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# Fourth Grade Science

Curriculum Guide 2021/2022

Scranton School District

Scranton, PA



Scranton School District  
Curriculum Guide

**Fourth Grade Science**

**Prerequisite :**

- Successful completion of K-3 Science Curriculum

Fourth grade science establishes strong scientific thinking and problem solving skills necessary for further work in science. This course involves working with inquiry based experiences, constructing explanations, and analyzing/interpreting data and nonfiction information. Topics presented in this course include but are not necessarily limited to matter, energy/work, electricity/magnets, motion, rocks/minerals/soil, landforms/erosion/weathering, weather/water cycle, earth/moon, living/nonliving, plants, animals, and ecosystems.

At the culmination of this course, the students will have a solid understanding of fourth grade science standards and will have a good foundation for fifth grade.

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Year-at-a-glance

<b>Subject: Science</b>	<b>Grade Level: 4</b>	<b>Date Completed: 6-14-21</b>
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**Nature of Science & Biological Sciences**

Topic	Resources	CCSS
You can answer your scientific questions by carrying out careful investigations.	District Supported Textbook District Supported Supplemental Resources	S4.A.2.1.1; S4.A.2.1.2;S4.A.2.2.1;S4.A.1.3.1;S4.A.2.1.3;S4.A.2.1.4;S4.A.3.2.1-3;S4.A.3.3.1;S4.D.2.1.2
Living things can be grouped according to their characteristics.	District Supported Textbook District Supported Supplemental Resources	3.1.4.A1.;3.1.4.B5.;3.1.4.C3.
Living things inherit traits, grow, and develop according to life cycles.	District Supported Textbook District Supported Supplemental Resources	3.1.4.A3.; 3.1.4.A8.;3.1.4.B1.;3.1.4.B2.
To stay alive, people depend on body systems that work together.	District Supported Textbook District Supported Supplemental Resources	3.4.4.E1

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**Biological Sciences, Earth Science, Technology**

Topic	Resources	CCSS
Living things are adaptive for survival in their environment.	District Supported Textbook District Supported Supplemental Resources	3.1.4.A5.;3.1.4.C1.;3.1.4.C2.;4.5.4.D.;4.3.4.A.
Ecosystems are made up of both living and nonliving parts that all impact one another.	District Supported Textbook District Supported Supplemental Resources	4.1.4.A.;4.4.4.B.
Living things get energy from the sun or from other living things.	District Supported Textbook District Supported Supplemental Resources	3.1.4.A2.;4.1.4.C.
Populations of living things can impact the environment in both positive and negative ways including PA agriculture.	District Supported Textbook District Supported Supplemental Resources	4.1.4.E.;4.4.4.A.;4.4.4.B.;4.4.4.D.;4.5.4.C.;4.3.4.D.;4.5.4.E.; 3.4.4.E2
Technology can have both positive and negative effects on humans and the environment	District Supported Textbook District Supported Supplemental Resources	3.4.4.B1; 3.4.4.B2.; 3.4.4.B3.; 3.4.4.B4.; 3.4.4.C1. 3.4.4.C2.; 3.4.4.C3.; 3.4.4.D1.; 3.4.4.D2.; 3.4.4.D3; 3.4.4.E4; 3.4.4.E5.; 3.4.4.E6.; 3.4.4.E7.; 3.4.4.A1.; 3.4.4.A2.; 3.4.4.A3
Physical features of Earth's landforms have changed and continue to change.	District Supported Textbook District Supported Supplemental Resources	3.3.4.A1.;3.3.4.A6.;4.4.4.C.;
Earth's surface contains evidence of things that once lived. (fossils)	District Supported Textbook District Supported Supplemental Resources	3.3.4.A3.;
The Earth has resources that we use and need to survive. (renewable and nonrenewable)	District Supported Textbook District Supported Supplemental Resources	4.3.4B.;4.5.4.A.; 3.4.4.E3.;

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**Earth and Space Sciences and Physical Sciences**

Topic	Resources	CCSS
Earth's water is all around and moves in a regular cycle that influences weather. (water cycle, weather, wetlands, freshwater)	District Supported Textbook District Supported Supplemental Resources	3.3.4.A4.;3.3.4.A5.;3.3.4.A6.;4.2.4.A.; 3.2.4A5.
Objects in space (Sun, Earth, and Moon) move in regular and observable patterns.	District Supported Textbook District Supported Supplemental Resources	3.3.4.B1.;3.3.4.B2.;
The physical properties of matter can be used to describe and categorize objects.	District Supported Textbook District Supported Supplemental Resources	3.2.4.A1.; 3.2.4.A2.; 3.2.4A3.; 3.2.4A4.
Light, heat, and electricity are useful forms of energy that can be transferred and flow through an object or system.	District Supported Textbook District Supported Supplemental Resources	3.2.4.B3.; 3.2.4.B4.; 3.2.4.B5; 3.2.4.B6
Vibrations can cause sound, which travel in wave form. (pitch, loudness, and reflection)	District Supported Textbook District Supported Supplemental Resources	3.2.4.B5; 3.2.4.B6
Motion can be measured and described. It is influenced by forces such as gravity, magnetism, pushes or pulls, and friction.	District Supported Textbook District Supported Supplemental Resources	3.2.4.B1.; 3.2.4.B2.; 3.2.4.B6

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General Topic	Academic Standard(s)	Project Based Learning Options	Project Requirements	Resources & Activities
<b>Quarter 1</b>  <b>Getting Ready for Science</b>	4.A.2.1.1 4.A.2.1.2 4.A.2.2.1 4.A.1.3.1 4.A.2.1.3 4.A.3.2.1 4.A.3.3.1 4.D.2.1.2	<b>Scientific Method Experiments:</b> <ul style="list-style-type: none"> <li>● Dissolving candy canes, candy corns, etc.</li> <li>● Model volcano</li> <li>● Sandwich Science (growing mold)</li> <li>● Design your own project</li> </ul>	<b>Choose one of the Scientific Method Experiments</b>	<b>Shared Google Drive (resources &amp; worksheets)</b>
		<b>Quarterly Projects:</b> ~ Grade level science fair ~ Create a model of both animal and plant cells ~ Plant and Animal Life Cycles:	<b>Choose one of the quarterly projects</b>	
<b>Biological Sciences: Classifications Life Cycles</b>	3.4.1.A1 3.1.4.B5 3.1.4.C3 3.1.4.A3 3.1.4.A8 3.1.4.B1 3.1.4.B2	<ul style="list-style-type: none"> <li>● Sponge experiment: lima beans, radish, etc.</li> <li>● Hatch chicks or fish</li> <li>● Grow butterflies</li> </ul>		

