</p> <p>-Crystal Growing lab</p> <p>-Online Quiz: What is a Mineral</p> <p>-Section Review</p> <p>T-Chart comparing Silicates vs. Nonsilicates</p> <p>Section Quiz</p>	<p>MST4-K2-2A</p> <p>MST4-K2-2B</p> <p>MST4-K2-2B</p>	<p>Chapter 1-1</p> <p>_Lab Mineral Quiz Show</p> <p>Chapter 2-1</p> <p>_Lab Rock cycle Candy</p> <p>Chapter 2-4</p> <p>_Lab Metamorphic Stretch</p> <p>Chapter 4-2</p> <p>_Lab Plate Tectonics Boiled Egg</p> <p>Holt Science & Technology - Module F - Inside the Restless Earth</p> <p>What is a mineral?</p> <p>Multimedia Animation- go.hrw.com</p> <p>Holt Module F Text</p> <p>Holt Module F CD-ROM</p> <p>Chapter Starter</p> <p>Transparency: Minerals of the Earth's crust</p> <p>Concept Map for Minerals</p>

		rock erosion deposition composition texture	Describe four processes that shape the earth's features List two characteristics of rock that are used to help classify it Explains how each type of rock changes into another type as it moves through the rock cycle Compares the different types of rock	Performance-Based Assessment: Model the rock cycle Skills Practice - Sugar Lab Section Quiz	Holt Module E Text Holt Module E CD-ROM Chapter transparency - plate boundaries
	Igneous Rock	Rocks are classified according to their method of formation.		Igneous Rock	
	How does igneous rock form?			Venn diagram to compare/contrast actual samples of igneous rock	
	How is lava different from magma?	Igneous rock forms when magma cools and hardens.	Igneous Rock	Cooperative activity: compare the words <i>extrusive</i> and <i>intrusive</i> to the words <i>interior</i> and <i>exterior</i> . Focus on prefixes.	
	What determines the texture of igneous rock?			Section Review Jeopardy Review Section Quiz	
	What is the difference between intrusive and extrusive igneous rock?	The texture of igneous rock is determined by the rate at which the rock cools.	Describe three ways igneous rocks form.		
		Sedimentary Rock			
		Rocks are classified according to their method of formation.	Explain how the cooling rate of magma affects the texture of igneous rock.		
		Vocabulary	Distinguish between igneous rock that cools within the earth's crust and igneous rock that cools at the earth's surface.		
		compaction cementation	Identify the physical characteristics of igneous rocks.	Sedimentary Rock	
		Sedimentary rock forms at or near the surface.		Reading Organizer - outline of the section Cooperative group work- investigate shale, sandstone, and limestone online. Section Review	
	Sedimentary Rock				
	How does Sedimentary Rock form?				
	What is the difference between clastic and chemical sedimentary rock?	Metamorphic Rock	Sedimentary Rock	Metamorphic Rock	
		Rocks are classified according to their	Describe the origin of sedimentary rock.	Quick lab: granite drawing on clay to demonstrate stretching crystals into gneiss.	

