

What Do Scientists Do?

Science Concepts

Read the Ideas more than once. Do your best to remember them.

1. Science is the study of things in nature.
2. Scientists make observations about the world and ask questions about their observations.
3. A scientist may carry out an investigation to find an answer to a question.
4. Doing an experiment might be part of an investigation.
5. An experiment is a fair test that may show one thing causes something else to happen.
6. In a fair test, only one variable changes.
7. Scientific methods involve making observations, asking a question, forming a hypothesis, experimenting, recording results, drawing conclusions, and communicating.
8. A hypothesis is an idea that can be tested with an investigation.
9. Scientists use evidence to explain how things work.
10. Evidence is data gathered during an investigation.

What Skills Do Scientists Use?

Science Words

Say the word quietly to yourself. Then read the meaning.

Read the tip to help you remember.

inference [IN•fer•uhns] a statement that explains an observation

Inference and *evidence* end in the same way. You might use your observations as evidence to make an *inference*.

Suppose you look out a window and observe people wearing coats, hats, and mittens. Based on this observation, you might make an inference. The *inference* might be that the weather is cold. The *inference* explains your observation. The evidence for your *inference* is your observation.

Science Concepts

Read the Ideas more than once. Do your best to remember them.

1. Observing, or using your senses to get information, is an inquiry skill.
2. Inferring, or thinking about how to explain an observation, is an inquiry skill.
3. Scientists may compare things to find ways they are alike and different.
4. Scientists communicate, or share, the results of their work with other scientists.
5. Scientists use what they know and their observations to predict what will happen.
6. A scientist may change one variable as part of an experiment.
7. A scientist may hypothesize, or think of a testable statement that explains an observation.
8. Scientists plan and carry out an investigation to find an answer to a science question.
9. Scientists use evidence to evaluate a hypothesis and draw conclusions.
10. In their work scientists classify, measure, use numbers, use time relationships, and display data.

What Kinds of Models Do Scientists Use?

Science Words

Say each word quietly to yourself. Then read the meaning.

Read the tip to help you remember.

model [MAHD•uhl] a representation of something real that is too big, too small, or has too many parts to investigate directly

Model ends with the sound at the beginning of *look*. A *model* looks like the real thing it represents.

two-dimensional model [TOO di•MEHN•shuhn•uhl MAHD•uhl] a representation that has length and width; for example, a drawing, a diagram, or a map

When you think of a *two-dimensional model*, think of things like pen, pencil, marker, paints, or chalk on paper.

three-dimensional model [THREE di•MEHN•shuhn•uhl MAHD•uhl] a representation that has length, width, and height

When you think of a *three-dimensional model*, think of things made from clay, paper maché, or other materials.

computer model [kuhm•PYOOT•er MAHD•uhl] a computer program that models an event or object, for example, the way an object moves through the solar system

Computer and *complicated* begin with the same sounds. A *computer model* can show things that may be too complicated to show with a two-dimensional or three-dimensional model.