

**4th Grade Science**  
**PISD Curriculum: Year at a Glance**

<b>Overarching Themes: *Patterns *Cycles *Systems *Models *Change and Constancy</b>		
<b>Bundle</b>	<b>Title</b> Enduring Understanding	<b>Guiding Questions</b>
1	<p><b><i>Safety, Processes, &amp; Notebooks</i></b></p> <p>Students record, develop and share learning, using their science notebook as a storehouse for experiences, ideas and questions.</p> <p>Making responsible choices in the use of tools and materials and attending to possible hazards in all indoor and outdoor environments can ensure safe learning and conservation of resources in the natural world.</p> <p>Science is an ongoing cycle of questioning and problem solving.</p> <p>Identifying patterns of sunlight and shadows on the Earth supports understanding of the movement of the Sun, Earth and Moon.</p>	<p>How does a science notebook support science literacy and lifelong learning?</p> <p>What important practices help ensure safe field investigations?</p> <p>Why do we need to be careful when we are doing classroom or outdoor investigations?</p> <p>How do we organize our thoughts, information, connections, and other data?</p> <p>What skills and tools do we use as scientists?</p>
2	<p><b><i>Relationships of the Sun, Earth, and Moon Systems</i></b></p> <p>The sun, moon, and earth system can create predictable and recognizable patterns of change.</p>	<p>How do the Sun, Moon, and Earth move and interact to create patterns such as seasonal change and tidal movement? (continued from Bundle 1)</p> <p>What causes the pattern of the phases of the moon?</p> <p>How does the movement of the Earth create seasonal weather patterns?</p>
3	<p><b><i>Weather &amp; Representing Weather Patterns</i></b></p> <p>Water continuously moves through a cycle on the Earth that allows this life giving resource to be used and used again.</p> <p>The sun is the energy source for the water cycle, as well as for all life on Earth.</p> <p>Weather has recognizable patterns of change caused by the interaction of the Sun with the Earth.</p> <p>Weather data is measured and recorded to help define patterns and predict changes that inform personal decisions.</p>	<p>How does water move through the water cycle?</p> <p>What is the Sun's role in weather?</p> <p>How does the water cycle relate to weather?</p> <p>How is wind created by the interaction of the Sun and Earth?</p> <p>What is important about weather forecasting?</p>

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4	<p><b><i>Weathering &amp; Erosion Processes</i></b></p> <p>The surface of the Earth is slowly and constantly changing.</p> <p>Many forces are involved in the process of changing the Earth's surface.</p>	<p>How do the forces of water, wind, and ice change Earth's surface?</p> <p>How do Earth's landforms show evidence of past weathering, erosion, and deposition?</p> <p>How does the ocean affect the surface of the Earth?</p> <p>What impact does weather have on changing the surface of the earth?</p>
5	<p><b><i>Soil &amp; Other Resources</i></b></p> <p>The materials that make up the surface of the earth have distinct and measurable physical properties.</p> <p>The physical properties of earth materials determine how they are used as resources.</p> <p>Careful decisions about the use of Earth's resources must be made in order to ensure their availability for future generations.</p>	<p>What physical properties can be used to classify soil types?</p> <p>How can properties of soil be changed?</p> <p>How do specific properties of soil and other resources relate to the way they are used?</p> <p>How can soil and other resources be conserved?</p>
6	<p><b><i>Scientific Investigation and Reasoning</i></b></p> <p>Science is an ongoing cycle of questioning and problem solving.</p> <p>We ask certain questions to find out certain information.</p>	<p>How can I learn new things on my own?</p> <p>How can I use my senses and other tools to help me learn things?</p> <p>How can I gather information and organize it?</p> <p>How can asking questions and finding the answers look differently depending on what I want to know?</p>
7	<p><b><i>Energy &amp; Adaptations Within an Ecosystem</i></b></p> <p>Living organisms within an environment are part of an interactive system where each part depends on all other parts for survival.</p> <p>Any change in the ecosystem will eventually impact all members of the system.</p> <p>The sun's energy is transformed into food by producers and transferred from consumer to consumer.</p>	<p>How do living organisms interact with one another and their environment?</p> <p>What is the sun's role in the flow of energy through a food web?</p> <p>How are sunlight, water, and carbon dioxide used by organisms to make food?</p> <p>What are some of the ways that organisms in an ecosystem can be affected by a sudden environmental change?</p>
8	<p><b><i>Living Organisms</i></b></p> <p>Living organisms undergo similar life processes and have adaptations that allow them to survive in their environment.</p>	<p>What evidence can you find on the fact that organisms go through similar life processes?</p> <p>Why are life processes and adaptations significant in an organism's survival?</p> <p>How can you determine whether an organism's traits or characteristics are learned or inherited?</p> <p>After comparing the life cycles of various organisms what can you infer about these processes?</p>

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9	<p><b><i>Matter</i></b></p> <p>Each type of matter has unique physical properties that determine its form and use.</p> <p>Properties of matter are measurable and those properties that remain constant can be used to identify and classify the type of matter.</p> <p>Other physical properties can be changed by adding or removing energy.</p> <p>Combining different types of matter may or may not change their original physical properties</p>	<p>How are physical properties used to classify matter?</p> <p>How do the physical properties of substances affect the way they are used?</p> <p>What types of measurement are used to compare the physical properties of matter?</p> <p>How does adding or removing heat affect all types of matter?</p> <p>What changes occur when different types of materials (matter) are combined?</p> <p>What is the difference between a mixture and a solution?</p>
10	<p><b><i>Energy</i></b></p> <p>Energy exists in different forms and can change from one form to another.</p> <p>Different forms of energy travel in unique ways, and can be observed in cycles, patterns, and systems.</p>	<p>How are mechanical, sound, electrical, light, and heat/thermal energy similar?</p> <p>What are some common examples of energy changing from one form to another?</p> <p>After observing the various forms of energy what could you infer are the similarities and differences?</p> <p>What materials conduct heat or insulate objects from heat?</p>
11	<p><b><i>Energy &amp; Motion</i></b></p> <p>Matter has measurable properties that can be classified, changed and used through various forms of energy.</p> <p>Many forms of energy exist, travel, and can be observed in cycles, patterns, and systems.</p>	<p>What is a closed path and why is that important for the use of electrical energy?</p> <p>What is an electromagnetic field evidence of?</p> <p>Do all electrical circuits work the same (open or closed)?</p>
12	<p><b><i>Enrichment</i></b></p>	