<p>Metamorphic Rock</p> <p>How can rock undergo metamorphism?</p> <p>What is the difference between foliated and nonfoliated rocks?</p> <p>Inside the Earth</p> <p>What are the layers of the Earth?</p> <p>How does the composition of the Earth's layers affect their placement?</p> <p>How is the Earth broken into tectonic plates?</p> <p>Restless Continents</p> <p>How does Wegener's hypothesis of continental drift explain the current location of the continents?</p> <p>Earthquakes</p> <p>How do earthquakes occur? Where do they typically occur?</p> <p>How does energy from earthquakes travel through the earth?</p> <p>How do scientists locate the epicenter and focus?</p> <p>How do we safeguard buildings against earthquakes?</p> <p>What is the problem with earthquake forecasting?</p>	<p>method of formation.</p> <p>Vocabulary</p> <p>metamorphosis</p> <p>foliated</p> <p>nonfoliated</p> <p>Metamorphic rocks are rocks in which the structure, texture, or composition has changed.</p> <p>Two ways rocks can undergo metamorphism are by contact metamorphism and regional metamorphism.</p> <p>As rocks undergo metamorphism, the original minerals in a rock change into new minerals that are more stable in new pressure and temperature conditions.</p> <p>Inside the Earth</p> <p>The interior of Earth is hot. Heat flow and movement of material within Earth cause sections of Earth's crust to move. This may result in earthquakes, volcanic eruption, and the creation of mountains and ocean basins.</p> <p>Vocabulary</p>	<p>Differentiate between the three main categories of sedimentary rock.</p> <p>Metamorphic Rock</p> <p>Describe two ways in which rock can undergo metamorphism.</p> <p>Differentiate between foliated and nonfoliated metamorphic rock.</p> <p>Inside the Earth</p> <p>Identify the layers of the Earth by their chemical composition and physical properties.</p> <p>Describe a tectonic plate.</p> <p>Explain how scientists know about the structure of the Earth's interior.</p> <p>Restless Continents</p> <p>Describe Wegener's hypothesis of continental drift.</p> <p>Explain how sea-floor spreading provides a way for continents to move.</p> <p>Describe how new oceanic lithosphere forms at mid-ocean ridges</p> <p>Explain how magnetic reversals provide evidence for sea floor spreading.</p> <p>Earthquakes</p> <p>Identify the typical worldwide locations of</p>	<p>Section Review</p> <p>Inside the Earth</p> <p>Continental Collisions activity</p> <p>Paired drawing of the layers of the Earth Section Quiz</p> <p>Tectonic Essay</p> <p>Quick Lab: tectonic ice cubes</p> <p>Restless Continents</p> <p>Paired summarizing: read the section and stop at the end of each page to summarize the text. Pangaea Puzzle flip book Section Quiz</p> <p>Earthquakes</p> <p>Mapping Data - usgs.gov - locate 10-20 major earthquakes on a world map Outline reading section with appropriate headings. Section quiz</p>	
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	<p>crust</p> <p>mantle</p> <p>core</p> <p>lithosphere</p> <p>asthenosphere</p> <p>mesosphere</p> <p>tectonic plate</p> <p>Restless Continents</p> <p>Continents fitting together like puzzle parts and fossil correlations provided initial evidence that continents were once together.</p> <p><u>Vocabulary</u></p> <p>continental drift</p> <p>sea-floor spreading</p> <p>Earthquakes</p> <p>Plates may collide, move apart, or slide past one another. Most volcanic activity and mountain building occur at the boundaries of these plates, often resulting in earthquakes.</p> <p><u>Vocabulary</u></p> <p>seismology</p> <p>deformation</p> <p>elastic rebound</p> <p>seismic waves</p> <p>P waves</p> <p>S waves</p> <p>epicenter</p> <p>focus</p> <p>gap hypothesis</p> <p>seismic gap</p>	<p>earthquake activity.</p> <p>Explain why earthquakes usually occur in these locations.</p> <p>Identify the 3 different plate boundaries</p> <p>Measure the intensity of an earthquake</p> <p>Compare the methods of earthquake forecasting</p> <p>Outline earthquake safety procedures</p>		
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Unit 3	<p>Properties of Matter</p> <p>How do volume, mass, weight and inertia affect matter?</p> <p>How does density affect the physical property of matter?</p> <p>How do physical and chemical properties differ?</p> <p>How can one differentiate between a chemical change and a physical change? How can one observe /measure conductivity?</p> <p>How do the characteristics of the three states of matter differ?</p> <p>How do the characteristics of malleability, ductility, and solubility differ?</p> <p>How does one describe density?</p> <p>States of Matter</p> <p>What are the three most familiar states of matter?</p> <p>How are the characteristics of a liquid, gas, and solid different?</p> <p>How does temperature affect matter?</p> <p>How do Boyle's law and Charles's law differ?</p> <p>How does a change of state occur?</p> <p>What causes endothermic and exothermic changes?</p> <p>How do the particles of matter behave in solids, liquids, and gasses?</p> <p>How are both boiling and evaporation similar?</p> <p>How do condensation and sublimation differ?</p> <p>How is the temperature of a substance during a change of state affected?</p> <p>Elements, Compounds, and Mixtures</p>	<p>Properties of Matter</p> <p>Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.</p> <p>Vocabulary</p> <p><i>volume</i></p> <p><i>meniscus</i></p> <p><i>mass</i></p> <p><i>weight</i></p> <p><i>inertia</i></p> <p>Two properties of matter are volume and mass.</p> <p>Volume is the amount of space taken up by an object.</p> <p>The SI unit of volume is the liter (L).</p> <p>Mass is the amount of matter in an object.</p> <p>The SI unit of mass is the kilogram (kg).</p> <p>Weight is a measure of the gravitational force on an object, usually in relation to the Earth.