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General Topic	Academic Standard(s)	Project Based Learning Options	Project Requirements	Resources & Activities
<b>Biological Sciences: Animal Structure &amp; Function</b>	<b>3.1.4.A5 3.1.4.C1 3.1.4.C2 4.5.4.D 4.3.4.A 3.1.4.A1 3.1.4.B5 3.1.4.C3</b>	<b>~Animal Research Project:</b> <ul style="list-style-type: none"> <li>● Build a model of animal</li> <li>● Create a diorama of animal habitat</li> <li>● Create a detailed poster</li> <li>● Create a powerpoint presentation</li> <li>● Create a video presentation</li> <li>● Design your own project</li> </ul>		<b>Shared Google Drive (resources &amp; worksheets)</b>
<b>Plant Structure and Function</b>	<b>3.1.4.A3 3.1.4.A8 3.1.4.B1</b>	<b>~ Vascular plant experiment: colored carnations, celery, etc.</b>		
<b>Relationship between living and nonliving things</b>	<b>4.1.4.A 4.4.4.B</b>	<b>~ Build a terrarium</b>		
<b>Human reliance on the environment</b>	<b>4.1.4.E 4.4.4.A 4.4.4.B 4.4.4.D 4.5.4.C 4.3.4.D</b>	<b>~ Upcycling Project</b>		

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General Topic	Academic Standard(s)	Project Based Learning Options	Project Requirements	Resources & Activities
<b>Quarter 3</b>		<b>Water Cycle Project:</b> <ul style="list-style-type: none"> <li>● Cloud in a bottle</li> <li>● Water cycle in a bag</li> <li>● Water cycle poster</li> <li>● Design your own project</li> </ul>	Choose one of the Water Cycle Projects	Shared Google Drive (resources & worksheets)
Earth Science: Identify and describe different patterns in the water cycle.	3.3.4.A5			
Weather conditions and how they are measured	3.3.4.A6 3.3.4.A6	<b>Quarterly Project:</b> ~ Types of clouds poster ~ Weather observation chart ~ Construct weather tools	Choose one of the quarterly projects	
Earth's relationship to the Sun and Moon	3.3.4.B1	~ Moon phases model (oreos, clay, etc.)		
Physical Science: Principles of Motion and Force	3.2.4.B1	~ Egg drop competition		
Forms, Sources, Conversion, and Transfer of Energy	3.2.4.B5	~ Circuit boards		



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General Topic	Academic Standard(s)	Essential Knowledge, Skills & Vocabulary	Resources & Activities	Assessments	Suggested Time
<b>1st Quarter</b>					<b>12 Weeks</b>
~ Getting Ready for Science	4.A.2.1.1 4.A.2.1.2 4.A.2.2.1. 4.A.1.3.1. 4.A.2.1.3. 4.A.2.1.4. 4.A.3.2.1-3 4.A.3.3.1 4.D.2.1.2	Generate questions about objects, organisms, or events that can be answered through scientific investigations. <ul style="list-style-type: none"> <li>● Claim</li> <li>● Experiment</li> <li>● Hypotheses</li> <li>● Inquiry</li> <li>● Investigation</li> </ul>	HSP Science Getting Ready For Science  Buckle Down Unit 1 Review 1  PA Coach Ch 1	Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.	<b>2 days</b>
	4.A.2.1.1 4.A.2.1.2 4.A.2.2.1 4.A.1.3.1 4.A.2.1.3 4.A.2.1.4 4.A.3.2.1-3 4.A.3.3.1 4.D.2.1.2	Design and describe an investigation (a fair test) to test one variable. <ul style="list-style-type: none"> <li>● Controlled variable</li> <li>● Data</li> <li>● Dependent variable</li> <li>● Hypothesis</li> <li>● Independent variable</li> <li>● Observation</li> <li>● variable</li> </ul>	HSP Science Getting Ready For Science  Buckle Down Unit 1 Review 1  PA Coach Ch 1		<b>2 days</b>

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	<p>4.A.2.1.1 4.A.2.1.2 4.A.2.2.1 4.A.1.3.1 4.A.2.1.3 4.A.2.1.4 4.A.3.2.1-3 4.A.3.3.1 4.D.2.1.2</p>	<p><b>State a conclusion that is consistent with the information/data.</b></p> <ul style="list-style-type: none"> <li>● Conclusion</li> <li>● Evidence</li> <li>● Inference</li> <li>● Error</li> <li>● Bar graph</li> <li>● Circle graph</li> <li>● Data</li> <li>● Interpret</li> <li>● Journal</li> <li>● Line graph</li> <li>● Model</li> <li>● System</li> <li>● Table</li> </ul>	<p>HSP Science Getting Ready For Science</p> <p>Buckle Down Review 3</p> <p>PA Coach Ch 1</p>		<p><b>2 days</b></p>
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	<p>4.A.2.1.1 4.A.2.1.2 4.A.2.2.1 4.A.1.3.1 4.A.2.1.3 4.A.2.1.4 4.A.3.2.1-3 4.A.3.3.1 4.D.2.1.2</p>	<p><b>Identify appropriate tools or instruments for specific tasks and describe the information they can provide (e.g., measuring: length-ruler, mass-balance scale, volume-beaker, temperature-thermometer; making observations: hand lens, binoculars, telescope).</b></p> <ul style="list-style-type: none"> <li>● Instrument</li> <li>● Balance</li> <li>● Graduated cylinder</li> <li>● Hand lens</li> <li>● Meter stick</li> <li>● Microscope</li> <li>● Ruler</li> <li>● Telescope</li> <li>● Thermometer</li> <li>● Magnify</li> <li>● Estimate</li> <li>● U.S. Customary System</li> </ul>	<p>HSP Science Getting Ready For Science</p> <p>Buckle Down Unit 1 Review 2</p> <p>PA Coach Ch 1</p>		<p><b>2 days</b></p>
	<p>4.A.2.1.1. 4.A.2.1.2. 4.A.2.2.1. 4.A.1.3.1. 4.A.2.1.3. 4.A.2.1.4. 4.A.3.2.1-3. S4.A.3.3.1. 4.D.2.1.2.</p>	<p><b>Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations).</b></p> <ul style="list-style-type: none"> <li>● Fact</li> <li>● Opinion</li> </ul>	<p>HSP Science Getting Ready For Science</p> <p>Buckle Down Unit 1 Review 1</p> <p>PA Coach Ch 1</p>		<p><b>1 days</b></p>

