

Scientific Method

The Order of Investigations

What is the scientific method?

It is a process that is used to find answers to questions about the world around us.

Is there only one “scientific method”?

No, there are several versions of the scientific method. Some versions have more steps, while others may have only a few. However, they all begin with the identification of a problem or a question to be answered based on observations of the world around us and provide an organized method for conducting and analyzing an experiment.

What is a hypothesis?

It is an educated guess based on observations and your knowledge of the topic.

What is data?

It is information gathered during an experiment.

Identify the Problem

What do you want to know or explain? Use observations you have made to write a question that addresses the problem or topic you want to investigate.

Form a Hypothesis

What do you think will happen?

Predict the answer to your question
or the outcome of the experiment.

Create an Experiment

How will you test your hypothesis?

Develop a procedure for a reliable experiment and address safety rules.

Perform an Experiment

Follow the steps in your procedure to perform your experiment. Record data and observations!

Analyze the Data

Is the data reliable? Does your data and observations from the experiment support your hypothesis?

Is your data inaccurate or the experiment flawed?

Modify the Experiment

Rewrite your procedure to address the flaws in the original experiment.

Communicate the Results

Write a conclusion that summarizes the important parts of your experiment and the results.