

The Scientific Method

1. Choose a Problem

(What do you want to explore? Ask a question about it.)

- Choose something that interests you
- Choose something that you don't know the answer to.
- Choose something that you can work with.

2. Research your problem

(How can you find the answer to your question?)

- Look in books
- Get advice.
- Make observations.

3. Develop a hypothesis -a statement that tries to explain a relationship between variables. (What do you think the answer to your question will be?)

- Use the words "if" and "then".
- Form your hypothesis from a simple question.
- Your hypothesis must be very clear so you can test it.

4. Write your procedures .

(Tell what you will do to test your hypothesis.)

- List the materials you will need.
- List each thing you will do. Number each in order. Write down everything you will do. Others should be able to repeat your experiment by reading your procedures.
- Be sure that you are testing your hypothesis. (Is there anything you haven't considered that could affect your experiment?)
- Control your variables. (A variable is anything that can change or vary during an experiment. In an experiment, everything should be the same each time you test, except the one variable you are testing.)

5. Test your hypothesis.

- Get your materials
- Follow your procedure.
- Make observations.
- Collect data and record it in a journal or notebook.
- Be honest.

6. Organize your data.

- Make tables, charts, or graphs.
- Write a summary.
- Draw pictures or take photographs to show your results and/or procedures.

7. State your conclusions.

(What happened? Was it what you expected? Did you find out what you wanted to know?)

- Look at your data.
- Decide what your data tells you about your hypothesis.
- Decide how you might change your hypothesis based on your results.

- Think about what you might do to experiment further.
- Communicate your results with others.