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<p><b>Biological Sciences</b> ~ Classifications</p>	<p><b>3.1.4.A1.</b> <b>3.1.4.B5.</b> <b>3.1.4.C3.</b></p>	<p><b>Describe basic needs of plants and animals (e.g., air, water, food).</b></p> <ul style="list-style-type: none"> <li>● Cell</li> <li>● Organism</li> <li>● Nutrients</li> <li>● Shelter</li> <li>● Thrive</li> </ul>	<p><b>HSP Science Chapter 1</b></p> <p><b>Buckle Down Unit 2 Review 4</b></p> <p><b>PA Coach Ch 2</b></p>	<p><b>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</b></p>	<p><b>5 days</b></p>
<p>~ Life processes</p>	<p><b>3.4.4.E1</b></p>	<p><b>Identify life processes of living things (e.g., growth, digestion, respiration).</b></p> <ul style="list-style-type: none"> <li>● Digestion</li> <li>● Respiration</li> <li>● Chemical energy</li> </ul>	<p><b>HSP Science Chapter 4</b></p> <p><b>Buckle Down Unit 2 Review 4</b></p> <p><b>PA Coach Ch 2</b></p>	<p><b>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</b></p>	<p><b>2 days</b></p>

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<p>~ Heredity</p>	<p>3.1.4.A3. 3.1.4.A8. 3.1.4.B1. 3.1.4.B2.</p>	<p>Identify physical characteristics (e.g., height, hair color, eye color, attached earlobes, ability to roll tongue) that appear in both parents and could be passed onto offspring.</p> <ul style="list-style-type: none"> <li>● Characteristics</li> <li>● Heredity</li> <li>● Behavior</li> <li>● Instinct</li> <li>● Learned behavior</li> <li>● Life cycle</li> <li>● Life span</li> <li>● Offspring</li> <li>● Reproduce</li> <li>● Reproduction</li> <li>● Trait</li> <li>● Species</li> </ul>	<p>HSP Science Chapter 2</p> <p>Buckle Down Unit 2 Review 5</p> <p>PA Coach Ch 2</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	<p>5 days</p>
	<p>3.1.4.A3. 3.1.4.A8. 3.1.4.B1. 3.1.4.B2</p>	<p>Describe the life cycles of different organisms (e.g., moth, grasshopper, frog, seed-producing plant).</p> <ul style="list-style-type: none"> <li>● Life cycle</li> <li>● Pupa</li> <li>● Larva</li> <li>● Reproduce</li> <li>● Reproduction</li> <li>● Species</li> <li>● Metamorphosis</li> <li>● Direct development</li> </ul>	<p>HSP Science Chapter 2</p> <p>Buckle Down Unit 2 Review 5</p> <p>PA Coach Ch 2</p>		<p>5 days</p>

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<p>~ Plant structure and function</p>	<p>3.1.4.A3. 3.1.4.A8. 3.1.4.B1. 3.1.4.B2.</p>	<p>Describe how different parts of a living thing work together to provide what the organism needs (e.g., parts of plants: roots, stems, leaves).</p> <ul style="list-style-type: none"> <li>● Root</li> <li>● Seed</li> <li>● Stem</li> <li>● Leaf</li> <li>● Flower</li> <li>● Pollen</li> <li>● Fruit</li> <li>● Photosynthesis</li> </ul>	<p>HSP Science Chapter 1</p> <p>Buckle Down Unit 2 Review 6</p> <p>PA Coach Ch 2</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	<p>2 days</p>
<p>~ Identify and make observations about patterns that regularly occur and reoccur in nature.</p>	<p>4.A.3.3</p>	<p>Identify and describe observable patterns (e.g., growth patterns in plants).</p>	<p>HSP Science Chapter 2</p> <p>Buckle Down Unit 2</p> <p>PA Coach Ch 2</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	<p>1 day</p>

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~ Adaptations	3.1.4.A5. 3.1.4.C1. 3.1.4.C2. 4.5.4.D. 4.3.4.A.	Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest). <ul style="list-style-type: none"> <li>● Adaptations</li> <li>● Instinct</li> <li>● Internal stimulus</li> <li>● External stimulus</li> <li>● Stimulus</li> <li>● Hibernation</li> <li>● Habitat</li> <li>● Competition</li> </ul>	HSP Science Chapter 3  Buckle Down Unit 2 Review 7  PA Coach Ch 2	Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.	4-5 days
~ Animal structure and function	3.1.4.A5. 3.1.4.C1. 3.1.4.C2. 4.5.4.D. 4.3.4.A.	Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water). <ul style="list-style-type: none"> <li>● Camouflage</li> <li>● Exoskeleton</li> <li>● Mimicry</li> <li>● Predator</li> </ul>	HSP Science Chapter 3  Buckle Down Unit 2  PA Coach Ch 2		4-5 days
	3.1.4.A1. 3.1.4.B5. 3.1.4.C3.	Compare similar functions of external characteristics of organisms (e.g., appendages, type of covering, body segments). <ul style="list-style-type: none"> <li>● Exoskeleton</li> </ul>	HSP Science Chapter 1  Buckle Down Unit 2 Review 6  PA Coach Ch 2		

