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Evaporation Introductory Lesson

Abstract: This lesson introduces the concepts of evaporation, the water cycle and assesses prior knowledge of the water cycle.

Grade Level: 4th Grade

Time Frame: About 30-40 minutes

Utah Elementary Core Curriculum Standards

Standard 1

Science Benchmark

Matter on Earth cycles from one form to another. The cycling of matter on Earth requires energy. The cycling of water is an example of this process. The sun is the source of energy for the water cycle. Water changes state as it cycles between the atmosphere, land, and bodies of water on Earth.

Students will understand that water changes state as it moves through the water cycle.

Objective 1

Describe the relationship between heat energy, evaporation and condensation of water on Earth.

- b. Identify the sun as the source of energy that evaporates water from the surface of Earth.

Objective 2

Describe the water cycle.

- a. Locate examples of evaporation and condensation in the water cycle (e.g., water evaporates when heated and clouds or dew forms when vapor is cooled).
- b. Describe the processes of evaporation, condensation, and precipitation as they relate to the water cycle.
- c. Identify locations that hold water as it passes through the water cycle (e.g., oceans, atmosphere, fresh surface water, snow, ice, and ground water).
- d. Construct a model or diagram to show how water continuously moves through the water cycle over time.

Terminology:

- clouds – visible mass of particles in the air

- condensation – changing from vapor to liquid
- dew – moisture condensed at night
- diagram – explanatory drawing or plan
- evaporation – to convert into vapor by heat
- precipitation – falling as rain, snow, or hail
- temperature – degree of hotness or coldness
- vapor – gaseous form of an ordinarily liquid substance
- water cycle – the sequence of events through which water passes from vapor in the atmosphere through precipitation upon land or water surfaces and ultimately back into the atmosphere as a result of evaporation

Intended Learning Outcomes/Objectives:

- Students will be able to create a diagram and explain the water cycle.
- Students will be able to discuss and explain evaporation.

Background: Many things in nature appear in cycles. It is important to recognize patterns in nature. The water cycle allows for water to be evaporated and redistributed in the form of precipitation. The cycle continues endlessly. Evaporation is the process by which water is turned into a gas form and rises because of heat.

Materials:

- KWL chart (what you KNOW, what you WANT to know, what you LEARNED)
- Book on evaporation or the water cycle (Example: Branley, Franklyn M. “Down Comes the Rain.” Harper Collins Publishers. ISBN 00644516666)
- Paper, crayons or colored pencils

Assessment of Prior Knowledge: The students’ prior knowledge will be assessed by having them fill out the K on the KWL chart about what they know about evaporation, and by the class discussion.

Instructional Procedures:

1. Write EVAPORATION on the board.
2. Have the students fill out the K and W of the KWL chart.
3. Using the KWL chart for discussion, make a web on the board about what the students know about evaporation. The students are sharing what they know with the rest of the class.
4. Gather the students together in a group and read the book about evaporation and define necessary terminology.
5. Talk about how evaporation fits into the water cycle.
6. Discuss the water cycle as a class, define necessary terminology, and describe the processes of evaporation, condensation, and precipitation.
7. Have the students make their diagram of the water cycle at their seats.
8. Discuss in groups what evaporation is, and have the students record what they’ve learned about evaporation on their L of the KWL.

Discussion Questions:

- What do you know about the water cycle?
- What is evaporation and why is evaporation important?
- Where can you see evaporation in the world around you?

Assessment Strategies:

- Students will be assessed by their completed KWL chart about evaporation and their diagram of the water cycle.