Designing an Experiment

How do you plan an experiment?

An experiment is used to test a hypothesis. When you plan an experiment, you need to identify the steps you will follow. This step-by-step plan of an experiment is called a **procedure.**

The steps of a procedure tell what you will do in your experiment. They also explain how materials will be used. Review your plan to decide what things you need to carry out the experiment. Then list the materials. You can use the list to help gather the needed materials before you start your experiment.

You need to consider **safety** as you plan an experiment. Most experiments require you to wear safety goggles to protect your eyes and a lab apron to protect your clothes. Your procedure should describe any safety precautions you will follow. Suppose you need to heat a beaker on a hot plate. Your procedure should include instructions for using heat-resistant gloves and beaker tongs for handling the hot beaker.

Sample Procedure

1. Put on safety goggles, a laboratory apron, and rubber gloves.
2. Using scissors, carefully cut a piece of steel wool into equal halves.
3. Set one half of the steel wool aside. Place the other half of the steel wool in a bowl of water for five minutes.
4. Using tongs, remove the steel wool from the water. Place the steel wool on a paper towel.
5. Place the second piece of steel wool on a second piece of paper towel beside the wet piece. Allow both pieces of steel wool to sit overnight.
6. Observe both pieces of steel wool, looking for changes in color or texture. Record your observations.

Show What You Know

1. Look at the procedure above. Why does the first step recommend wearing rubber gloves?

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2. List the materials needed for the experiment described above.

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