

Process Skills: Predicting

Name: _____

When you make a **prediction**, you are making an inference about a future event based on your past experiences or the current evidence available. One of the most common methods of making a prediction is to look for a pattern. Many times you do this without thinking. When you make a prediction in science, you need to be as specific as possible. You should consider your previous experience and new information before you make a reasonable inference. Predictions are usually tested in science by making observations or by carefully planning an investigation.

Hints for Making Predictions

- ▶ **Don't just guess. When making a prediction, examine all the evidence available to you.**
- ▶ **Look for a pattern in the evidence you are examining.**
- ▶ **Don't be disappointed if your prediction turns out to be false. Whether right or wrong, a prediction may lead you to new questions and new predictions.**

Practise Your Predicting Skills

1. Using an eyedropper, a beaker of water, and a penny, determine how many drops of water you can place on a penny.
2. Now, predict how many drops of water you can place on a nickel, a quarter, or a loonie.
3. Test your predictions and record your results.
4. Did your predicted number of water drops for each coin match your results? Explain any differences.
5. Would a dime hold more or less water drops than a nickel? Support your prediction with evidence you've collected.

Process Skills: Inferring

Name: _____

Making an inference, or inferring, is explaining or interpreting an observation or statement. Have you ever come home, smelled fish cooking, and thought, “We’re having fish for dinner?” You made an observation using your sense of smell and used past experience to conclude what your next meal would be. Such a conclusion is called an inference. Inferences can be reasonable (logical) or unreasonable. A *reasonable inference* is one that makes sense, given what a person knows about the topic. One way to make an *unreasonable inference* is to conclude too much from the evidence.

Hints for Inferring

- ▶ **Base your inference on accurate qualitative or quantitative observations.**
- ▶ **Combine your observations with knowledge or experience to make an inference.**
- ▶ **Try to make more than one logical inference from the same observation.**
- ▶ **Evaluate the inferences. Decide what new information you need to show whether your inferences are true. If necessary, gather more information.**
- ▶ **Be prepared to modify, reject, or revise your inferences. A reasonable inference should make sense with everything else you know.**

Practise Your Inferring Skills

Suppose you are hiking on the prairie. You use binoculars and see a scene in which a few pronghorn antelope are standing near a herd of cattle. Some people in your group make the following observations and inferences. Which inferences are reasonable?

Observation: The cattle and the antelope are standing quietly together.

1. Inference: The cattle and antelope do not attack each other.
2. Inference: None of the animals in this region attack each other.

Observation: Some of the cattle are eating grass.

3. Inference: The grass is food for the cattle and antelope.
4. Inference: Most of the grass in this area is eaten by the cattle.

Observation: The antelope are looking around.

5. Inference: The antelope are watching for predators.
6. Inference: The antelope can see you.