HANDS-ON LAB SKILLS/SCIENCE INQUIRY

Science Inquiry

Scientists use the **scientific method** when they conduct experiments and investigations. Scientists may use all or only some of the steps in scientific method as they work.

Steps to Using Scientific Method

Step 1:	Ask a **question** about something you observe.
Step 2:	State your **hypothesis**, which is a possible answer to your question.
Step 3:	Identify your **control variable**, which is the part of your experiment that is not and is used for comparison.
Step 4:	**Test** your hypothesis by conducting an experiment.
Step 5:	Collect and record your **data** during your experiment.
Step 6:	
Step 7:	

Lab Safety

There are many important rules to follow and guidelines to keep in mind when conducting an experiment or investigation. Some of those include:

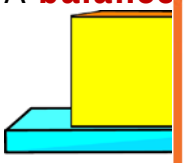
- Listen to all directions before beginning.
- Always wear goggles to **protect your eyes**.
- Clean up all spills.
- Never taste anything unless your teacher tells you that it is okay to do so.
- Handle all equipment carefully, especially sharp or breakable tools.
- If something doesn't look or smell right, tell your teacher right away.
- Wash your hands thoroughly when you are all finished.

Lesson Checkpoint: What should you always do when you have finished an experiment?

Tools Used in the Lab

There are many tools that can be used to study and measure objects. Some of those tools include:

A **balance** i[illegible]



A hand le[illegible]oscope can be use[illegible] great detail.

Thermometers are used to measure temperature.

Metric rulers are used to measure the length and width of objects.

A **camera** can be used to document how an object changed over time.

Funnels can be used to pour liquids or substances into a small opening.

Filter paper can be used to separate a solid from a liquid.

Lesson Checkpoint:
What is a pan balance used to measure?

Making Predictions and Drawing Conclusions

When you conduct an investigation, you may make predictions, interpret your findings, draw conclusions, and justify your conclusions. When you conduct an experiment, you should collect data to help justify your conclusions. Charts and graphs help you organize your data. You may interpret your charts and graphs to justify the predictions you have made during an investigation.

Measuring and Estimating

During an investigation you may need to find the actual measurements of objects or you may be able to estimate a measurement.

Cause and Effect

During an investigation, you may formulate and justify your predictions based on cause and effect relationships. Cause and effect is a relationship between two things. A **cause** makes something else happen. An **effect** is what happens because of the cause.

Example:
Cause: Pl
Effect: Pl

What ***ship?***