



Classroom Teacher Preparation

Earth Science 12: The Water Cycle

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

Description:

This module introduces how water cycles through different forms and storage types on Earth and in Earth's atmosphere. Students hypothesize about the path water takes through the water cycle. Each student will act as a water molecule and move around the room to model the path that a water droplet might take. The class will then identify benefits and limitations of this water cycle model.

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

3rd-5th

- Identify the processes that allow water to change location
- Use a model to describe the cycling of water through the hydrosphere

Disciplinary Core Idea (DCI)

ESS2 Earth's Systems

- (3rd-5th) **ESS2.A Earth Materials and Systems** – The water cycle involves interactions of the four major Earth systems.
- (3rd-5th) **ESS2.C The Roles of Water in Earth's Surface Processes** – Most of Earth's water is in the ocean and much of the Earth's freshwater is in glaciers or underground.

Science & Engineering Practice (SEP)

Developing & Using Models

- (3rd-5th) Identify limitations of models

Crosscutting Concept (CCC)

Systems and System Models

- (3rd-5th) A system can be described in terms of its components and their interactions

Preparation:

This lesson expands on the basic water-goes-in-a-circle understanding of the water cycle. Thus, students should be generally aware of the water cycle. They should also know that water changes states and be able to give a few examples, e.g., evaporation (change from liquid to gas), freezing (change from liquid to solid).

Room Set Up for Activities:

There will need to be nine different stations (aquifers, atmosphere, oceans, etc.) set up around the room. For the activity, we will distribute the students to the nine stations where they will use dice to flip a card and learn where they will move for each round.



Safety:

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:

Chemistry 11: States of Matter – For younger students, this module introduces the three commonly-observed states of matter (solid, liquid, gas), the most commonly-occurring one (plasma, which makes up the stars), and allows them to observe many of the transitions between the different states. For older students, the topic is connected to heat transfer, as they consider how the flow of energy between materials allows the transitions to occur.

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.

Earth Science 17: Meteorology and Weather Mapping - 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.

For other module sequences and groups, look here: 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:

www.sciencefromscientists.org/standards/

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

After Our Visit:

Our Classroom Post can be found on our website at 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. They are freely available for all of our lessons for current teachers. Use the password supplied by your instructor to log in.

We recommend students create their own mini water cycle box as an Extension activity. Instructions can be found [here](#).

Additional Resources:

- USGS Water Cycle Poster: <http://water.usgs.gov/edu/watercycle-kids.html>
- Scholastic Water Cycle Study Jams: <http://www.scholastic.com/teachers/activity/water-cycle-studyjams-activity>