

Observations and Inferences I

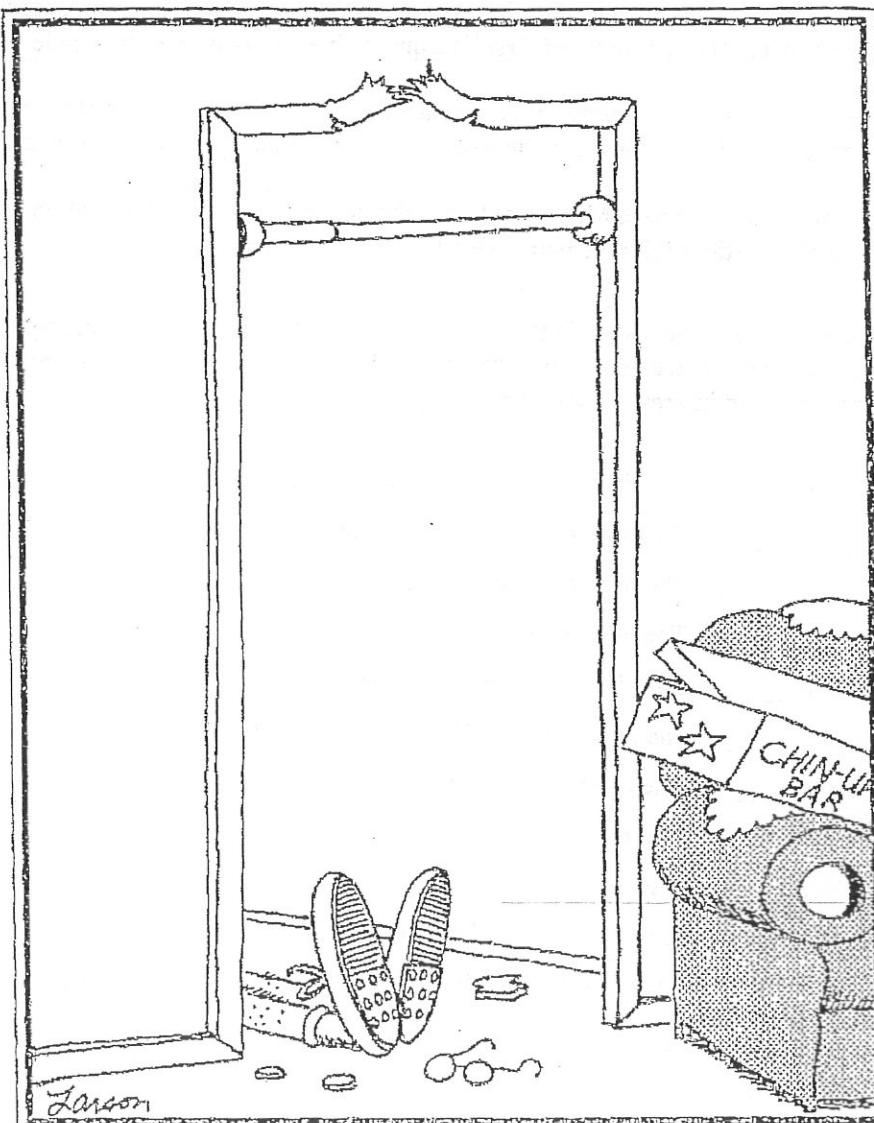
Name: _____ Period: _____ Date: _____

Purpose

In this activity you will be asked to distinguish between *observations* and *inferences*.

Directions: In the space below, write a detailed account of what happened in the cartoon. (Continue your account on the back of this page.) Then complete the rest of the worksheet, following all directions and answering all questions.

The Far Side



From Gary Larson, *The Far Side* Gallery, ©1984 by the Chronicle Publishing Company.

Your Account:

1. Read the definitions of the terms *observation* and *inferences*.

- *Observation* is the act of seeing an object or an event and noting the physical characteristics or points in the event. Observation is an extension of our senses; when we observe, we record what is seen, smelled, tasted, heard, and touched.
- *Inferences* are conclusions based on observations. Inferences go beyond what we can directly sense.

