

ASKING SCIENTIFIC QUESTIONS

Most of the work that you will do in science will involve reproducing experiments already done by other scientists. Technically, we would call these reproductions demonstrations. However, the important thing to remember here is that we are learning how to do the work that real scientists do. In the future, you may be given the opportunity to design your own experiment.

The purpose of doing an experiment is to find the answer to some unanswered scientific question. The success of an experiment and whether or not you ever really find the answer can be dependent on the type(s) of question(s) that you ask.

Some questions are straightforward:

- "At what temperature does water boil?"
- "What effect does weathering have on rocks?"

Some questions might be developed from an observation that you made or an interest in a certain hobby:

- "How are waves made in the ocean?"

You could do some research and find the answer to your question, or you might decide to do an experiment to find out yourself.

If you plan to conduct an experiment yourself, you must first come up with a **testable question**.

TESTABLE QUESTIONS

Experiments can only answer testable questions. For example, an experiment cannot answer the question – "How are waves made in the ocean?"

Here are some testable questions about waves:

1. "What effect does wind speed have on wave height?"
2. "How does the contour of the floor of the ocean affect wave height?"

In each of the questions above, there is an attempt to see the relationship between two variables.

In example #1, the variables are **wind speed** and **wave height**.

In example #2, the variables are **contour** and **wave height**.

By having variables clearly stated in the question, you will find it much easier when you begin making prediction(s) and later design an experiment to test your prediction(s).