</p> <p>Inertia is the tendency of an object to resist being moved or, if the object is moving, to resist a change in speed or direction. The more massive an object is, the greater its inertia.</p> <p>Matter is made up of particles whose properties determine</p>	<p>Properties of Matter</p> <p>Describe the two properties of all matter.</p> <p>Identify the units used to measure volume and mass.</p> <p>Compare mass and weight.</p> <p>Explain the relationship between mass and inertia.</p> <p>Identify six examples of physical properties of matter.</p> <p>Describe how density is used to identify substances.</p> <p>List six examples of physical changes.</p> <p>Explain what happens to matter during a physical change.</p> <p>Describe two examples of chemical change.</p> <p>Explain what happens during a chemical change.</p> <p>Distinguish between physical and chemical changes.</p> <p>States of Matter</p> <p>Describe the properties shared by particles of all matter.</p> <p>Describe three states of matter.</p>	<p>Properties of Matter</p> <p>Reading Strategy, reading Organizer</p> <p>Directed Reading A</p> <p>Directed Reading B</p> <p>Interactive Textbook</p> <p>Teaching Transparency</p> <p>Quick Lab, Changing Change</p> <p>Activity: Expense of Desalination</p> <p>Quick Lab: Physical or Chemical Change</p> <p>Data Sheet for Quick Lab: Physical or Chemical Change</p> <p>Lab Video for Chapter Lab</p> <p>Critical Thinking : As a Matter of Fact</p> <p>Vocabulary and Section Summary</p> <p>Section Review</p> <p>Chapter Review</p> <p>Concept Map Transparency</p> <p>Test Generator</p> <p>ASSESSMENTS</p> <p>Quiz</p> <p>Section Quiz</p> <p>Holt Puzzle Pro</p> <p>Vocabulary Activity</p> <p>Chapter Test A, B</p> <p>States of Matter</p> <p>Reading Strategies</p> <p>Directed ReadingA, B</p> <p>Demonstrate: Do Solids Move?</p> <p>Quick Lab: Boiling Water is Cool</p> <p>A Hot and Cold Lab</p> <p>Vocabulary and Section Summary</p> <p>Section Review</p> <p>Chapter Review</p> <p>Holt Puzzle Pro</p> <p>Assessments</p> <p>Section Review</p> <p>Quiz Sections 1-3</p> <p>Chapter Test</p> <p>Vocabulary Quiz</p> <p>Elements, Compounds and Mixtures</p> <p>Reading Strategies</p> <p>Directed Reading A, B</p> <p>Quick Lab : Compound Confusion</p> <p>Datasheet for Quick Lab : Compound Confusion</p> <p>Interactive TextbookLab Video for Chapter Lab</p> <p>Vocabulary and Section Summary</p> <p>Section Review</p> <p>Chapter Review</p> <p>Holt Puzzle Pro</p> <p>Assessments</p> <p>Section Quiz</p> <p>Vocabulary Activity</p> <p>Chapter Test A, B</p>	<p>MST1-K1-1A</p> <p>MST1-K4-2A</p> <p>MST1-K4-2C</p> <p>MST1-K4-2D</p> <p>MST1-K5-2A</p> <p>MST1-K5-2B</p> <p>MST1-K5-2C</p> <p>MST1-K6-2A</p> <p>MST1-K6-2B</p> <p>MST1-K6-2C</p> <p>MST1-K3-1A</p>	<p>Chapter 1 - Section 1</p> <p>Quick Lab: Space Case (Volume of Air)</p> <p>Chapter 1 - Section 2</p> <p>Density Lab (from Ch 1, Sec.2 of Restless Earth Textbook)</p> <p>Chapter 1 - Section 3</p> <p>Lab: White Before Your Eyes</p> <p>Chapter 1 - Section 3</p> <p>Quick Lab - Changing Change</p> <p>Chapter 1 - Section 3</p> <p>Quick Lab: Physical or Chemical Change</p> <p>Chapter 2 - Section 1</p> <p>Lab Volumania</p> <p>Chapter 3 Section 1</p> <p>Lab - Separating Elements</p> <p>Chapter 3 - Section 2</p> <p>Lab- Compound Confusion</p> <p>Matter Holt Science & Technology Introduction to Matter-Module K Properties of Matter</p> <p>VR #786 Properties of Matter</p> <p>VR #773 Atoms & Molecules</p> <p>VR #783 Changes in Properties of Matter</p> <p>States of Matter</p> <p>VR #785 The Periodic Table</p> <p>VR #800 Bill Nye-Phases of Matter</p> <p>Elements, Compounds, and Mixtures</p> <p>VR #780 Elements, Compounds & Mixtures</p>
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How do atoms and molecules relate to the creation of elements, compounds and mixtures?	the observable characteristics of matter and its reactivity.	Explain the difference between the states of matter.		
How is a pure substance characterized?	Vocabulary <i>physical property</i>			
What are the characteristics of an element?	<i>density</i>	Describe three factors that affect how gases behave.		
How are elements classified?	<i>physical change</i>			
How are the characteristics of a compound different from an element?	Physical properties of matter can be observed without changing the identity of the matter.	Predict how a change in pressure or temperature will affect the volume of a gas.		
How do elements that form compounds combine?		Describe how energy is involved in changes of state.		
How do compounds' physical and chemical properties change?	Examples of physical properties are conductivity, state, malleability, ductility, solubility, and density.	Describe what happens during melting and freezing.		
How can a compound be broken down?				
How are mixtures and solutions different?	Density is the amount of matter in a given space.	Compare evaporation and condensation.		
How do solutions differ?				
How does a suspension differ from a colloid?	Density is used to identify substances because the density of a substance is always the same at a given pressure and temperature.	Explain what happens during sublimation.		
	When a substance undergoes a physical change, its identity stays the same.	Identify the two changes that can happen when a substance loses or gains energy.		
	Examples of physical changes are freezing, cutting, bending, dissolving, and melting.	Elements, Compounds, and Mixtures		
	Vocabulary	Describe the purpose of an atom.		
	<i>chemical property</i>	Describe how atoms become molecules.		
	<i>chemical change</i>	Describe pure substances.		
	Chemical properties describe a substance based on its ability to change into a new substance that has different properties.	Describe the characteristics of elements, and give examples.		

