



Content Area: Science

Grade Level: 4

Course Name:

Course Description: Students explore three non-sequential modules throughout the course of the year. The skills and concepts embedded into these units are tied to the New York State 5th Grade Science Assessment, however there is no state assessment at the end of this grade level.

Units Length of Time	Description
<p>How Does Motion Energy Change in a Collision? (8 weeks)</p>	<p>Students explore how motion energy can move and change in a collision. Throughout portions of this unit, students will:</p> <ul style="list-style-type: none"> - learn how motion energy can change into heat, light, and sound and move to another object. - use evidence from collisions to construct a claim that faster objects have more motion energy. - look at ways that motion energy can change to heat. - carry out an investigation into how the surface affects how far an object slides. - learn how air can slow objects down and construct an explanation that motion energy causes air to heat up. - learn that a helmet can protect our brain by changing motion energy to heat. - design a helmet using an egg as a model for the head. - predict how far a moving washer will move a stationary washer in a game.
<p>What Is Our Evidence That We Live on a Changing Earth? (8 weeks)</p>	<p>Students identify, analyze, and communicate evidence that we live on a changing planet. Throughout portions of this unit, students will:</p> <ul style="list-style-type: none"> - analyze global maps to find patterns in the locations of Earth features and in the occurrence of earthquakes and volcanic eruptions.

Units Length of Time	Description
	<ul style="list-style-type: none"> - explain how processes cause specific hazards to humans and compare the structure of one of those hazards, tsunami waves, to wind-driven ocean waves. - define problems associated with earthquake shaking and read about engineering solutions to such problems - design and test models of earthquake-resistant buildings. - investigate additional Earth processes that affect the landscape: weathering and erosion. - consider what clues can be found in rock layers to serve as evidence of past landscapes. - apply what they have learned to create a museum exhibit explaining that a variety of forms of evidence tells us that we live on a changing Earth.
<p>How Can We Provide Energy to People's Homes? (8 weeks)</p>	<p>Students explore how energy moves and changes, and how people obtain sources of energy and convert them for practical purposes. Throughout portions of this unit, students will:</p> <ul style="list-style-type: none"> - observe phenomena—motion, light, sound, and heat—that provide evidence of the presence of energy, and track how energy moves and changes in systems. - observe that electrical energy moves via electric current and can be changed into other forms of energy. - obtain and combine information about the advantages and disadvantages of using various natural resources to generate electricity. - apply what they learn to identify the best energy resource solution for four real-world locations, based on criteria and constraints. - obtain information about how energy gets from power plants to homes, and explore simple electric circuits. - apply what they learn to design and build electric devices that serve specific purposes. - use information about a fictional family to demonstrate their understanding of energy movement and the advantages and disadvantages of renewable and nonrenewable resources. - apply what they have learned about electrical systems to solve an engineering problem: to design, build, test, and optimize a solar-powered doorbell system for a model house.

NYS Standard	Links
	<p>Click here to learn more about the New York State Science Learning Standards!</p>