



The Hydrologic Cycle

Where does water come from, and where does water go?

Objectives: Learn about the hydrologic cycle and

- where water is found
- the steps of the hydrologic cycle
- how water moves from one step to another.

Grades: 3-6

Materials:

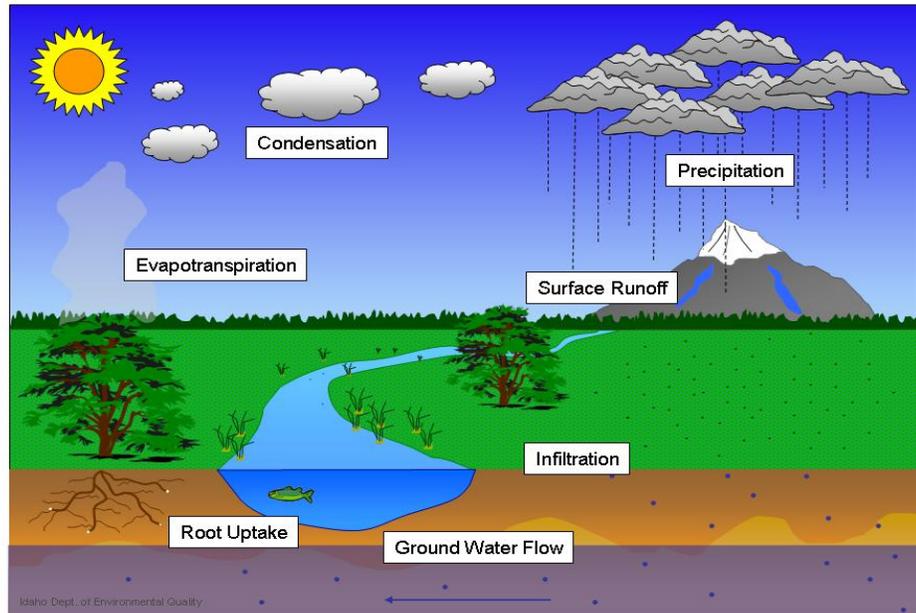
- Hydrologic cycle illustration
- Hydrologic cycle animation
- Small beaker
- House plant, plastic wrap, and tape

Hydrologic Cycle:

The water on earth is always on the move, and eventually it ends up right back where it started. This movement is called the hydrologic cycle or water cycle.

We can start any place, so let's start with **precipitation**.

Precipitation is another name for rain and snow. When rain falls on the land or snow melts, it flows into rivers or streams. After a lot of rain or in the spring when all the snow melts, streams and rivers often have a lot more water in them. In the water cycle, this is called **surface runoff**. The water in the streams and rivers can flow all the way to lakes and eventually even the ocean.

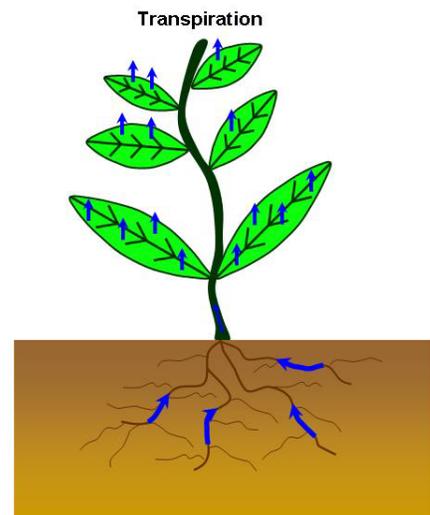


The rain and melted snow can also be absorbed into the ground. When this happens, it's called **infiltration**. The infiltrated water adds moisture to the soil and rock. If enough water is added, it will completely fill all the empty spaces in the soil and rock.

If all the empty spaces are full of water then we have an aquifer. The water in an aquifer is also called ground water. Moving ground water is called **ground water flow**. Ground water moves very slow, usually only a few feet a day.

Plants need water and nutrients to live. Plants get water and nutrients from the soil through their roots. When plants absorb water and nutrients from the ground it's called **root uptake**.

The water goes up through the plant to its leaves where it's released into the air. The process of plants releasing water into the air is called **transpiration**. A



a mature tree can transpire 50 to 100 gallons of water a day in the summer.

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Some water doesn't make it to streams or rivers. When the sun comes out, the heat causes the water on plants or on the surface of the land to evaporate back into the air. The combined process of evaporation and transpiration are called **evapotranspiration**.

All evapotranspired water rises up into the atmosphere where the air is very cold. The water starts to collect together in a process called **condensation**. When there is enough condensation, clouds form.