Chemical properties can be observed only when a chemical change happens.	Explain how elements can be identified.
Examples of chemical properties are flammability and reactivity.	Classify elements according to their properties.
New substances form as a result of a chemical change.	Explain how elements make up compounds.
Unlike a chemical change, a physical change does not alter the identity of a substance.	Describe the properties of compounds.
States of Matter	Explain how a compound can be broken down into its elements.
Energy exists in many forms, and when these forms change energy is conserved.	Give examples of common compounds.
Vocabulary	Describe three properties of mixtures.
<i>states of matter</i>	Describe four methods of separating the parts of a mixture.
<i>solid</i>	
<i>liquid</i>	
<i>gas</i>	Analyze a solution in terms of its solute and solvent.
The three most familiar states of matter are solid, liquid, and gas.	Explain how concentration affects a solution.
All matter is made up of tiny particles called atoms and molecules that attract each other and move constantly.	Describe the particles in a suspension.
A solid has a definite volume and a definite shape.	Explain how a colloid differs from a solution and a suspension .
A liquid has a definite volume but not a definite shape.	
A gas does not have a definite shape nor volume.	

Vocabulary*change of state**melting**evaporation**boiling**condensation**sublimation*

A change of state is the conversion of a substance from one physical form to another.

The freezing point and the melting point of a substance are the same temperature.

Both boiling and evaporation result in a liquid changing to a gas.

Condensation is the change of a gas to a liquid. It is the reverse of evaporation.

Sublimation changes a solid directly to a gas.

The temperature of a substance does not change during a change of state.

Elements, Compounds, and Mixtures**Vocabulary***atom**molecule**element**pure substance**metal*

An atom is the smallest unit of an element that maintains the properties of that element.

A molecule consists of more than one atom bonded.

A substance in which all of the particles are alike is a pure substance. These include elements and compounds.

An element is a pure substance that cannot be broken down into anything simpler by physical or chemical means.

Each element has a unique set of physical and chemical properties.

Vocabulary

compound

A compound is a pure substance composed of two or more elements.

The elements that form a compound always combine in a specific ratio.

Each compound has a unique set of physical and chemical properties that differ from those of the elements that make up the compound.

Compounds can be broken down into simpler substances only by chemical changes.

