Overview

The Air and Weather unit introduces earth science concepts to young students - they explore the natural world using simple tools to observe and monitor change.

FOSS Air and Weather expects students to:

- Develop an interest in air and weather.
- Experience air as a material that takes up space and can be compressed into a smaller space.
- Observe the force of air pressure pushing on objects and materials.
- Observe and compare how moving air interacts with objects.
- Observe and describe changes that occur in weather over time.
- Become familiar with instruments used by meteorologists to monitor air and weather conditions.
- Compare monthly and seasonally weather conditions using bar graphs.
- Observe the location of the Sun and the Moon in the sky over a day and the change in the appearance of the Moon over a month.
- Organize and communicate observations through drawing and writing.
- Acquire vocabulary associated with properties of air and weather conditions.

Four investigations provide firsthand experiences and intellectual challenges that exercise the mind and help students construct and organize knowledge about the working of the world.

Investigation 1 - Exploring Air

Students will

- Explore properties of a common gas, air.
- Construct parachutes and observe how they move through air
- Discover that air occupies space and can be compressed.
- Observe that compressed air pushes with a usable pressure.
- Explain how air can propel a balloon-rocket system.

Investigation 2 - Observing Weather

Students will

- Observe daily weather and record observations.
- Use a calendar to monitor daily weather and record sunrise/sunset times once a week.
- Monitor and record daily outdoor temperature.
- Use different weather instruments, including a thermometer and rain gauge.
- Identify several types of clouds.
- Develop awareness of natural sources of water.

Investigation 3 - Wind Explorations

Students will

- Observe evidence of wind speed using bubbles, pinwheels, and anemometers.
- Describe the wind strength using a modified Beaufort scale.
- Observe evidence of wind direction using bubbles and wind vanes.
- Use different weather instruments, including an anemometer and a wind vane.
- Observe the effect of wind direction and speed on kites.
Investigation 4 - Looking for Change

Students will

- Graph weather observations taken over a period of a month.
- Look for patterns in changes in weather condition, precipitation, and temperature through the seasons.
- Monitor and record nightly weather.
- Monitor and record the changing appearance of the Moon over a month.

Assessments

FOSS assessment is organized into three categories:

- **Content knowledge**: the facts and scientific concepts of the module
- **Conducting Investigations**: the skills needed for successful inquiry
- **Building Explanations**: the communication of ideas and evidence to support student learning

*Formative* and *summative* assessment strategies help the teacher understand what the students have learned and can do. Throughout the investigations, teachers use formative assessment strategies to inform their instruction, and the end-of-module and portfolio summative assessments provide evaluate information.