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	<p>3.1.4.A5. 3.1.4.C1. 3.1.4.C2. 4.5.4.D. 4.3.4.A.</p>	<p>Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else).</p> <ul style="list-style-type: none"> <li>● Migration</li> <li>● Extinct</li> <li>● Overpopulation</li> </ul>	<p>HSP Science Chapter 3 Buckle Down Unit 2</p> <p>PA Coach Ch 2</p>		
~ Interaction between living and nonliving things	<p>4.1.4.A. 4.4.4.B.</p>	<p>Describe the living and nonliving components of a local ecosystem (e.g., lentic and lotic systems, forest, cornfields, grasslands, city park, playground).</p> <ul style="list-style-type: none"> <li>● Ecosystem</li> </ul>	<p>HSP Science Chapter 5 Buckle Down Unit 2 –Review 4</p> <p>PA Coach Ch 2</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments etc.</p>	2 days
~ Relationships between living and nonliving things	<p>4.1.4.A. 4.4.4.B.</p>	<p>Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system.</p>	<p>HSP Science Chapter 5 Buckle Down Unit 2 –Review 4</p> <p>PA Coach Ch 2</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	2 days



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	<p><b>4.1.4.A. 4.4.4.B.</b></p>	<p><b>Explain a relationship between the living and nonliving components in a system (e.g., terrarium)</b></p> <ul style="list-style-type: none"> <li>● <b>Terrarium</b></li> </ul>	<p><b>HSP Science Chapter 5 Buckle Down Unit 2 –Review 4 PA Coach Ch 2</b></p>		
	<p><b>4.1.4.A. 4.4.4.B.</b></p>	<p><b>Describe interactions between living and nonliving components (e.g., plants-water, soil, sunlight, carbon dioxide, temperature, animals-food, water, shelter, oxygen, temperature) of a local ecosystem.</b></p>	<p><b>HSP Science Chapter 5 Buckle Down Unit 2 –Review 4 PA Coach Ch 2</b></p>		
	<p><b>4.A.3.2</b></p>	<p><b>Use appropriate, simple modeling tools and techniques to describe or illustrate a system (e.g., two cans and string to model a communications system, terrarium to model an ecosystem).</b></p> <ul style="list-style-type: none"> <li>● <b>Terrarium</b></li> <li>● <b>Communication technology</b></li> </ul>	<p><b>HSP Science Chapter 5 Buckle Down Unit 2 –Review 4 PA Coach Ch 1</b></p>		

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~ Changes and effects in natural or human-made systems	4.1.4.A 4.4.4B	Describe what happens to a living thing when its habitat is changed. <ul style="list-style-type: none"> <li>● Endangered species</li> <li>● Overpopulation</li> <li>● Pollution</li> </ul>	HSP Science Chapter 5 Buckle Down Unit 2 –Review 7  PA Coach Ch 2	Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.	5 days
	4.1.4.A 4.4.4.B	Describe and predict how changes in the environment (e.g., fire, pollution, flood, building dams) can affect systems.	HSP Science Chapter 5 Buckle Down Unit 2 –Review 7  PA Coach Ch 2		
	4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2	Explain and predict how changes in seasons affect plants, animals, or daily human life (e.g., food, availability, shelter, mobility).	HSP Science Chapter 5  Buckle Down Unit 2 –Review 7  PA Coach Ch 2		

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	<p>4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2</p>	<p>Identify everyday human activities (e.g., driving, washing, eating, manufacturing, farming) within a community that depend on the natural environment.</p>	<p>HSP Science Chapter 5 Buckle Down Unit 5 –Review 17  PA Coach Ch 2</p>		
	<p>4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2</p>	<p>Provide examples, predict, or describe how everyday human activities (e.g., solid waste production, food production and consumption, transportation, water consumption, energy production and use) may change the environment.</p>	<p>HSP Science Chapter 5 Buckle Down Unit 5 –Review 16  PA Coach Ch 2</p>		

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<b>~ Technology</b>	<b>4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2</b>	<b>Identify and describe examples of common technological changes past to present in the community (e.g., energy production, transportation, communications, agriculture, packaging materials) that have either positive or negative impacts on society or the environment.</b> <ul style="list-style-type: none"> <li>● <b>Communication technology</b></li> <li>● <b>Mass production</b></li> <li>● <b>Society</b></li> <li>● <b>Technology</b></li> <li>● <b>Agriculture</b></li> <li>● <b>Recycle</b></li> <li>● <b>Pollution</b></li> <li>● <b>Alternative energy resource</b></li> <li>● <b>Geothermal energy</b></li> <li>● <b>Solar energy</b></li> </ul>	<b>HSP Science Spin Weekly Reader Page 594-595 And Chapter 15 Lesson 3</b>  <b>Buckle Down Unit 5 –Review 15 And Review 17</b>	<b>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</b>	<b>5 days</b>
	<b>4.A.1.3</b>	<b>Observe and record change by using time and measurement.</b>	<b>Buckle Down Unit 1 –Review 2</b>		

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~ Human reliance on the environment	4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2	Identify everyday human activities (e.g., driving, washing, eating, manufacturing, farming) within a community that depend on the natural environment. <ul style="list-style-type: none"> <li>• Agriculture</li> </ul>	Buckle Down Unit 5 –Review 17	Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.	1 day
	4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2	Describe the human dependence on the food and fiber systems from production to consumption (e.g., food, clothing, shelter, products).	Buckle Down Unit 5 –Review 17		
	4.1.4.E 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2	Identify biological pests (e.g., fungi-molds, plants,-foxtail, purple loosestrife, Eurasian water milfoil; animals-aphids, ticks, zebra mussels, starlings, mice) that compete with humans for resources. <ul style="list-style-type: none"> <li>• Biological pests</li> <li>• Competition</li> </ul>	HSP Science PA Excursion Page 44-45  Buckle Down Unit 5 –Review 16		1 day