		<p>Vocabulary</p> <p><i>mixture</i></p> <p><i>solution</i></p> <p><i>solute</i></p> <p><i>solvent</i></p> <p><i>concentration</i></p> <p><i>solubility</i></p> <p><i>suspension</i></p> <p>A mixture is a combination of two or more substances, each of which keeps its own characteristics.</p> <p>Mixtures can be separated by physical means, such as filtration and evaporation.</p> <p>A solution is a mixture that appears to be a single substance but is composed of a solute dissolved in a solvent.</p> <p>Concentration is a measure of the amount of solute dissolved in a solvent.</p> <p>The solubility of a solute is the ability of the solute to dissolve in a solvent at a certain temperature.</p> <p>Suspensions are mixtures that contain particles large enough to settle out or be filtered and to block or scatter light.</p>				
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	Essential Questions	Content	Skills	Assessments	Standards/PIs	Resources/Notes
Unit 4	<p>Scientific Method</p> <p>How is a hypothesis a prediction?</p> <p>Why must an experiment be done under control?</p> <p>How can variables affect the outcome of an experiment?</p> <p>What is the difference between the dependent and independent variables?</p>	<p>Scientific Method</p> <p>Scientific methods are the ways in which scientists follow steps to answer questions and solve problems.</p> <p>After testing a hypothesis, scientists analyze the results and draw conclusions about whether the hypothesis is supported.</p> <p>Vocabulary</p> <p>Control group</p> <p>Constant</p> <p>Experimental group</p> <p>Observation</p> <p>Conclusion</p> <p>Hypothesis</p> <p>Big Question (The Problem)</p> <p>Variable</p> <p>dependent variable</p> <p>Independent variable</p> <p>data</p> <p>conclusion</p> <p>results</p> <p>Scientific Method</p>	<p>Scientific Method</p> <p>Describe scientific methods.</p> <p>Develop an appropriate design of a controlled experiment.</p> <p>Use information in tables and graphs to analyze experimental results.</p> <p>Explain how scientific knowledge can change.</p> <p>Generate an experiment from a simple observation to conclusion.</p>	<p>Scientific Method</p> <p>Prediction Writing: If...then statements</p> <p>Graph interpretation: line vs. bar</p> <p>Practice Experiment: Gum Flavor</p> <p>Practice Experiment: Memory</p> <p>Science Fair Project</p>	<p>MST6-K2-2A</p> <p>MST6-K2-2C</p>	<p>Holt Science & Technology Module P Introduction to Science</p> <p>Scientific Method</p> <p>Mythbusters - Christmas Tree preservation episode</p> <p>Brainpop</p> <p>Video: How to Prepare a Science Fair Experiment</p> <p>www.scilinks.org code: HSM1359</p> <p>Introduction to Scientific Method</p> <p>Lab Gum Flavor</p> <p>Review Data Memory Experiment</p> <p>Sample Memory</p>
Unit 5	<p>Forces and Motion</p> <p>What is motion and how is it related to speed?</p> <p>How are speed and velocity different?</p> <p>How can acceleration be represented on a graph?</p> <p>What is a force?</p> <p>How can a force cause a change in motion?</p> <p>How do you determine net</p>	<p>Forces and Motion</p> <p>Energy and matter interact through forces that result in changes in motion.</p> <p>Vocabulary</p> <p>Motion</p> <p>Speed</p> <p>velocity</p>	<p>Forces and Motion</p> <p>Describe the motion of an object by the position of the object in relation to a reference point.</p> <p>Identify the two factors that determine speed.</p> <p>Explain the relationship between speed and velocity.</p> <p>Analyze the relationship between velocity and</p>	<p>Forces and Motion</p> <p>Domino Derby</p> <p>Small group discussion after chapter</p> <p>Wind-up toy activity</p> <p>Science Journal entry- Give examples of when it is sufficient to know only the speed of something or when you need to know speed and velocity.</p>	<p>MST4-K5-5A</p> <p>MST4-K5-5B</p>	<p>Chapter 2-3</p> <p>Lab Weight on Other Planets</p> <p>Holt Science & Technology - Module M - Forces, Motion, and Energy</p> <p>What is a Force?</p> <p>Brainpop - Forces</p> <p>Google Video - any footage of a rollercoaster</p>

