

Scientific Method

A series of steps used to help solve a question or test a hypothesis



Observation:

Ask a Question. Is there something you want to know more about?

Example: Why don't all balloons float?



Research:

Use your 5 senses to make observations about the topic. Read books and collect facts about the topic.

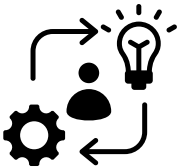
Example: Research different gases. Do they all have the same density?



Hypothesis:

A hypothesis is an educated guess. It can be tested. A hypothesis will start with the words, "If I (do something), then (this will happen)."

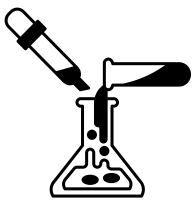
Example: If I fill the balloon with helium, it will float.



Method:

Design a procedure or method to plan how you are going to test your hypothesis. Consider variables like what will stay the same and what will change.

*Example: The balloon will stay the same (**controlled variable**), but it will be filled with different gases (**independent variable**), and it will either sink or float (**dependent variable**).*



Experiment:

Conduct your experiment and record your data. Write down the materials you use, the amount, the temperature, the time, and anything else important to your testing.

Example: A latex balloon was filled with 500mL of helium at 70°F. It floated 8 ft (the height of the ceiling). A latex balloon was filled with 500mL of carbon dioxide at 70°F. It stayed on the ground.



Results:

Analyze your data to determine what effect your independent variable had on your dependent variable. Was your hypothesis right? Wrong? Why?

Example: When the balloon was filled with helium (independent variable) it would float (dependent variable) but when it was filled with carbon dioxide (independent variable) it did not float.



Conclusion:

Write a paper or give an oral presentation stating your conclusion. You can create a poster to display your findings.