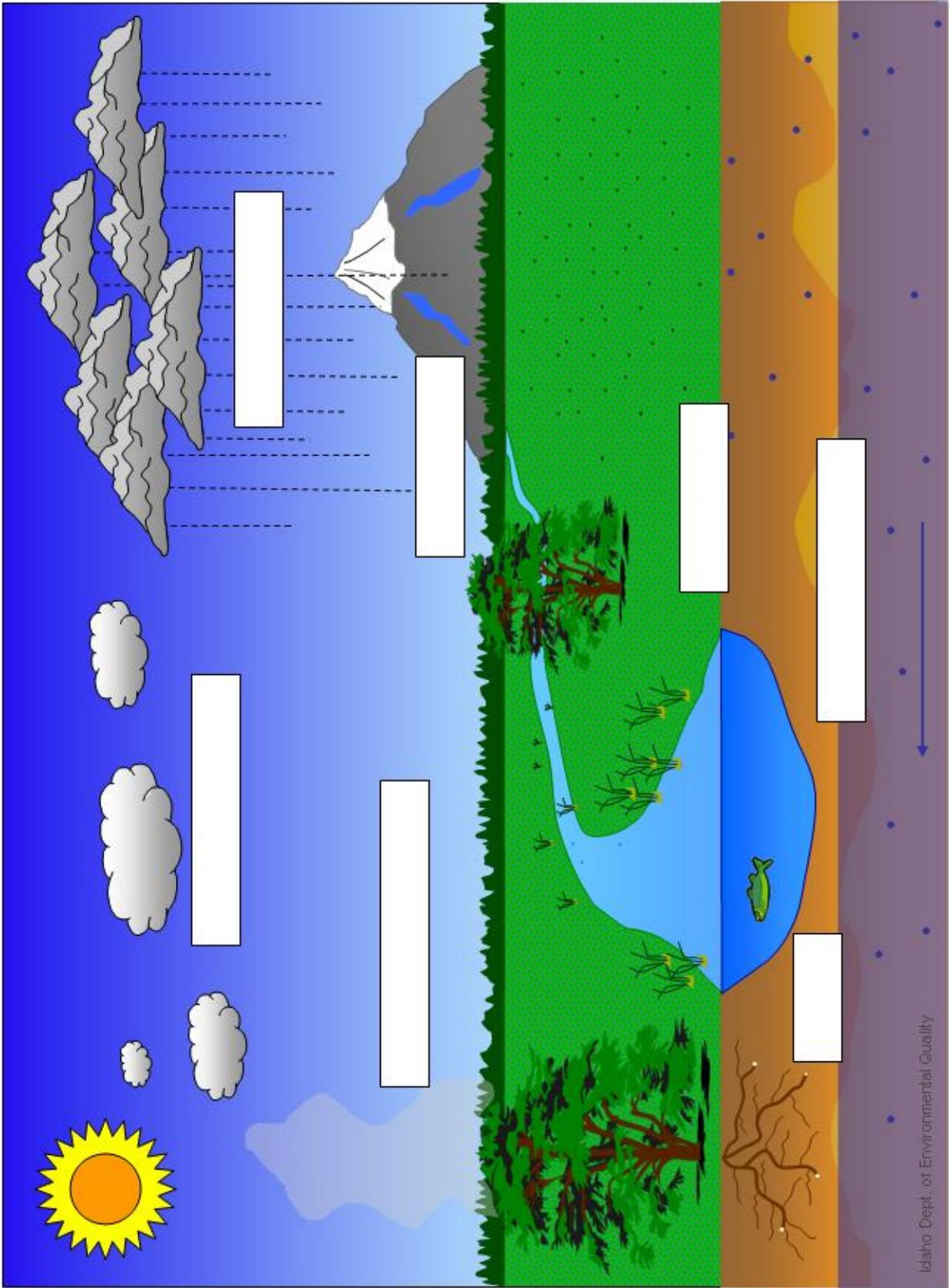
When there is enough water in the clouds, it starts to rain and snow or **precipitate**. Now we are right back where we started on the first page! Water from precipitation will move again through the hydrologic cycle.



Activities:

1. Download the hydrologic animation at www.deq.idaho.gov/rathdrumpairieaquifer.
2. On page 3 is an illustration of the hydrologic cycle.
 - Fill in the empty boxes with the steps of the hydrologic cycle.
 - Draw arrows from one box to another showing the direction of the cycle.
3. Fill a measuring cup with exactly 1 cup of water. Leave the cup out on a table or window sill. The water will start to disappear. Fill out the table on Page 4 and explain how this relates to the hydrologic cycle. What might make the water disappear faster?
4. Take a house plant and lightly water it. Then loosely cover the plant or one branch with clear plastic wrap. Gently secure the plastic wrap around the pot or base of the branch with some tape. Make sure you just tape the pot or the plastic around the branch instead of the plant itself. Wait a few days and water will start to form on the inside of the plastic. What is happening? How does this relate to the hydrologic cycle?





**CERTIFICATE OF COMPLETION
RATHDRUM PRAIRIE AQUIFER
EDUCATION**

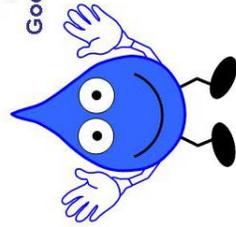


THIS CERTIFICATE IS AWARDED TO

SCHOOL

IN RECOGNITION OF COMPLETING LESSON 1

Congratulations
and
Good Job!



Teacher

Date