<p>force? What is the difference between an unbalanced and a balanced force? Friction How does friction occur? What are examples of two types of friction? How can friction be both harmful and helpful? Gravity What is gravity? How does gravity affect matter? How does mass and distance affect the force of gravity? How are mass and weight different? Gravity and Motion How does gravity affect a falling object? How does air resistance affect the acceleration of falling objects? Why is the acceleration due to gravity the same for all objects?</p>	<p>acceleration What is a force? Energy and matter interact through forces that result in changes in motion. Vocabulary force newton net force Friction Energy and matter interact through forces that result in changes in motion. Vocabulary friction Gravity Every object exerts gravitational force on every other object. Gravitational force depends on how much mass the objects have and on how far apart they are. Gravity is one of the forces acting on orbiting objects and projectiles. Vocabulary gravity weight</p>	<p>acceleration. Demonstrate that changes in motion can be measured and represented on a graph. What is a force? Describe forces, and explain how forces act on objects. Determine the net force when more than one force is acting on an object. Compare balanced and unbalanced forces. Describe ways that unbalances forces cause changes in motion. Friction Explain why friction occurs. List the two types of friction. Explain how friction can be both helpful and harmful. Demonstrate the characteristics of friction. Gravity Describe gravity and its effect on matter. Explain the law of universal gravitation. Describe the difference between mass and weight. Gravity and Motion Explain the effect of gravity and air resistance on falling objects. Explain why objects in orbit are in free fall and appear</p>	<p>Section guided reading Section quiz What is a force? Draw table comparing balanced and unbalanced forces. Section review Friction Brainstorming: brainstorm words and phrases related to friction. Quick Lab: Car racing lab Quick Lab: reducing friction Section review Gravity Poster: gravity and how it affects sports Section Quiz Gravity and Motion Activity: paper ball vs. flat page drop Activity: Penny Projectile Motion Section Review</p>	<p>Gravity VR# 598 Bill Nye – Gravity Chapter 1 - Section 1 Lab Built for Speed Chapter 1 Section 3 Lab Friction 500</p>
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		<p>mass</p> <p>Gravity and Motion</p> <p>Force is directly related to an object's mass and acceleration. The greater the force, the greater the change in motion.</p> <p><u>Vocabulary</u></p> <p>terminal velocity</p> <p>free fall</p> <p>projectile motion</p>	<p>to be weightless.</p> <p>Describe how projectile motion is affected by gravity.</p>			
Unit 6	<p>Reproduction and Development</p> <p>How is the continuity of life sustained?</p> <p>What are the essential parts for animal reproduction to take place?</p> <p>How do sexual and asexual reproduction occur?</p> <p>How does sexual reproduction create variety and diversity?</p> <p>What might affect human reproduction?</p> <p>How do diseases occur?</p> <p>How does the body fight disease?</p>	<p>Reproduction and Development</p> <p>The continuity of life is sustained through reproduction and development.</p> <p>Animal Reproduction</p> <p>Vocabulary</p> <p><i>asexual reproduction</i></p> <p><i>sexual reproduction</i></p> <p><i>egg</i></p> <p><i>sperm</i></p> <p><i>external fertilization</i></p> <p><i>internal fertilization</i></p> <p><i>testosterone</i></p> <p><i>progesterone</i></p> <p><i>estrogen</i></p> <p>In asexual reproduction, a single parent produces offspring that are genetically identical to the parent.</p>	<p>Reproduction and Development</p> <p>Animal Reproduction</p> <p>Distinguish between asexual and sexual reproduction.</p> <p>Explain the difference between external and internal fertilization.</p> <p>Identify the three different types of mammalian reproduction.</p> <p>Human Reproduction</p> <p>Identify the structures and functions of the male and female reproductive systems.</p> <p>Describe two reproductive system problems.</p> <p>Growth and Development</p>	<p>Textbook Resource Files include: Skills Worksheets Directed Reading Activities Vocabulary and Section Summary Section Reviews Chapter Reviews Reinforcement Activities Critical Thinking Activities</p> <p>Assessments Section Quizzes Chapter Tests Standardized Test Preparation Labs and Activities *Group Activity, Reproductive System Cancer, TE *Quick Lab, Only Skin Deep, SE *Group activity, Immunity Skit, TE *Activity, Concept Mapping, TE *Group Activity, Poster Project, TE</p> <p>Datasheet for Chapter Lab Vocabulary Activities SciLinks Activities</p> <p>Poster Assignments: Embryotic Development Sequence Chart Organizer</p>	<p>HPEFACS1-K1-1A</p> <p>HPEFACS1-K1-1B</p> <p>HPEFACS1-K1-1C</p> <p>HPEFACS1-K1-1D</p> <p>HPEFACS2-K1-1C</p> <p>HPEFACS2-K1-1B</p> <p>HPEFACS2-K1-1B</p>	<p>Holt Science & Technology Module D- Human Body Systems and Health</p> <p>Reproduction and Human Development DVD #13 Genes & Heredity VR #867 Bill Nye- Genes VR #860 Genetics</p>

