

5th Grade Science Curriculum

	Module Focus Essential Question	Skills
September- November	<p>Bundle 1: Matter and Energy Flow in an Ecosystem</p> <p>Guiding Questions:</p> <ul style="list-style-type: none"> ● What kinds of plants should be grown in the garden? ● What is necessary to grow healthy plants? ● How does a composter work? 	<ul style="list-style-type: none"> ● Design a self-sustaining garden that provides food for the community. ● Support an argument that plants get the materials they need for growth chiefly from air and water. ● Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. ● Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. ● Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. ● Use models to describe that energy in animals' food (used for body repair, growth, motion, and used to maintain body warmth) was once energy from the sun.
December- February	<p>Bundle 2: Observing Our Sky</p> <p>Guiding Questions:</p> <ul style="list-style-type: none"> ● What types of objects in the sky should the planetarium show? ● How could the seats move in order for viewers to feel the motion of planets and the pull of gravity? ● How can people's five senses be included in the show? 	<ul style="list-style-type: none"> ● Design a planetarium combined with a thrill ride that lets people experience and learn about the Sun, the Moon, Earth, and the stars, as well as the motions of Earth and the Moon. ● Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. ● Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth. ● Support an argument that the gravitational force exerted by Earth on objects is directed down.

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February - April	<p>Bundle 3: Human Impact on the Earth's Systems</p> <p>Guiding Questions:</p> <ul style="list-style-type: none"> ● What types of water exist on Earth, how much of each type of water is there, and where is it found? ● How does water interact with Earth's other major systems? ● How is water used and at times misused? ● How can fresh water be conserved? 	<ul style="list-style-type: none"> ● Create a special TV news report about water on Earth and how it can be conserved. ● Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact in Michigan and the Great Lakes basin. ● Describe and graph the amounts and percentages of water and fresh water in the Great Lakes to provide evidence about the distribution of water on Earth. ● Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. ● Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. ● Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
April- June	<p>Bundle 4: Interactions in Matter</p> <p>Guiding Questions:</p> <ul style="list-style-type: none"> ● What properties are helpful to consider when separating types of matter from each other? ● What tools can be used to separate mixtures? ● What materials are good electrical insulators? 	<ul style="list-style-type: none"> ● Use their knowledge of the properties of matter to design a plan for cleaning up the water supply after a tsunami. ● Develop a model to describe that matter is made of particles too small to be seen. ● Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. ● Make observations and measurements to identify materials based on their properties. ● Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. ● Conduct an investigation to determine whether the mixing of two or more substances results in new substances.