

Sensible Science

Real World Ecosystems
Backgrounder
Grade Level: 5-8



Scientific Process

Although most of us tend to think of “science” as a separate course of study, or a particular style of carrying out certain kinds of activities, it should be understood that science is inherent or “a natural part of” many things we do. It is not a “new” subject or area of study, but rather, it is a way of doing things or a way of studying things that comes quite naturally to most of us. We may not think of ourselves as “doing science,” but there are many commonplace examples that will show that many of us are already involved in “sensible science” and have been for much of our lives.

For example, think about the following scenario.

Suppose that you are lying in bed at night, not yet asleep, and everyone else in your home, as far as you know, is already asleep. All of a sudden, you hear a sound that you cannot identify or account for. What do you do? Your brain may be tossing around ideas as to what might explain the sound. You may be pretty sure that if you do not find the source of the sound, you will never be able to stop thinking about it, and subsequently, you will have problems getting to sleep. What to do?

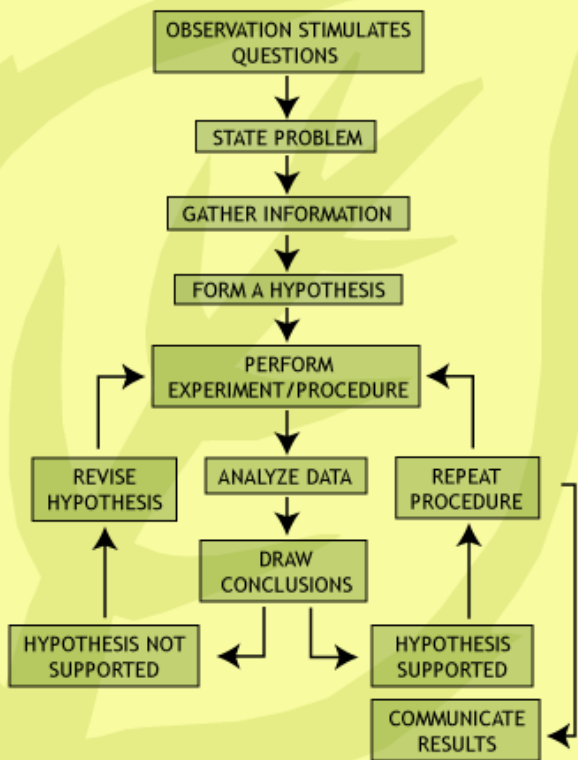
Whether or not you realize it, you have already taken steps down the “scientific road.” You have observed the sound with your sense of hearing. You have hypothesized about the possible source of the sound. That is, you think that you might know the explanation for what caused the sound. So, you

predict that if you get out of bed to go and check, you will find that your new movie poster has fallen off the wall and slid across the kitchen floor. Your procedure is simply to get out of bed to go to the kitchen and make observations. If, when you get to the kitchen, the poster is not on the floor, you will have to make a revised **hypothesis**.

What might have caused the sound you were unable to identify? You make further hypotheses as you wander around the house, and eventually, you observe your nylon jacket on the floor below an overloaded coat hook. You conclude that your nylon jacket sliding off the hook and onto the floor made the sound that you had been unable to identify when you were lying in bed.

The point is, that no matter what problem or issue is to be resolved, the scientific method can help in developing possible explanations for the outcomes. The process will probably not be new to you, as you are already familiar with the processes of hypothesizing, predicting, observing, gathering, organizing, displaying, recording and analyzing data, and drawing conclusions. You employ the scientific method in such simple, everyday activities as the one used in identifying the strange sound in your house. Just to be sure, try this quick review.

A Quick Review of the SCIENTIFIC PROCESS



Think About...

- If a person whose body weight is 80 kg consumes 2 kg of food in one day, would it be reasonable to predict that the person will weigh 82 kg the next day? Explain.

Green Thumb!

Canada's only protected breeding colony of American white pelicans is threatened by the drier conditions causing grassland expansion into Prince Albert National Park. Can you think of a science-based procedure that might help with the threat to the pelicans?

Did You Know?

An improvement of just 1L/100km in the average fuel efficiency of Canadian cars would reduce Canada's carbon dioxide emissions by about 3.3 million tonnes per year. That would have approximately the same effect as closing two modern 450-megawatt coal-fired power plants. The preceding sentence is an example of which step in a scientific procedure?