4th Grade Standard I Water Cycle

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 of the water cycle. Water changes state as it cycles between the atmospheric, land, and bodies of water on Earth.

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

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Objective 1: Describe the relationship between heat energy, evaporation and condensation of water on Earth.

  a. Identify the relative amount and kind of water found in various locations on Earth (e.g., oceans have most of the water, glaciers and snowfields contain most fresh water).
  b. Identify the sun as the source of energy that evaporate water from the surface of Earth.
  c. Compare the processes of evaporation and condensation of water.
  d. Investigate and record temperature data to show the effects of heat energy on changing the state of water.

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 form 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.
  e. Describe how the water cycle relates to the water supply in your community.
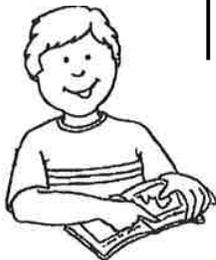
Science language students should use:
vapor, precipitation, evaporation, clouds, dew, condensation, temperature, water cycle.

Intended Learning Outcomes
for Fourth Grade Science

The Intended Learning Outcomes (ILOs) describe the skills and attitudes students should learn as a result of science instruction. They are an essential part of the Science Core Curriculum and provide teachers with a standard for evaluation of student learning in science. Instruction should include significant science experiences that lead to student understanding using the ILOs.

The main intent of science instruction in Utah is that students will value and use science as a process of obtaining knowledge based upon observable evidence.

By the end of third grade students will be able to:
1. **Use Science Process and Thinking Skills**
   a. Observe simple objects and patterns and report their observations.
   b. Sort and sequence data according to a given criterion.
   c. Make simple predictions and inferences based upon observation.
   d. Compare things and events.
   e. Use instruments to measure length, temperature, volume, and weight using appropriate units.
   f. Conduct a simple investigation when given directions.
   g. Develop and use simple classification systems.
   h. Use observations to construct a reasonable explanation.
2. **Manifest Science Attitudes and Interests**
   a. Demonstrate a sense of curiosity about nature.
   b. Voluntarily read or look at books and other materials about science.
   c. Pose questions about objects, events, and processes.
3. **Understand Science Concepts and Principles**
   a. Know science information specified for their grade level.
   b. Distinguish between examples and non-examples of science concepts taught.
   c. Explain science concepts and principles using their own words and explanations.

4. **Communicate Effectively Using Science Language and Reasoning**
   a. Record data accurately when given the appropriate form and format (e.g., table, graph, chart).
   b. Report observations with pictures, sentences, and models.
   c. Use scientific language appropriate to grade level in oral and written communication.
   d. Use available reference sources to obtain information.

- **Instruction should include significant science experiences that lead to student understanding using ILOs.**