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	4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2	Identify major land uses in the urban, suburban and rural communities (e.g., housing, commercial, recreation).			1 day
	4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2	Describe the effects of pollution (e.g., litter) in the community. <ul style="list-style-type: none"> <li>● Pollution</li> <li>● Global warming</li> <li>● Greenhouse gases</li> </ul>	HSP Science Chapter 5 Buckle Down Unit 5 –Review 17		2 days
~ Identify systems and describe relationships among parts of a familiar system (e.g., digestive system, simple machines, water cycle).	4.1.4.E. 4.4.4.A. 4.4.4.B. 4.4.4.D. 4.5.4.C. 4.3.4.D. 4.5.4.E. 3.4.4.E2	Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle).	Buckle Down Unit 1 –Review 3		1 day
	3.1.4.A2 4.1.4.C	Identify the parts of the food and fiber systems as they relate to agricultural products from the source to the consumer.			1 day
~ Energy Transfer in Ecosystems	3.1.4.A2 4.1.4.C	Explain a relationship between the living and nonliving components in a system (e.g., food web).	HSP Science Chapter 6		2 days

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3rd Quarter					12 Weeks
Earth Science ~ Landforms	3.3.4.A1	<p>Describe how prominent Earth features in Pennsylvania (e.g., mountains, valleys, caves, sinkholes, lakes, rivers) were formed.</p> <ul style="list-style-type: none"> <li>● Watershed</li> <li>● Peninsula</li> <li>● Valley</li> </ul>	<p>HSP Science Chapter 7 and Pa Excursion pg 42-43</p> <p>Buckle Down Unit 4 Review 11</p> <p>Also, see Houghton Mifflin PA Studies</p> <p>PA Coach Ch 4</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	4-5 days
	3.3.4.A6	<p>Identify various Earth structures (e.g., mountains, watersheds, peninsulas, lakes, rivers, valleys) through the use of models.</p> <ul style="list-style-type: none"> <li>● Map</li> <li>● Contour line</li> <li>● Elevation</li> <li>● Topographic map</li> </ul>	<p>HSP Science Chapter 8</p> <p>Buckle Down Unit 4 Review 11</p>		

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	<b>3.3.4.A1</b> <b>3.3.4.A3</b> <b>4.4.4C</b>	<b>Describe the composition of soil as weathered rock and decomposed organic remains.</b> <ul style="list-style-type: none"> <li>● Organic</li> <li>● Bedrock</li> <li>● Weathering</li> <li>● Sediments</li> <li>● Erosion</li> <li>● Humus</li> <li>● Soil</li> <li>● Topsoil</li> <li>● Sand</li> <li>● Silt</li> <li>● Clay</li> <li>● Mineral</li> </ul>	<b>HSP Science Chapter 7</b>  <b>Buckle Down Unit 4 –Review 11</b>		<b>2 days</b>
~ Earth's resources	<b>4.3.4.A</b>	<b>Identify products and by-products of plants and animals for human use (e.g., food, clothing, building, materials, paper products).</b>		<b>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</b>	<b>1 days</b>



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	<b>4.5.4A</b>	<p><b>Identify the types and uses of Earth materials for renewable, nonrenewable, and reusable products (e.g., human-made products, concrete, paper, plastic, fabrics)</b></p> <ul style="list-style-type: none"> <li>● Natural resource</li> <li>● Nonrenewable resource</li> <li>● Renewable resource</li> <li>● Fossil fuels</li> </ul>	<p>HSP Science Chapter 15</p> <p>Buckle Down Unit 5 Review 16</p> <p>PA Coach Ch 4</p>		<b>2 days</b>
		<p><b>Recognize ways that humans benefit from the use of water resources (e.g., agriculture, energy, recreation)</b></p>	<p>HSP Science chapter 15 pg. 636</p> <p>Buckle Down Unit 4 Review 11</p>		<b>1 day</b>
~ Earth's water (sources and changes in form)	<b>3.3.4.A4</b>	<p><b>Describe types of freshwater and saltwater bodies (e.g., lakes, rivers, wetlands, oceans).</b></p> <ul style="list-style-type: none"> <li>● Ground water</li> <li>● Runoff</li> <li>● Aquifer</li> </ul>	<p>HSP Science chapter 9</p> <p>Buckle Down Unit 4 Review 11</p> <p>PA Coach Ch 4</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	<b>4-5 days</b>

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	3.3.4.A4	<p>Explain how water goes through phase changes (i.e., evaporation, condensation, freezing, and melting).</p> <ul style="list-style-type: none"> <li>● Condense</li> </ul>	<p>HSP Science chapter 9</p> <p>Buckle Down Unit 4 Review 12</p> <p>PA Coach Ch 4</p>		
	4.2.4.A	<p>Describe or compare lentic systems (i.e., ponds, lakes, and bays) and lotic systems (i.e., streams, creeks, and rivers).</p> <ul style="list-style-type: none"> <li>● Lentic system</li> <li>● Lotic system</li> <li>● Watershed</li> </ul>	<p>Buckle Down Unit 4 Review 12</p>		
	3.3.4.A4 4.2.4.A	<p>Explain the role and relationship of a watershed or wetland on water sources (e.g., water storage, groundwater recharge, water filtration, water source, water cycle).</p> <ul style="list-style-type: none"> <li>● Water cycle</li> <li>● Condensation</li> <li>● Evaporation</li> <li>● Precipitation</li> <li>● Runoff</li> <li>● Water vapor</li> <li>● Aquifer</li> <li>● Atmosphere</li> <li>● Hydrosphere</li> </ul>	<p>Buckle Down Unit 4 Review 12</p> <p>PA Coach Ch 4</p>		

