FIRST GRADE

FOSS: Air and Weather

Anchor phenomenon: The air around us and the natural objects that we see in the sky

What is all around us?
What do we observe in the sky above us?

Students turn their focus upward to explore that objects in the sky change position in predictable ways. They explore the natural world by using simple instruments and calendars to observe and monitor change. They use new tools and methods to build on their understanding of the weather and to find out about properties of air by exploring how objects interact with air. They observe daily changes in air temperature and connect them to the daily movement of the Sun in the sky. They monitor changes in hours of daylight over seasons and changing weather conditions. And they find the Moon in the day and night skies and monitor its movement over the month.

New York State Science Learning Standards:

Earth Sciences: 1-ESS1-1, 1-ESS1-2, K-ESS2-1*, K-ESS3-3*
Physical Sciences: 2-PS1-1*
Engineering and Design: K-2 ETS1-1, K-2 ETS1-2, K-2 ETS1-3

Practices:

- Asking questions and defining problems
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations and designing solutions
- Obtaining, evaluating, and communicating information

Crosscutting Concepts:

- Patterns
- Cause and effect
- Scale, proportion, and quantity
- Systems and system models
- Structure and function
- Stability and change

FOSS: Sound and Light

Anchor phenomenon: Sound and light

How do sound and light interact with objects?

Students develop an understanding of how to observe and manipulate the phenomena of sound and light using simple tools and musical instruments. They learn that sound comes from vibrating objects, has volume and pitch, and develop simple models for how sound travels. With light, students find out what happens when materials with different properties are placed in a beam of light, and explore how to create and change shadows and reflections. Students explore how to use sound and light devices to communicate information and compare the ways that animals use their senses (ears and eyes) to gather information about their environment.

New York State Science Learning Standards:

Physical Sciences: 1-PS4-1, 1-PS4-2, 1-PS4-3, 1-PS4-4
Engineering and Design: K-2 ETS1-1, K-2 ETS1-2, K-2 ETS1-3

Practices:
- Asking questions and defining problems
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Constructing explanations and designing solutions
- Obtaining, evaluating, and communicating information

Crosscutting Concepts:
- Patterns
- Cause and effect
- Systems and system models

Amplify: Animal and Plant Defenses

Anchor phenomenon: Spruce the Sea Turtle lives in an aquarium and will soon be released back into the ocean, where she will survive despite ocean predators.

How can a sea turtle survive in the ocean after an aquarium releases it?

Students play the role of marine scientists. In their role, students apply their understanding of plant and animal defense structures to explain to aquarium visitors how a sea turtle and her offspring can defend themselves from ocean predators when they are released into the wild.

New York State Science Learning Standards:

Life Sciences: 1-LS1-1, 1-LS1-2, 1-LS3-1
Engineering and Design: K-2-ETS1-1, K-2-ETS1-2

Practices:
- Constructing explanations and designing solutions
- Obtaining, evaluating, and communicating information
- Engaging in argument from evidence

Crosscutting Concepts:
- Patterns
- Structure and function