		<p>In sexual reproduction, an egg from one parent combines with a sperm from the other parent.</p> <p>Fertilization can be external or internal.</p> <p>All mammals reproduce sexually and nurture their young with milk.</p> <p>Human Reproduction</p> <p>Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.</p> <p><i>Vocabulary</i></p> <p><i>testes</i></p> <p><i>penis</i></p> <p><i>ovary</i></p> <p><i>uterus</i></p> <p><i>vagina</i></p> <p>The male reproductive system produces sperm and delivers it to the female reproductive system.</p> <p>The female reproductive system produces eggs, nurtures zygotes, and gives birth.</p> <p>Humans usually have one child per birth, but multiple births, such as those of twins or triplets, are possible.</p> <p>Human reproduction can be affected by cancer, infertility, and disease.</p>	<p>Summarize the processes of fertilization and implantation.</p> <p>Describe the development of the embryo and the fetus.</p> <p>Identify the stages of human development from birth to death.</p>			
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		<p>Growth and Development</p> <p><i>Vocabulary</i></p> <p><i>embryo</i></p> <p><i>placenta</i></p> <p><i>umbilical cord</i></p> <p><i>fetus</i></p> <p><i>puberty</i></p> <p><i>hormones</i></p> <p>Fertilization occurs when a sperm from the male joins with an egg from the female.</p> <p>The embryo and fetus undergo many changes between implantation and birth.</p> <p>The first stage of the human development lasts from fertilization to birth.</p> <p>After birth, a human goes through four more stages of growth and development.</p>			
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	Essential Questions	Content	Skills	Assessments	Standards/PIs	Resources/Notes
Key to Standards used in this Map						
<p>HPEFACS1-K1-1A [1 occurrence] - HPEFACS Standard 1 - Key Idea 1 [Health Education] - Performance Indicator 1A - integrate knowledge of basic body systems with an understanding of the changes that accompany puberty. [Intermediate]</p> <p>HPEFACS1-K1-1B [1 occurrence] - HPEFACS Standard 1 - Key Idea 1 [Health Education] - Performance Indicator 1B - apply prevention and risk reduction strategies to adolescent health problems. [Intermediate]</p> <p>HPEFACS1-K1-1C [1 occurrence] - HPEFACS Standard 1 - Key Idea 1 [Health Education] - Performance Indicator 1C - demonstrate the necessary knowledge and skills to promote healthy adolescent development. [Intermediate]</p> <p>HPEFACS1-K1-1D [1 occurrence] - HPEFACS Standard 1 - Key Idea 1 [Health Education] - Performance Indicator 1D - analyze the multiple influences which affect health decisions and behaviors. [Intermediate]</p> <p>HPEFACS2-K1-1B [2 occurrences] - HPEFACS Standard 2 - Key Idea 1 [Health Education] - Performance Indicator 1B - demonstrate personal and social skills which enhance personal health and safety. [Intermediate]</p> <p>HPEFACS2-K1-1C [1 occurrence] - HPEFACS Standard 2 - Key Idea 1 [Health Education] - Performance Indicator 1C - understand the need for personal involvement in improving the environment. [Intermediate]</p> <p>MST1-K1-1A [1 occurrence] - MST Standard 1 - Key Idea 1 [Mathematical Analysis i] - Performance Indicator 1A - extend mathematical notation and symbolism to include variables and algebraic expressions in order to describe and compare quantities and express mathematical relationships. [Intermediate]</p> <p>MST1-K3-1A [1 occurrence] - MST Standard 1 - Key Idea 3 [Mathematical Analysis iii] - Performance Indicator 1A - apply mathematical knowledge to solve real-world problems and problems that arise from the investigation of mathematical ideas, using representations such as pictures, charts, and tables. [Intermediate]</p> <p>MST1-K4-2A [1 occurrence] - MST Standard 1 - Key Idea 4 [Scientific Inquiry i] - Performance Indicator 2A - formulate questions independently with the aid of references appropriate for guiding the search for explanations of everyday observations. [Intermediate]</p> <p>MST1-K4-2C [1 occurrence] - MST Standard 1 - Key Idea 4 [Scientific Inquiry i] - Performance Indicator 2C - represent, present, and defend their proposed explanations of everyday observations so that they can be understood and assessed by others. [Intermediate]</p> <p>MST1-K4-2D [1 occurrence] - MST Standard 1 - Key Idea 4 [Scientific Inquiry i] - Performance Indicator 2D - seek to clarify, to assess critically, and to reconcile with their own thinking the ideas presented by others, including