

Kindergarten

FOSS Kit	Trees and Weather* Provides students with solid experiences to help them develop an understanding of what plants (and animals) need to survive and the relationship between their needs and where they live. By monitoring local weather, students experience the patterns and variations in weather and come to understand the importance of weather forecasts to prepare for severe weather.		Animals Two by Two Students learn what animals need to survive and the relationship between their needs and where they live. The firsthand experiences are enriched with close-up photos of animals, some related to animals that students have observed in class and some to animals that are new. This process enhances observation, communication, and comparison.	
EiE Kit	Sound Effects Engineering	Mitten Maker	Bridge Builder	Tower Builders

Grade 1

FOSS Kit	Insects & Plants* Students see the life cycles of insects unfold in real time and compare the stages exhibited by each species to reveal patterns. At the same time, students grow one type of plant from seed and observe it through its life cycle to produce new seeds. They gain experience with the ways that plants and insects interact in feeding relationships, seed dispersal, and pollination, and students develop models to communicate their understanding.	Pebbles, Sand, and Silt* Students use simple tools to observe, describe, analyze, and sort solid earth materials and learn how the properties of the materials are suited to different purposes. Students explore how wind and water change the shape of the land and compare ways to slow the process of erosion. Students learn about the important role that earth materials have as natural resources.
EiE Kit	A Sticky Solution: Designing Walls Wood, stone, metal, plastic . . . if you want to build something, materials matter! Different materials have different properties: they may be more useful for one purpose and less useful for another. This unit explores earth materials -- including clay, sand, and soil -- as they're used in mortar to build a stone wall. The storybook <i>Yi Min's Great Wall</i> sets the scene; Yi Min uses her knowledge of earth materials to design a rabbit-proof wall to protect the school vegetable garden. Drawing on their knowledge of the properties of earth materials, students will plan, build, test, and improve walls of their own.	

Grade 2

FOSS Kit	Plants & Animals* Students explore variation in the same kind of organism, including variation between young and adults. They learn about the behaviors of parents to help their young (offspring) survive. And they explore structure and function relationships as they sort different kinds of animal and plant structures.	
EiE Kit	To Get to the Other Side: Designing Bridges When civil engineers design bridges, they must take into account factors like balance and motion. This unit introduces the principles behind bridge design with the storybook <i>Javier Builds a Bridge</i> , about a boy who needs a safe footbridge to get to his island play fort. Students will reinforce their understanding of “push” and “pull” as they explore how forces act on different structures. They’ll use what they know about balance and force as they experiment with beam, arch, and suspension bridges -- and learn how bridge designs counteract and redirect forces and motion. In the final design challenge, students plan, build, and test their own bridges.	A Work in Process: Improving a Play Dough Process If you’ve ever followed a recipe, you know that the amount of each ingredient and the order in which you mix them matters. Chemical engineers use these same principles when designing processes. When students read the storybook <i>Michelle’s MVP Award</i> , they learn about a girl who designs a better way to make play dough. The activities in this unit reinforce the science concepts “solid” and “liquid” as students explore the properties of different materials -- and the properties of mixtures of materials. The final engineering design challenge invites students to design a process for making high-quality play dough.

Grade 3

FOSS Kit	<p style="text-align: center;">Earth & Sun</p> <p>This module provides students with experiences to explore the properties of the atmosphere, energy transfer from the Sun to Earth, and the dynamics of weather and water cycling in Earth's atmosphere. Other experiences help students to develop and use models to understand Earth's place in the solar system, and the interactions of Earth, the Sun, and the Moon to reveal predictable patterns -- daily length and direction of shadows, day and night, and the seasonal appearance of stars in the night sky. Students gain experiences that will contribute to the understanding of crosscutting concepts of patterns; cause and effect; scale, proportion, and quantity; systems and system models; and energy and matter.</p>
EiE Kit	<p style="text-align: center;">Sounds Like Fun: Seeing Animal Sounds</p> <p>This unit brings new excitement to the study of sound. The storybook, <i>Kwame's Sound</i>, introduces a young drummer from Ghana who is blind; his father, an acoustical engineer, shows Kwame that sound is vibration and can be represented with both visual symbols (such as musical notation and spectrograms) and tactile symbols. Hands-on activities in this unit lead students to explore the properties of volume and pitch, investigate ways to damp sound, and develop their own novel way to represent the key elements of sound.</p>

Grade 4

FOSS Kit	Magnetism & Electricity This module consists of five sequential investigations, each designed to introduce or reinforce concepts in physical science. The investigations provide opportunities for students explore the natural and human-made worlds by observing and manipulating materials in focused settings using simple tools.	
EiE Kit	Water, Water Everywhere: Designing Water Filters The water you drink is clean and safe thanks to the environmental engineers who design and manage our water treatment systems. In this unit, the storybook <i>Saving Salila's Turtle</i> introduces students to the problem of water pollution -- and to some solutions. Students will investigate the properties of filter materials, apply their knowledge of water, and think like environmental engineers as they plan, construct, test and improve their own water filters.	Now You're Cooking: Designing Solar Ovens In Botswana, where firewood for cooking fuel is in short supply, people are turning to solar-powered cookers as an alternative. The storybook <i>Lerato Cooks Up a Plan</i> introduces the idea of using the sun as a renewable energy source and sets a framework for this unit's activities. Students are introduced to the concepts of thermal insulators and thermal conductors, then they test different materials to find the best insulators. They consider the life cycle and environmental impacts of each insulator, then design and test their solar ovens and do some solar cooking!

Grade 5

FOSS Kit	Levers & Pulleys Humans are the only living creatures that have been able to put materials together to construct machines to do work. Our capacity to see and invent relationships between effort and work produced through simple machines has led us into a world that is becoming more technologically oriented. Knowledge of these relationships is necessary for understanding all mechanics. This module consists of four investigations that involve students in fundamental concepts of simple machines.	Environment* This module has four investigations that focus on the concepts that organisms have structures and behaviors, including sensory receptors, that serve functions in growth, survival and reproduction, and living organisms depend on one another and on their environment for their survival and the survival of populations. Students design investigations, conduct controlled experiments, and graph and interpret data.
EiE Kit	Landforms: A Stick in the Mud The storybook that anchors this unit, <i>Suman Crosses the Karnali River</i> , takes students to Nepal, where people rely on innovative cable bridges called TarPuls to cross flooded rivers during monsoon season. Digging into the role of geotechnical engineers, students must select a safe, flood-proof, and erosion-proof location for a new TarPul. Working with a model riverbank, they study soil properties, examine maps to assess the potential for erosion at different sites along the river, and factor in the villagers' preferences for a TarPul location.	