

**STANDARD V:**

Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment.

**Science Benchmark:**

Utah has diverse plants and animal life that are adapted to and interact in areas that can be described as wetlands, forests, and deserts. The characteristics of the wetlands, forests, and deserts influence which plants and animals survive best there. Living and non-living things in these areas are classified based on physical features.

**STANDARD V: Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment.**

*Objective 1:* Describe the physical characteristics of Utah's wetlands, Forests, and deserts.

- a. Compare the physical characteristics (e.g., precipitation, temperature, and surface terrain of Utah's wetlands, forests, and deserts).
- b. Describe Utah's wetlands (e.g., rivers, lakes, streams, and marsh areas where water is a major feature of the environment) forest (e.g., oak, pine, aspen, juniper areas where trees are a major feature of the environment), and deserts (e.g., areas where the lack of water provide an environment where plants needing little water are a major feature of the environment).
- c. Locate examples of areas that have characteristics of wetlands, forests, or deserts in Utah.
- d. Based upon information gathered, classify areas of Utah that are generally identified as wetlands, forests, or deserts.
- e. Create models of wetlands, forests, and deserts.

*Objective 2:* Describe the common plants and animals found in Utah environments and how these organisms have adapted to the environment in which they live.

- a. Identify common plants and animals that inhabit Utah's forests, wetlands, and deserts.
- b. Cite examples of physical features that allow particular plants and animals to live in specific environments (e.g., duck has webbed feet, cactus has waxy coating).
- c. Describe some of the interactions between animals and plants of a given environment (e.g., woodpecker eats insects that live on trees of a forest, brine shrimp of the Great Salt Lake eat algae, and birds feed on brine shrimp).
- d. Identify the effect elevation has on types of plants and animals that live in a specific wetland, forest, or desert.

- e. Find examples of endangered Utah plants and animals and describe steps being taken to protect them.

*Objective 3:* Use a simple scheme to classify Utah plants and animals.

- a. Explain how scientists use classification schemes.
- b. Use a simple classification system to classify unfamiliar Utah plants and animals (e.g., fish/amphibians/reptile/bird/mammal, invertebrate/vertebrate, tree/shrub/grass/ deciduous/conifers).
- c. Research and report on the behavior of a species of Utah fish (e.g., feeding on the bottom or surface, time of year and movement of fish to spawn, types of food and how it is obtained).
- d. Compare the structure and behavior of Utah amphibians and reptiles.
- e. Use simple classification schemes to sort Utah's common insects and spiders.

**Science language students should use:**

wetland, forest, desert, adaptation, deciduous, coniferous, invertebrate, vertebrate, bird, amphibian, reptile, fish, mammal, insect, hibernation, migration

**Common plants:**

sagebrush, pinyon pine, Utah juniper, spruce, fir, oak brush, quaking aspen, cotton wood, cattail, bulrush, prickly pear cactus

**Common animals:**

jackrabbit, cottontail rabbit, red fox, coyote, mule deer, elk, moose, cougar, bobcat, deer mouse, kangaroo rat, muskrat, beaver, gopher snake, rattlesnake, lizard, tortoise, frog, salamander, red-tailed hawk, barn owl, lark, robin, pinyon jay, magpie, crow, trout, catfish, carp, grasshopper, ant, moth, butterfly, housefly, bee, wasp, pill bug, millipede

# 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 fourth 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.**