peers, teachers, authors, and scientists. [Intermediate]</p> <p>MST1-K5-2A [1 occurrence] - MST Standard 1 - Key Idea 5 [Scientific Inquiry ii] - Performance Indicator 2A - use conventional techniques and those of their own design to make further observations and refine their explanations, guided by a need for more information. [Intermediate]</p> <p>MST1-K5-2B [1 occurrence] - MST Standard 1 - Key Idea 5 [Scientific Inquiry ii] - Performance Indicator 2B - develop, present, and defend formal research proposals for testing their own explanations of common phenomena, including ways of obtaining needed observations and ways of conducting simple controlled experiments. [Intermediate]</p> <p>MST1-K5-2C [1 occurrence] - MST Standard 1 - Key Idea 5 [Scientific Inquiry ii] - Performance Indicator 2C - carry out their research proposals, recording observations and measurements (e.g., lab notes, audio tape, computer disk, video tape) to help assess the explanation. [Intermediate]</p> <p>MST1-K6-2A [1 occurrence] - MST Standard 1 - Key Idea 6 [Scientific Inquiry iii] - Performance Indicator 2A - design charts, tables, graphs and other representations of observations in conventional and creative ways to help them address their research question or hypothesis. [Intermediate]</p> <p>MST1-K6-2B [1 occurrence] - MST Standard 1 - Key Idea 6 [Scientific Inquiry iii] - Performance Indicator 2B - interpret the organized data to answer the research question or hypothesis and to gain insight into the problem. [Intermediate]</p> <p>MST1-K6-2C [1 occurrence] - MST Standard 1 - Key Idea 6 [Scientific Inquiry iii] - Performance Indicator 2C - modify their personal understanding of phenomena based on evaluation of their hypothesis. [Intermediate]</p> <p>MST4-K2-2A [1 occurrence] - MST Standard 4 - Key Idea 2 [Physical Setting ii] - Performance Indicator 2A - explain how the atmosphere (air), hydrosphere (water), and lithosphere (land) interact, evolve, and change. [Intermediate]</p> <p>MST4-K2-2B [2 occurrences] - MST Standard 4 - Key Idea 2 [Physical Setting ii] - Performance Indicator 2B - describe volcano and earthquake patterns, the rock cycle, and weather and climate changes. [Intermediate]</p> <p>MST4-K5-5A [1 occurrence] - MST Standard 4 - Key Idea 5 [Physical Setting v] - Performance Indicator 5A - describe different patterns of motion of objects. [Intermediate]</p> <p>MST4-K5-5B [1 occurrence] - MST Standard 4 - Key Idea 5 [Physical Setting v] - Performance Indicator 5B - observe, describe, and compare effects of forces (gravity, electric current, and magnetism) on the motion of objects. [Intermediate]</p> <p>MST4-K8-8B [1 occurrence] - MST Standard 4 - Key Idea 8 [The Living Environment iii] - Performance Indicator 8B - describe factors responsible for competition within species and the significance of that competition. [Intermediate]</p> <p>MST4-K10-10A [1 occurrence] - MST Standard 4 - Key Idea 10 [The Living Environment v] - Performance Indicator 10A - compare the way a variety of living specimens carry out basic life functions and maintain dynamic equilibrium. [Intermediate]</p> <p>MST4-K11-11A [1 occurrence] - MST Standard 4 - Key Idea 11 [The Living Environment vi] - Performance Indicator 11A - describe the flow of energy and matter through food chains and food webs. [Intermediate]</p> <p>MST4-K11-11B [2 occurrences] - MST Standard 4 - Key Idea 11 [The Living Environment vi] - Performance Indicator 11B - provide evidence that green plants make food and explain the significance of this process to other organisms. [Intermediate]</p> <p>MST4-K12-12A [1 occurrence] - MST Standard 4 - Key Idea 12 [The Living Environment vii] - Performance Indicator 12A - describe how living things, including humans, depend upon the living and nonliving environment for their survival. [Intermediate]</p> <p>MST4-K12-12B [2 occurrences] - MST Standard 4 - Key Idea 12 [The Living Environment vii] - Performance Indicator 12B - describe the effects of environmental changes on humans and other populations. [Intermediate]</p> <p>MST6-K2-2A [1 occurrence] - MST Standard 6 - Key Idea 2 [Models] - Performance Indicator 2A - select an appropriate model to begin the search for answers or solutions to a question or problem. [Intermediate]</p> <p>MST6-K2-2C [1 occurrence] - MST Standard 6 - Key Idea 2 [Models] - Performance Indicator 2C - demonstrate the effectiveness of different models to represent the same thing and the same model to represent different things. [Intermediate]</p>						