Intended Learning Outcomes for Sixth 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 sixth grade students will be able to:

1. Use Science Process and Thinking Skills

a. Observe simple objects, patterns, and events, and report their observations.
b. Sort and sequence data according to criteria given.
c. Given the appropriate instrument, measure length, temperature, volume, and mass in metric units as specified.
d. Compare things, processes, and events.
e. Use classification systems.
f. Plan and conduct simple experiments.
g. Formulate simple research questions.
h. Predict results of investigations based on prior data.
i. Use data to construct a reasonable conclusion.

2. Manifest Scientific Attitudes and Interests

a. Demonstrate a sense of curiosity about nature.
b. Voluntarily read and look at books and other materials about science.
c. Pose science questions about objects, events, and processes.
d. Maintain an open and questioning mind toward new ideas and alternative points of view.
e. Seek and weigh evidence before drawing conclusions.
f. Accept and use scientific evidence to help resolve ecological problems.

3. Understand Science Concepts and Principles

a. Know and explain science information specified for the grade level.
b. Distinguish between examples and non-examples of concepts that have been taught.
c. Solve problems appropriate to grade level by applying science principles and procedures.

4. **Communicate Effectively Using Science Language and Reasoning**
   a. Record data accurately when given the appropriate form (e.g., table, graph, chart).
   b. Describe or explain observations carefully and report with pictures, sentences, and models.
   c. Use scientific language in oral and written communication.
   d. Use reference sources to obtain information and cite the source.
   e. Use mathematical reasoning to communicate information.

5. **Demonstrate Awareness of Social and Historical Aspects of Science**
   a. Cite examples of how science affects life.
   b. Understand the cumulative nature of science knowledge.

6. **Understand the Nature of Science**
   a. Science is a way of knowing that is used by many people not just scientists.
   b. Understand that science investigations use a variety of methods and do not always use the same set of procedures; understand that there is not just one "scientific method."
   c. Science findings are based upon evidence.