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~ Identify and make observations about patterns that regularly occur and reoccur in nature.	3.3.4.A5	Identify and describe observable patterns water cycle.	HSP Science chapter 9 Buckle Down Unit 4 Review 12  PA Coach Ch 4	Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.	2 days
~ Use models to illustrate simple concepts and compare the models to what they represent.	3.3.4.A7	Use models to make observations to explain how systems work (e.g., water cycle).	HSP Science chapter 9 Buckle Down Unit 4 Review 12  PA Coach Ch 1 & 4		
~ Use models to illustrate simple concepts and compare the models to what they represent.	3.3.4.A6	Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas). <ul style="list-style-type: none"> <li>● Topographic map</li> <li>● Map</li> </ul>	Buckle Down Unit 4 Review 11		1 day

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<p>~ Weather conditions and how they are measured</p>	<p>3.3.4.A6</p>	<p>Identify basic cloud types (i.e., cirrus, cumulus, stratus, and cumulonimbus) and make connections to basic elements of weather (e.g., changes in temperature, precipitation).</p> <ul style="list-style-type: none"> <li>● Cirrus</li> <li>● Cumulonimbus</li> <li>● Cumulus</li> <li>● Status</li> <li>● Precipitation</li> <li>● Sleet</li> <li>● Snow</li> <li>● Hail</li> <li>● Meteorologist</li> <li>● Meteorology</li> <li>● Humidity</li> <li>● Water cycle</li> </ul>	<p>HSP Science Chapter 9</p> <p>Buckle Down Unit 4 Review 13</p> <p>PA Coach Ch 4</p>		<p>4-5 days</p>
<p>~ Identify and make observations about patterns that regularly occur and reoccur in nature.</p>	<p>3.3.4.A6</p>	<p>Identify weather patterns from data charts or graphs of the data (e.g., temperature, wind direction, wind speed, cloud types, precipitation).</p> <ul style="list-style-type: none"> <li>● Air pressure</li> <li>● Barometric pressure</li> <li>● High-pressure system</li> <li>● Low-pressure system</li> <li>● Forecast</li> </ul>	<p>HSP Science Chapter 9</p> <p>Buckle Down Unit 4 Review 13</p> <p>PA Coach Ch 4</p>		<p>4-5 days</p>

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	<b>3.3.4.A6</b>	<p><b>Identify appropriate instruments (i.e., thermometer, rain gauge, weather vane, anemometer, and barometer) to study weather and what they measure.</b></p> <ul style="list-style-type: none"> <li>● Anemometer</li> <li>● Barometer</li> <li>● Rain gauge</li> <li>● Weather vane</li> <li>● Thermometer</li> </ul>	<p>HSP Science Chapter 9</p> <p>Buckle Down Unit 4 Review 13</p> <p>PA Coach Ch 4</p>		
	<b>3.3.4.A6</b>	<p><b>Identify and describe observable patterns (e.g weather).</b></p>	<p>HSP Science Chapter 9</p> <p>Buckle Down Unit 4 Review 13</p> <p>PA Coach Ch 4</p>		
~ Earth's relationship to the Sun and the Moon	<b>3.3.4.B1</b>	<p><b>Describe motions of the Sun-Earth-Moon system.</b></p>	<p>HSP Science Chapter 10</p> <p>Buckle Down Unit 4 Review 14</p> <p>PA Coach Ch 4</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	4-5 days

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	<b>3.3.4.B2</b>	<b>Explain how the motion of the Sun-Earth-Moon system relates to time (e.g., days, months, years).</b>	HSP Science Chapter 10  Buckle Down Unit 4 Review 14  PA Coach Ch 4		
	<b>3.3.4.B2</b>	<b>Describe the causes of seasonal change as they relate to the revolution of Earth and the tilt of Earth's axis.</b> <ul style="list-style-type: none"> <li>● Axis</li> <li>● Seasons</li> </ul>	HSP Science Chapter 10  Buckle Down Unit 4 Review 14  PA Coach Ch 4		
<b>~ Identify and make observations about patterns that regularly occur and reoccur in nature.</b>	<b>3.3.4.B2</b>	<b>Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, lunar phases).</b> <ul style="list-style-type: none"> <li>● Seasons</li> <li>● Axis</li> <li>● Rotation</li> <li>● Revolution</li> <li>● Northern hemisphere</li> <li>● Southern hemisphere</li> </ul>	HSP Science Chapter 10  Buckle Down Unit 4 Review 14  PA Coach Ch 4		

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<p>~ Use models to illustrate simple concepts and compare the models to what they represent.</p>	<p>3.3.4.B1 3.3.4.B2</p>	<p>Use models to make observations to explain how systems work (e.g., Sun-Earth-Moon system).</p> <ul style="list-style-type: none"> <li>● Solar system</li> <li>● Gravity</li> <li>● Revolve</li> <li>● Orbit</li> </ul>	<p>HSP Science Chapter 10</p> <p>Buckle Down Unit 4 Review 14</p> <p>PA Coach Ch 4</p>		<p>1 day</p>
<p>Physical Sciences ~ Structure, Properties, and Interaction of Matter and Energy</p>	<p>3.2.4.A1 3.2.4.A2 3.2.4.A3</p>	<p>Use physical properties (e.g., mass, shape, size, volume, color, texture, magnetism, state (i.e., solid, liquid, and gas), conductivity (i.e., electrical and heat) to describe matter.</p> <ul style="list-style-type: none"> <li>● Conduct</li> <li>● Conductivity</li> <li>● Matter</li> <li>● Property</li> <li>● Mass</li> <li>● State</li> <li>● Volume</li> <li>● Magnetism</li> </ul>	<p>HSP Science Chapter 11 Lesson 1 &amp; 2</p> <p>Buckle Down Unit 3 Review 8</p> <p>PA Coach Ch 3</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	<p>4-5 days</p>

