



**NATURAL HISTORY
MUSEUM OF UTAH**

Rio Tinto Center | The University of Utah

Facts and Inferences

Alignment to Utah Core Curriculum	Enduring understanding: There are differences between facts and inferences.	Grade Level: 3-5
Intended Learning Outcomes (ILO's): 1. Use science process and thinking skills. 2. Manifest scientific attitudes and interests. 3. Understand science concepts and principles. 4. Communicate effectively using science language and reasoning.		Activity Length: 45 minutes
		Process Skills: • Data Collection • Inference • Observation

Materials Needed

- 5 different objects (use items from a teaching toolbox, or things with obvious and not-so-obvious details; a matchbox car, stuffed animal, shoe, etc)
- **Fact or Inference** graphic organizer and pencil for each student

Background

A fact is knowledge based on scientific evidence. The size, shape, location, color, are all features of an object that are measurable or quantifiable and cannot be easily disputed.

An inference is a guess or idea based on the facts observed. There may be many different inferences based on the same observed fact. For instance, "I think it is blue because of genetics.", "Well, I think it is blue because of something it ate."

A hypothesis is a question that can be tested. It could be an inference that one wants to pursue to find out more.



Common Misconception:

An inference does not need to be "correct" to be valid. Teachers will often dismiss a guess as just that if it does not match his or her expectations for what students should know.

Learn to recognize when students are making inferences (guesses based on observations) and encourage them!

Activity

Discuss

Talk about the differences between facts and inferences giving examples that students can relate to.

Ask students to write what they understand about facts and inferences.

Practice

Divide students into 5 groups.

Give each group an object.

Introduce students to the Fact or Inference graphic organizer. Explain that they will be making and recording their observations on this data collection sheet individually but that they may work together as a group.

Allow students 5 minutes to record their facts and inferences at the first station.

Rotate groups through until they have had a chance to observe and record about each object.

Discuss

Ask students what facts they recorded about each object and how they knew they were facts.

Ask students what inferences they recorded about each object. Ask them to explain why they inferred what they did.

Explain that these inferences could be turned into questions and used as hypotheses that could be tested to find out more.

Learning Extensions

You may choose to follow up on an inference that students are particularly excited about. Discuss how to turn the inference into a testable question. You may even take it a step further and design an experiment to test your hypothesis.

Formative Assessment Strategies

1. Assessments are built into this activity. Asking students to record what they know at the beginning and again at the end of the activity will give you an idea of their progress.
2. Circulate through the groups and listen to their conversations. Ask students to justify their inferences. This will give you unique insight into what previous experience students are drawing on to explain discrepant observations.

Name _____ Date _____

	Facts	Inferences
Object 1		
Object 2		
Object 3		
Object 4		
Object 5		