



Content Area: Science

Grade Level: 5

Course Name:

Course Description: Students explore three non-sequential modules throughout the course of the year. The skills and concepts embedded into these units, as well as units from previous grade levels, are tied to the New York State 5th Grade Science Assessment.

Units Length of Time	Description
How Can We Predict Change in Ecosystems? (8 weeks)	<p>Students will explore how plants and animals get the matter and energy they need to live and grow, how they interact in food webs, how change in one part of an ecosystem can have various effects, and how newly introduced species can sometimes become invasive. Throughout portions of this unit, students will:</p> <ul style="list-style-type: none">- investigate what contributes most of the matter to plant growth.- explore animals' needs for matter and energy. By analyzing weight and food intake data, and observing energy transfer from food items, students build the case that animals get both matter and energy by consuming food.- trace matter and energy through complex food web interactions.- consider what happens when one component of an ecosystem changes.- use models to make predictions about how the introduction of a top predator can affect even the bottom of a food web.- analyze data, develop and use models, and engage in argumentation to make a prediction about which of two coastal locations is likely more susceptible to an invasion by a nonnative sea squirt.

Units Length of Time	Description
<p>How Can We Use the Sky to Navigate? (8 weeks)</p>	<p>Students observe phenomena of ships disappearing below the horizon, shadows pointing in different directions, and balls falling to Earth to learn about our planet. Throughout portions of this unit, students will:</p> <ul style="list-style-type: none"> - use observations as well as models as evidence that gravity is directed to the center of a spherical Earth. - use evidence to make a claim that Earth rotates once on an axis every 24 hours. - carry out an investigation to determine the times of the year that different constellations are not visible and use the data to develop a model of Earth revolving around the Sun once a year. - discover that the altitude of Polaris is the latitude of the observer's location. - carry out an investigation to compare two solutions for finding the altitude of Polaris in the night sky. - use the sky to navigate an imaginary boat and use the experience to support an argument about a historical mystery.
<p>How Can We Provide Freshwater to Those in Need? (8 weeks)</p>	<p>Students will explore the topic of water scarcity and the various ways humans have attempted to get water to where it is needed. Throughout portions of this unit, students will:</p> <ul style="list-style-type: none"> - collect evidence and experiences on their water footprints and on how little accessible freshwater actually exists. - solve a water pumping challenge, develop models based on the interaction of Earth's four spheres, and then design a solution to a water pollution problem. - use a digital game and a newspaper activity to see how humans have tried to solve the global and regional problems of getting freshwater to where it's needed. - work together to design solutions to the water access, treatment, and allocation issues facing individuals and communities around the Earth.

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