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	<b>3.2.4.A1</b>	<b>Categorize/group objects using physical characteristics</b> <ul style="list-style-type: none"> <li>● Classification</li> </ul>	<b>HSP Science Chapter 11 Lesson 1 &amp; 2</b>  <b>Buckle Down Unit 3 Review 8</b>  <b>PA Coach Ch 3</b>		
<b>~ Forms, Sources, Conversion, and Transfer of Energy</b>	<b>3.2.4.B2 3.2.4.B3 3.2.4.B6</b>	<b>Identify energy forms, energy transfer, and energy examples (e.g., light, heat, electrical).</b> <ul style="list-style-type: none"> <li>● Heat energy</li> <li>● Chemical energy</li> <li>● Mechanical energy</li> <li>● Transfer</li> <li>● Light</li> <li>● Luminous</li> <li>● Reflect</li> <li>● Refract</li> <li>● Energy</li> <li>● Translucent</li> <li>● Transparent</li> <li>● Opaque</li> <li>● Light ray</li> <li>● Electricity</li> <li>● Static electricity</li> </ul>	<b>HSP Science Chapter 14</b>  <b>Buckle Down Unit 3 Review 9</b>  <b>PA Coach Ch 3</b>	<b>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</b>	<b>4-5 days</b>



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	<b>3.2.4.B6</b>	<b>Observe and describe the change to objects caused by temperature change or light.</b>	<b>Buckle Down Unit 3 Review 9</b>		
	<b>3.2.4.B2 3.2.4.B3 3.2.4.B4 3.2.4.B5 3.2.4.B6</b>	<b>Describe the flow of energy through an object or system (e.g., feeling radiant heat from a light bulb, eating food to get energy, using a battery to light a bulb or run a fan).</b> <ul style="list-style-type: none"> <li>● <b>Chemical energy</b></li> </ul>	<b>HSP Science Chapter 14</b>  <b>Buckle Down Unit 3 Review 9</b>  <b>PA Coach Ch 3</b>		<b>4-5 days</b>
	<b>3.2.4.B4</b>	<b>Recognize or illustrate simple direct current series and parallel circuits composed of batteries, light bulbs (or other common loads), wire, and on/off switches.</b> <ul style="list-style-type: none"> <li>● <b>Circuit</b></li> <li>● <b>Closed circuit</b></li> <li>● <b>Open circuit</b></li> <li>● <b>Parallel circuit</b></li> <li>● <b>Series circuit</b></li> </ul>	<b>HSP Science Chapter 15 Lesson 1</b>  <b>Buckle Down Unit 3 Review 9</b>		
	<b>3.2.4.B5</b>	<b>Identify characteristics of sound (e.g. pitch, loudness, reflection).</b> <ul style="list-style-type: none"> <li>● <b>Pitch</b></li> <li>● <b>Vibration</b></li> <li>● <b>Sound</b></li> <li>● <b>Frequency</b></li> </ul>	<b>HSP Science Chapter 13</b>  <b>Buckle Down Unit 3 Review 9</b>  <b>PA Coach Ch 3</b>		

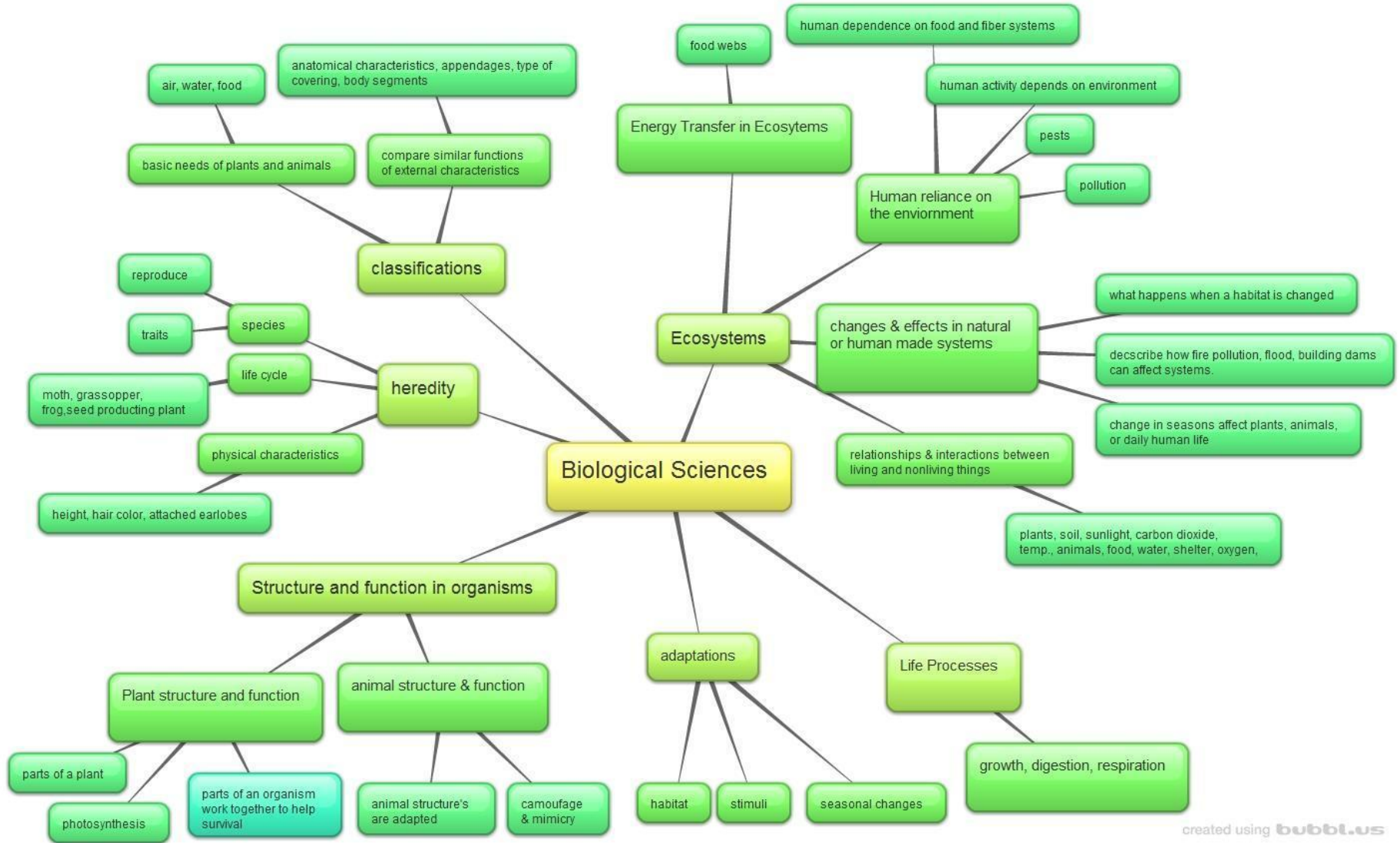
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~ Principles of Motion and Force	3.2.4.B1	<p>Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).</p> <ul style="list-style-type: none"> <li>● Magnetism</li> <li>● Force</li> <li>● Contact force</li> <li>● Friction</li> <li>● Gravity</li> <li>● Magnet Poles</li> </ul>	<p>HSP Science Chapter 15 Lesson 2 &amp; Chapter 16</p> <p>Buckle Down Unit 3 Review 10</p>	<p>Hands-on inquiry based activities, science notebooks, series resources, teacher prepared assessments, etc.</p>	8-10 days
	3.2.4.B1	<p>Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).</p> <ul style="list-style-type: none"> <li>● Relative motion</li> <li>● Noncontact force</li> </ul>	<p>HSP Chapter 16 Lesson 1</p> <p>Buckle Down Unit 3 Review 10</p> <p>PA Coach Ch 3</p>		
	3.2.4.B1	<p>Describe the position of an object by locating it relative to another object or a stationary background (e.g., geographic direction, left, up).</p> <ul style="list-style-type: none"> <li>● Relative motion</li> <li>● Speed</li> </ul>	<p>HSP Chapter 16 Lesson 1</p> <p>Buckle Down Unit 3 Review 10</p> <p>PA Coach Ch 3</p>		

