



## Classroom Teacher Preparation

### Earth Science 17: Meteorology and Weather Mapping

Please use the following to prepare for the next SfS lesson.

#### Description:

In this lesson, students will learn about weather patterns, weather symbols, and how to interpret a weather map. They will then use the skills they have learned to highlight the weather on a national weather map and identify pressure systems and weather fronts. This lesson is geared towards older (6<sup>th</sup>-8<sup>th</sup> grade) students.

#### Lesson Objectives – SWBAT (“Students Will Be Able To...”):

6<sup>th</sup>-8<sup>th</sup>

- Understand basic weather information and identify the components making up weather
- Describe different types of weather maps
- Translate weather conditions into meteorological terms
- Create a national weather map showing regional conditions and identify pressure systems and fronts

#### Disciplinary Core Idea (DCI):

ESS2 Earth’s Systems – ESS2.D Weather and Climate

- (6<sup>th</sup>-8<sup>th</sup>) Complex interactions determine local weather patterns and influence climate, including the role of the ocean.

#### Science & Engineering Practice (SEP):

Analyzing and Interpreting Data

#### Preparation:

Students should have seen the module *ES16: Weather*, or have a strong background in weather basics, including air pressure and weather fronts. The introduction for this lesson should serve as a brief review of air masses, pressure systems, and weather fronts so that the weather mapping activity can be the main focus of this lesson.

You may also ask students to watch a local weather forecast on the nightly or morning news before arriving for this module so that they can become familiar with weather symbols and terms, and begin thinking about the data meteorologists use to forecast the weather. You may also wish to visit the Weather Channel (<http://www.weather.com>) with your students to browse the national forecast, current weather maps, and your local forecast. Examine maps for temperatures, winds, dew point pressure, and Doppler radar.

#### Room Set Up for Activities:

Students will be working with a partner. If a projector and whiteboard are not available, wall space will be necessary to hang a large map. Please have students bring colored pencils to class with them.

#### Safety:

There are no safety concerns for this lesson.



## Related Modules:

This lesson may be taught as part of a sequence or group of related modules on **Weather**. Other modules in this sequence include:

*Earth Science 12: Water Cycle* - This module presents a game that explains how water cycles through different forms and storage types on Earth and in Earth's atmosphere. Students act as water molecules and move around the room to the different places water is found on Earth.

*Earth Science 16: Weather* - This lesson provides an introduction to weather and the key components that influence it (including temperature, humidity, pressure, ocean currents, and air currents). The four main types of precipitation are also included in this lesson.

For other module sequences and groups, look here: [www.sciencefromscientists.org/sequences](http://www.sciencefromscientists.org/sequences)

## Standards Covered:

Please click the following link to our website to review the standards covered by this lesson, listed by state:

<http://www.sciencefromscientists.org/standards/>

Lessons are matched to both national NGSS and local state standards.

## After Our Visit:

*Extend this lesson by making and testing different types of homemade barometers, which can measure atmospheric pressure and predict weather.*

Access this Extension activity by visiting the Classroom Post found on our website at [sciencefromscientists.org/cohorts](http://sciencefromscientists.org/cohorts). Use the name of your school/cohort and password to log in.

To help Evaluate, check out our Open Response questions online at [sciencefromscientists.org/open-response-questions](http://sciencefromscientists.org/open-response-questions). They are freely available for all of our lessons for current teachers. Use the password supplied by your instructor to log in.

## Additional Resources:

- Meteorology - A General Overview (video, 7:10): <http://www.watchknowlearn.org/Video.aspx?VideoID=19627&CategoryID=162>
- Scholastic Study Jams – Air Masses and Fronts: <http://studyjams.scholastic.com/studyjams/jams/science/weather-and-climate/air-masses-and-fronts.htm>
- Edheads Weather game: [http://www.edheads.org/activities/weather/frame\\_loader.htm](http://www.edheads.org/activities/weather/frame_loader.htm)
- Weather Forecasting: [http://www.weatherwizkids.com/?page\\_id=80](http://www.weatherwizkids.com/?page_id=80)
- Meteorologist Ryan Davidson Explains Weather Maps (3:49): <https://www.youtube.com/watch?v=9NZz-EeveJ8>