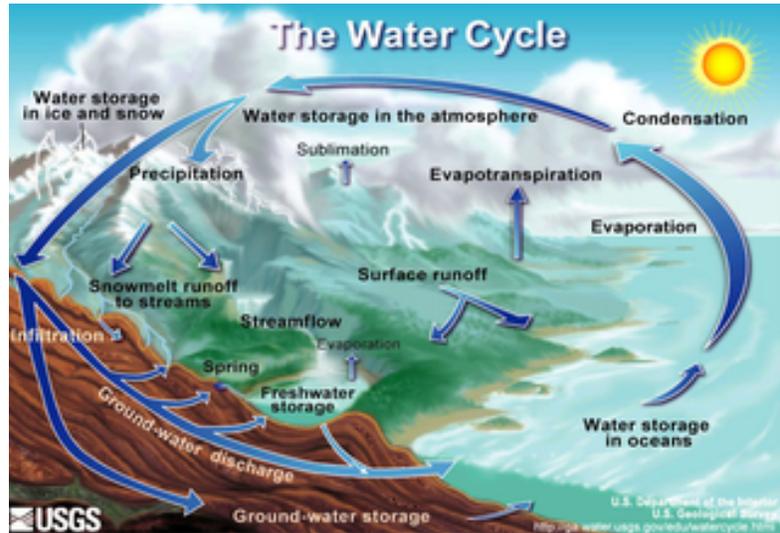


Earth Science Tech Lesson Guide Lite

## The Hydrologic Cycle

Water is important to the survival of living organisms on Earth. Without water, life as we know it on planet Earth would be impossible. The movement of water on the Earth's surface fashions a continuously changing landscape. Movement of water above the Earth's surface influences climate and weather. Below the Earth's surface, water is purified while moving needed minerals around the world.



The Earth's hydrosphere includes all of the water on Earth. The Earth's hydrosphere not only includes water found in the oceans, lakes, streams and rivers, but also the water contained in glaciers, soil, air, and living organisms.

The hydrological cycle, or water cycle, describes the movement of water as it moves from the oceans to the atmosphere, from the atmosphere to the land, and from the land back to the oceans. Two important concepts of the hydrologic cycle that may be hard to convey to lower elementary students are that the cycle gets its energy from the Sun and that the cycle is always balanced. You can read more about these two key concepts in the literature about the hydrological cycle and decide if you want to include these concepts into your lesson.

To read more go to:

- [http://en.wikipedia.org/wiki/Water\\_cycle](http://en.wikipedia.org/wiki/Water_cycle)
- <http://ga.water.usgs.gov/edu/watercycle.html>

## Objective

Students will learn about the hydrologic cycle. Students will be able to describe what the hydrologic cycle is including identifying the various stages of the cycle and (some) of the processes that occur at each stage as water moves from the ocean to the atmosphere, onto the land, and back to the ocean.

### **Materials:**

1 per student-plastic 2-liter soda bottle, cut  
1 per student-gallon size ziplock baggie  
Pebbles, soil, grass seeds, water (enough for a biome for each student)

Extension materials:

Copies of worksheets (diagram, quiz, coloring pages, Reader's Theater: 1 per student)  
Pencils  
Crayons, colored pencils or paints

### **Engage**

Tell students they are going to go on an exploration journey. Tell them they will watch a very short video clip. Tell them that they should be ready to share what they witnessed or noticed during the video.

View: *Water Cycle Animation* on Teacher's Domain

[http://www.teachersdomain.org/browse/?start=120&fq\\_hierarchy=k12.sci.ess&fq\\_grade=PK&fq\\_grade=3](http://www.teachersdomain.org/browse/?start=120&fq_hierarchy=k12.sci.ess&fq_grade=PK&fq_grade=3)

Lead a discussion, have students share what they witnessed happening and what they noticed. Eventually you will want students to know that they witnessed the hydrologic cycle, or water cycle. You may want to use this video clip later for the evaluation stage.

### **Explore**

View: *Biome in a Baggie* found on Teacher's Domain

[http://www.teachersdomain.org/search/?q=biome+in+a+baggie&fq\\_grade=PK&fq\\_grade=PS](http://www.teachersdomain.org/search/?q=biome+in+a+baggie&fq_grade=PK&fq_grade=PS)

Written direction can be found on the PBS website (ZOOM)

<http://pbskids.org/zoom/activities/sci/biomeinabaggie.html>

Make a biome. Observe the biome over a several days. Discuss what is happening to the moisture in the biome. Relate events to the water cycle using process terms such as evaporation, condensation, and transpiration.

### **Explain**

View: *The Story of the Water Cycle*

<http://www.woodlands-junior.kent.sch.uk/Homework/swater.html>

View: the *Hydrologic Cycle* interactive found on Teacher's Domain.

[http://www.teachersdomain.org/browse/?start=60&fq\\_hierarchy=k12.sci.ess&fq\\_grade=PK&fq\\_grade=3](http://www.teachersdomain.org/browse/?start=60&fq_hierarchy=k12.sci.ess&fq_grade=PK&fq_grade=3)

### **Extend**

Make a Water Cycle Wheel

<http://www.epa.state.il.us/kids/fun-stuff/water-cycle/>

Sing a song!

<http://www.kidsknowit.com/educational-songs/play-educational-song.php?song=The Water Cycle>

<http://www.kidsknowit.com/educational-songs/play-educational-song.php?song=Why Is It Raining>

View the Water Cycle and Color

<http://www.kidzone.ws/water/>

Read a Reader's Theater

<http://www.enchantedlearning.com/rt/weather/watercycle.shtml>

### **Evaluate**

Take a quiz

<http://www.enchantedlearning.com/classroom/quiz/watercycle.shtml>

Label a diagram

<http://www.enchantedlearning.com/geology/label/watercycle/>

View: *Water Cycle Animation* on Teacher's Domain

[http://www.teachersdomain.org/browse/?start=120&fq\\_hierarchy=k12.sci.ess&fq\\_grade=PK&fq\\_grade=3](http://www.teachersdomain.org/browse/?start=120&fq_hierarchy=k12.sci.ess&fq_grade=PK&fq_grade=3)

After viewing this short video clip, lead a discussion and listen for enhanced depth of the discussion. You are listening for understanding through the use of key vocabulary and key concepts.