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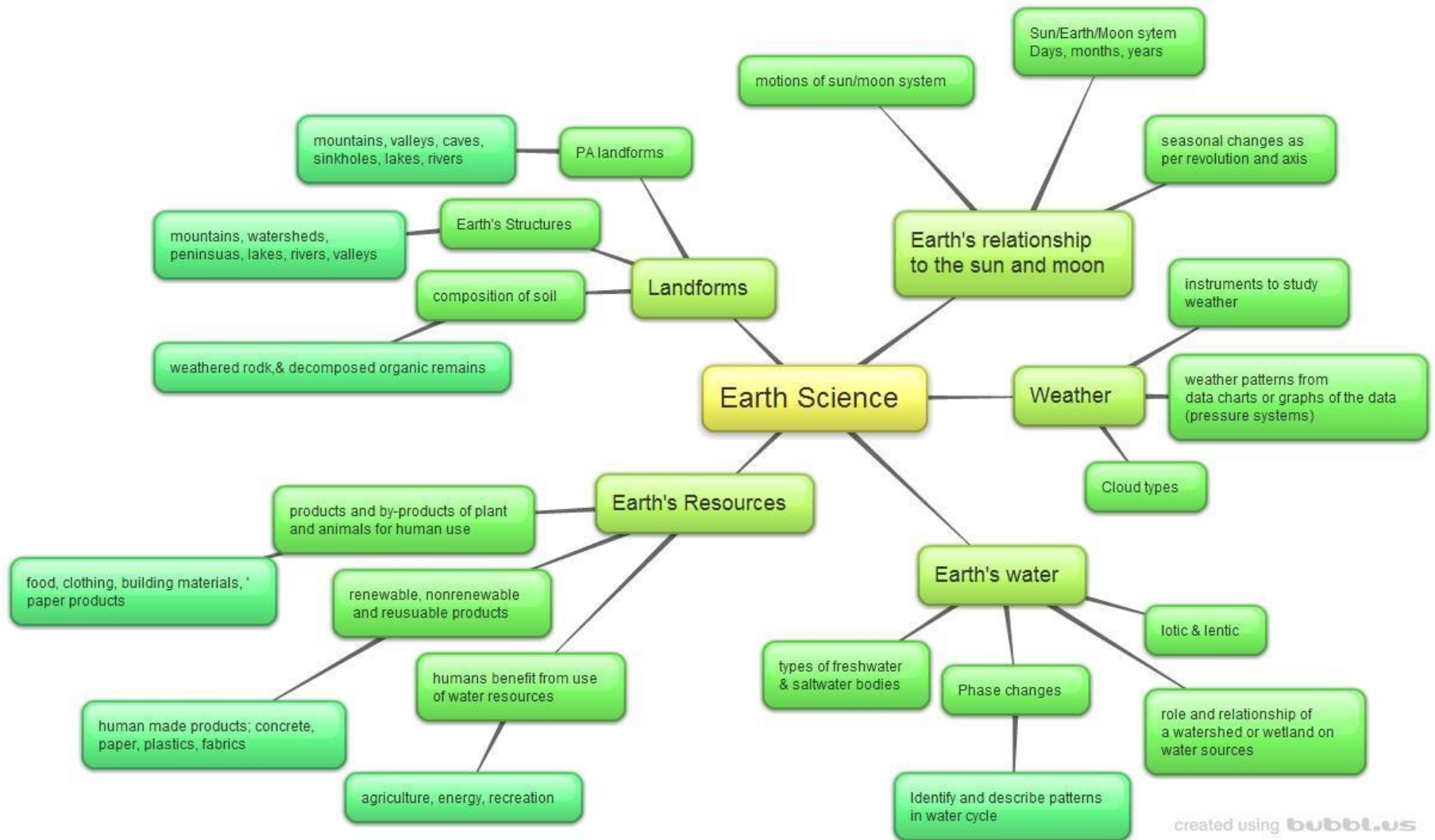
	<b>4.A.1.3</b>	<b>Observe and record change by using time and measurement.</b>	<b>Buckle Down Unit 1 –Review 2</b>		
	<b>4.A.1.3</b>	<b>Describe relative size, distance, or motion.</b>	<b>Buckle Down Unit 3 –Review 10</b>		
<b>~ Review</b>		<b>Use any remaining time to review content and test skills.</b>			

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