Observations and Inferences I

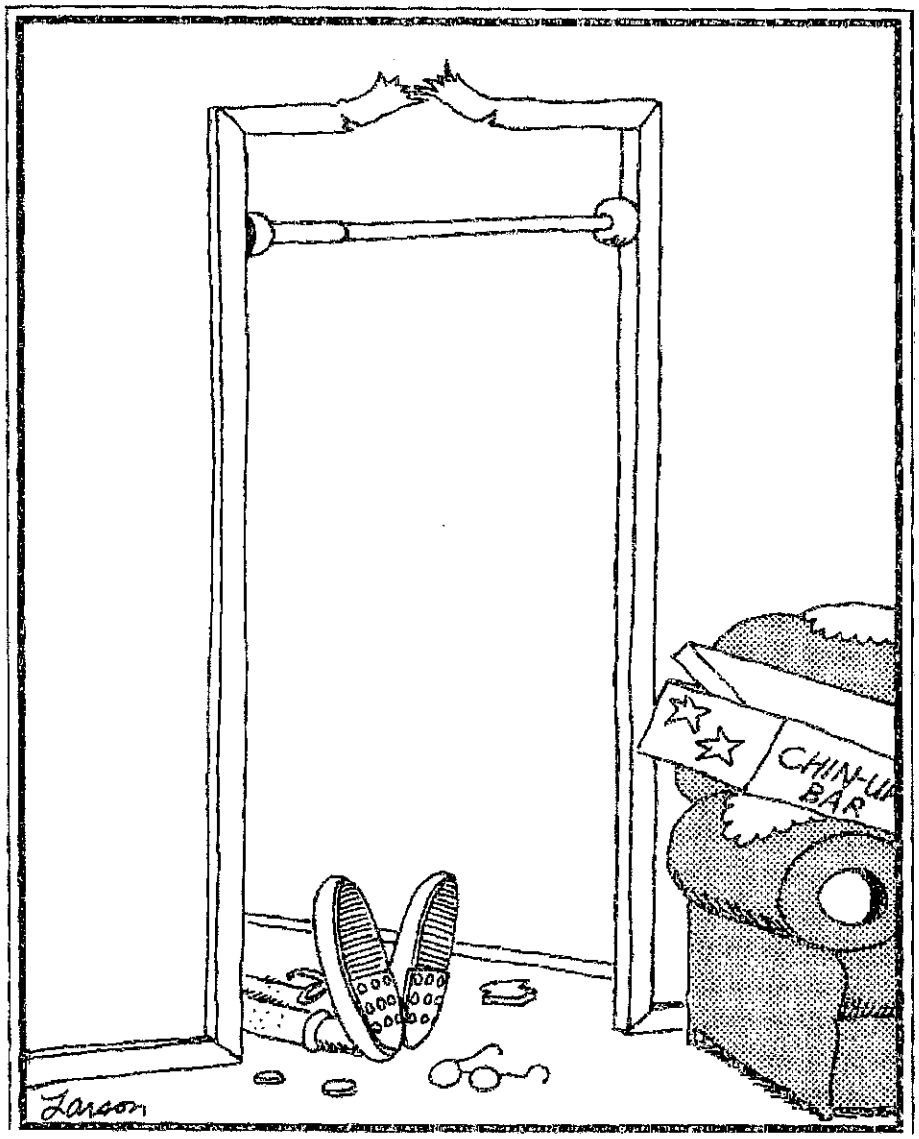
Name: _____ Period: _____ Date: _____

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.

Observations and Inferences I Key

Your Account: Answers will vary.

2. Answers will vary.

4. Answers will vary.

5. Student answers and rationales may vary from the answers suggested below. Use any variations as a basis for a discussion about the complex nature of observations and inferences.

   a. O

   b. O

   c. I (based on the observation of hairy legs)

   d. I (based on many observations, including the broken door frame)

   e. I (there could be more packages out of view)

   f. I (based on the observation of eye glasses)

   g. I (the person might be seated)

   h. I (they may not be injured)

   i. I (the person may be an adult)

   j. O

   k. I (the person may have used a chin-up bar at a gym or park)

6. a. Answers will vary.
   b. Answers will vary.

7. Answers will vary.