

Water Cycle Relay Race

Revised October 2011

SUMMARY:

Students will review the water cycle through a relay race vocabulary game.

BACKGROUND:

Water doesn't disappear with our use of it for irrigation, manufacturing, and other sources of consumption. The water we have today is the same water we had at the beginning of time. Water forms, dissipates, and forms again in a cycle called the hydrologic or water cycle.

The water cycle is a gigantic circulation system operating in the atmosphere and on the earth's lands and oceans. Being a cycle, there is no beginning or ending, but for illustration, let's begin with waters of the oceans which cover about three-fourths of the earth.

Water from the surface of the ocean **EVAPORATES** into the atmosphere. The evaporation from the ground and bodies of water combined with the **TRANSPIRATION** of plants is **EVAPOTRANSPIRATION**. That moisture is lifted, eventually is **CONDENSED**, and falls back to the earth's surface as **PRECIPITATION**.

Precipitation that falls as rain, hail, sleet, or snow is important to people and agriculture. After wetting the plants and the ground, some of the precipitation **RUNS OFF** into **STREAMS** and other waterways. This is the water that often causes erosion and is the main contributor to floods. Not all of the precipitation runs off. Some soaks into the ground and is available for evaporation. Some of it **PERCOLATES** (or **INFILTRATES**) through the ground and resurfaces at springs. Some seeps to maintain and replenish streams during dry periods. The streams eventually lead back to oceans, where the water is again evaporated into the atmosphere.

MATERIALS:

- 1 tray (or more) of cubed ice (or marbles) per team
- 1 set of vocabulary words per team with tape or Velcro on the back (bold words in background section above)
- 1 set of riddle cards (see appendix page 49)
- 1 spoon with tape (or Velcro) on the bottom (per team)
- 1 bucket
- large poster of the water cycle with Velcro on the areas corresponding to the vocabulary words

Grade Level

K-6th Grade

Subject Areas:

Science

Duration

15-20 minutes

Setting

Classroom

Outdoors



PROCEDURE:

1. Review the water cycle, paying particular attention to the following vocabulary words: evaporation, transpiration, condensation, cloud, precipitation, river, percolation (or infiltration), groundwater, evapotranspiration, and water cycle.
2. Divide the class into teams of about nine students. Show the class a water cycle poster, pointing out that there are areas for a word to tape onto the poster. Explain that they will identify the areas with the missing words in the course of the water cycle relay race.
3. Have each group form a single file line. Pass the spoon and tray of ice cubes (or marbles) to each team and have them place these at the end of the line. As part of the relay, each team will place an ice cube on the spoon and pass both from the back of the line to the front of the line.
4. Give each team a set of the nine vocabulary words written on slips of paper. Have the teams attach a piece of tape to each slip of paper. Ask the teams to discuss the words, review their meanings and decide where they are located on the water cycle poster.
5. Before beginning the race, review the rules for the relay: 1) No one may touch the ice cube after it has been placed on the spoon until it reaches the bucket. 2) If the ice cube falls off the spoon, the back person must put another ice cube on the spoon and the process starts again.
6. Read a water cycle riddle to the class. The students must quietly decide among their team which word best fits the riddle. The last person in line tapes the vocabulary word to the bottom of the spoon and places the ice cube in the spoon. He or she then passes the spoon and ice cube to the person in front of him or her, and so on to the front of the line. The person at the head of the line walks quickly to the poster (at the front of the room) with the spoon and ice cube, places the ice cube in the bucket under the water cycle poster, takes the word from the spoon, tapes it to the poster, and returns to the end of the line. The first group to put its word on the poster receives points. The race continues with another riddle until all the riddles have been read.
7. Invite the students to help decide how points should be awarded and keep track of the scores. Ask them to decide the number of points to be given to the team that finished first, the team(s) that select(s) the correct vocabulary word, and the team(s) the correctly place(s) the word on the poster.
8. The team with the most points wins.

EXTENSIONS:

- Discuss with the students what would happen if pollutants were introduced into the water cycle.

*Adapted from activity I-3 Water Cycle Relay Race in the manual Water Conservation and Non-point Source Pollution by Dr. Kitt Farrell-Poe.

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Water Cycle Relay Race – Riddle Cards

Below the surface of the earth
In between particles of dirt
That's where this water is found
Saturating everything deep underground
Groundwater

Heat from the sun makes water rise
Up as vapor to the skies

Evaporation

Down is the direction this water falls
As crystal, drips, or even balls

Precipitation

From the pores of plants
Water vapor escapes
Into the air without a trace

Evapotranspiration

Water going round and round
Changing form but not the amount

Water Cycle

In between and all around
Through the soil without a sound
Water seeping down, down, down
Slowly moving underground
Percolation

Once a gas but then it's changed
Into a liquid to be seen again

Condensation

Cumulus, stratus, cirrus, too
Water vapor visible in skies of blue

Cloud

I start as a trickle and then I grow
Picking up speed as down I go
Over the surface of the land to the sea
Obeying the laws of gravity

River