Name –

Think Like a Scientist

Although you may not know it, you think like a scientist every day. Whenever you ask a question and explore possible answers, you use many of the same skills that scientists do. Some of these skills are described on this page.

Observing

When you use one or more of your five senses to gather information about the world, you are **observing.** Hearing a dog bark, counting twelve green seeds, and smelling smoke are all observations. To increase the power of their senses, scientists sometimes use microscopes, telescopes, or other instruments that help them make more detailed observations.

An observation must be factual and accurate—an exact report of what your senses detect. It is important to keep careful records of your observations in science class by writing or drawing in a notebook. The information collected through observations is called evidence, or data.

Inferring

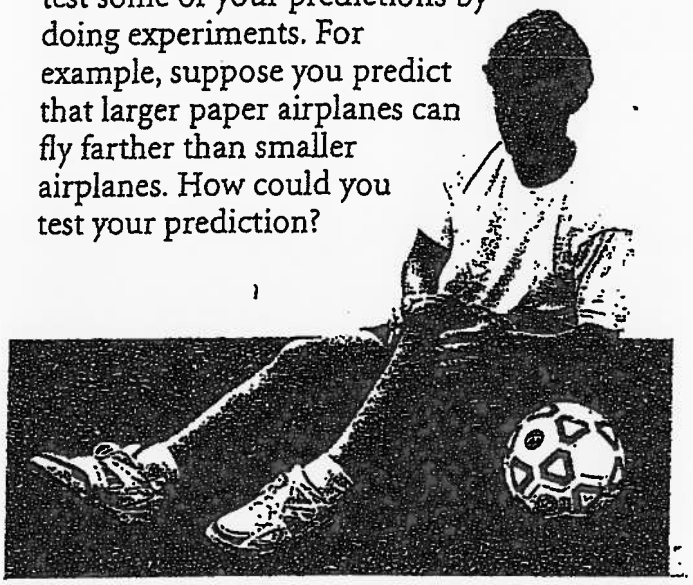
When you explain or interpret an observation, you are **inferring,** or making an inference. For example, if you hear your dog barking, you may infer that someone is at your front door. To make this inference, you combine the evidence—the barking dog—and your experience or knowledge—you know that your dog barks when strangers approach—to reach a logical conclusion.

Notice that an inference is not a fact; it is only one of many possible explanations for an observation. For example, your dog may be barking because it wants to go for a walk. An inference may turn out to be incorrect even if it is based on accurate observations and logical reasoning. The only way to find out if an inference is correct is to investigate further.

Predicting

When you listen to the weather forecast, you hear many predictions about the next day's weather—what the temperature will be, whether it will rain, and how windy it will be. Weather forecasters use observations and knowledge of weather patterns to predict the weather. The skill of **predicting** involves making an inference about a future event based on current evidence or past experience.

Because a prediction is an inference, it may prove to be false. In science class, you can test some of your predictions by doing experiments. For example, suppose you predict that larger paper airplanes can fly farther than smaller airplanes. How could you test your prediction?



ACTIVITY Use the photograph to answer the questions below.

Observing Look closely at the photograph. List at least three observations.

Inferring Use your observations to make an inference about what has happened. What experience or knowledge did you use to make the inference?

Predicting Predict what will happen next. On what evidence or experience do you base your prediction?

Scientific Method

Science Processes

Observation

- Must be _____ and _____
- Must be _____ so others know exactly what you observed
- Information collected through observations is called _____
- Made using one or more of your _____
- Clue words: _____

Sense	Organ
	Eyes
Hear	
Smell	
	Tongue
Touch	

Inference

- An educated _____ that explains or interprets an observation
- May or may not be _____
- Clue words: _____

Prediction

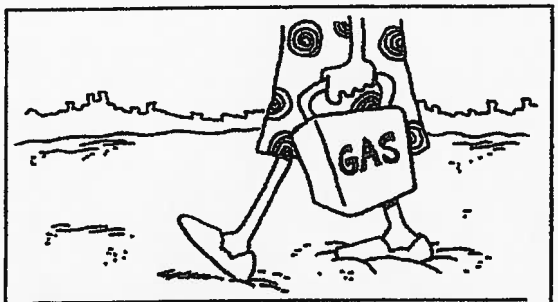
- An inference about a _____ event
- May or may not be _____
- Clue words: _____

Name _____

Caption Capers

DIRECTIONS: For each picture, write an observation and a logical inference in the space provided.

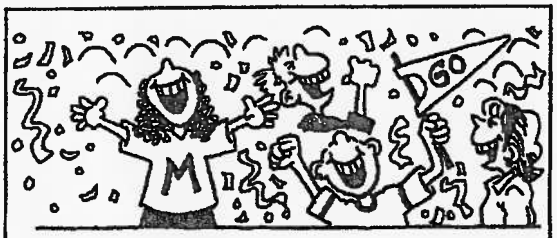
1.



OBS: Person carrying gas can

INF: Their car ran out of gas.

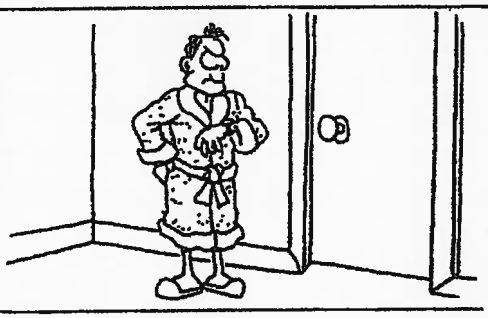
2.



OBS: _____

INF: _____

3.



OBS: _____

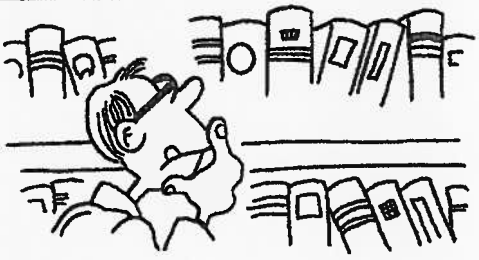
INF: _____

4.

OBS: _____

INF: _____

5.



OBS: _____

INF: _____

6.

OBS: _____

INF: _____