2. Reread the account you wrote. Underline once all observations and underline twice all inferences.

3. Read the definitions of qualitative observations and quantitative observations.

- *Qualitative observations* describe an object's characteristics, properties, or attributes. For example, in the statement, "The apple is red," *red* is a qualitative observation of the apple's appearance.
- *Quantitative observations* involve a quantity or an amount. In the statement, "The apple weighs 125 grams," *125 grams* is a quantitative observation of the apple's appearance.

4. Reread the account you wrote. Mark qualitative observations with the abbreviation for *adjective* (adj.); mark quantitative observations with the pound sign (#).

5. Making observations is not as straightforward as you might think. The mind interprets what we sense. For the following statements, place an "O" next to observations and an "I" next to inferences. For the final two, write your own observation and inference about the cartoon.

- a. _____ The time of day in the cartoon is unknown.
- b. _____ The person is wearing shoes and socks.
- c. _____ The person pictured is a man.
- d. _____ The chin-up bar is set too high.
- e. _____ The chin-up bar arrived in one package.
- f. _____ The person pictured has less than 20/20 eyesight.
- g. _____ The person is lying on their back.
- h. _____ The person has sustained an injury.
- i. _____ The person is a teenager.
- j. _____ The frame of the glasses is bent.
- k. _____ This was the first time the individual used a chin-up bar.
- l. O _____
- m. I _____

6. Scientists make inferences as they attempt to develop answers to questions about natural phenomena. Even though their answers are consistent with the evidence available, often no single answer or story solely accounts for that evidence. Nevertheless, as with the case of this cartoon, some inferences are better supported by multiple observations.

a. Create three different inferences to explain why the person is lying on the ground. For each inference, provide one piece of supporting evidence.

■ Inference:

Evidence:

■ Inference:

Evidence:

■ Inference:

Evidence:

b. Indicate which inference is most plausible by marking a star next to it. What additional evidence exists in the cartoon to support this inference?

7. Based on the cartoon, write a research question that could be answered in an experiment.

Observation or Inference?

Name _____ Date _____

Key Vocabulary

observation

observe

infer

inference

Part I. Observation or Inference?

Directions: Read each statement and decide whether it is an *observation* or an *inference*. Did the person making each statement *observe* or *infer* what he or she stated? Circle your answers.

1. The container is filled to the 350 mL mark with water.

observation inference

2. The Sun rose at 6:54 this morning.

observation inference

3. The caterpillar did not eat the moth because it is not a carnivore.

observation inference

4. Sound traveled faster through the desk than through the air.

observation inference

5. The plant on the left is growing more because it has been receiving more water.

observation inference

6. When the Sun came out, it made the rain stop.

observation inference

7. I can jump high in tennis shoes because they have rubber on the bottom.

observation inference

8. When the power is turned on, the game lights up and plays a song.

observation inference

9. Dinosaurs died out when they could not adapt to the changing climate.

observation inference

10. Water can fall as precipitation, which may include rain, snow, or hail.

observation inference

Name _____ Date _____

Part II. Make Observations and Inferences

Directions: Look at the picture below. Then write three observations and two inferences, based on the picture.

1. (observation) _____
_____2. (observation) _____
_____3. (observation) _____
_____4. (inference) _____
_____5. (inference) _____
_____

Attachment B (cont'd)

Directions: Label the following statements as either observation (O) or inference (I).

1. When I rang the doorbell, no one answered. _____
2. The hamburger was hot. _____
3. Jamal must be very popular. _____
4. The rabbit uses fur from her stomach to build her nest. _____
5. That sounded like a mean dog. _____
6. The rock feels like an ice cube. _____
7. Those clouds look like a mountain. _____
8. The beaker contains 250 ML of water. _____
9. The bark on the birch tree was white. _____
10. A gas was formed when I mixed the liquid and solid. _____