STEMscopes™
THE LEADER IN STEM EDUCATION

2nd Grade Science Curriculum

	Module Focus Essential Question	Skills
September - November	**Bundle 4**: Selecting and Using Materials in the Design Process **Guiding Questions:** • What physical properties of materials are best suited to keep things cold? • How could a backpack be made into a shelter? • What are some foods that do not change their state or shape when cooled, reheated, and recooled?	• Create lists of materials that have the ability to keep food and drinks cold; foods that do not change their state or shape when heat is added and then when they are recooled; and materials that, along with a backpack, could be used to make a shelter. • Create a blueprint of materials that could be taken on a rainy-day camping trip, and that fit in the backpack. • Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. • Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. • Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. • Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. • Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs. • Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object. • Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
December-February	**Bundle 2**: Dealing with Changes to the Earth **Guiding Questions:** • What areas are at risk? • How could this change the landscape?	• Determine what slow and fast changes to a landscape are caused by mudslides, and come up with a prevention plan. • Use information from several sources to provide evidence that Earth events can occur quickly or slowly. • Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. • Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. • Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs. • Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

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February-March	**Bundle 3**: Mapping Land and Water **Guiding Questions:** • What do maps show? • Why are maps important? • Where can water be found on Earth? • In what forms does water exist on Earth?	• Create a map that includes icebergs, the coastline, islands, and any landforms visible from the ocean. • Develop a model to represent the state of Michigan and the Great Lakes, or a more local land area and water body. • Obtain information to identify where freshwater is found on Earth, including the Great Lakes and Great Lakes Basin.
March-June	**Bundle 1**:Organisms - Needs & Interactions **Guiding Questions:** • What plants and animals live in a habitat near me? • How do animals pollinate plants and move plant seeds around? • What do plants and animals need to survive?	• Draw and label a restored habitat that was once destroyed by fire. • Plan and conduct an investigation to determine if plants need sunlight and water to grow. • Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants. • Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. • Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. • Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs. • Make observations of plants and animals to compare the diversity of life in different habitats.