ICON

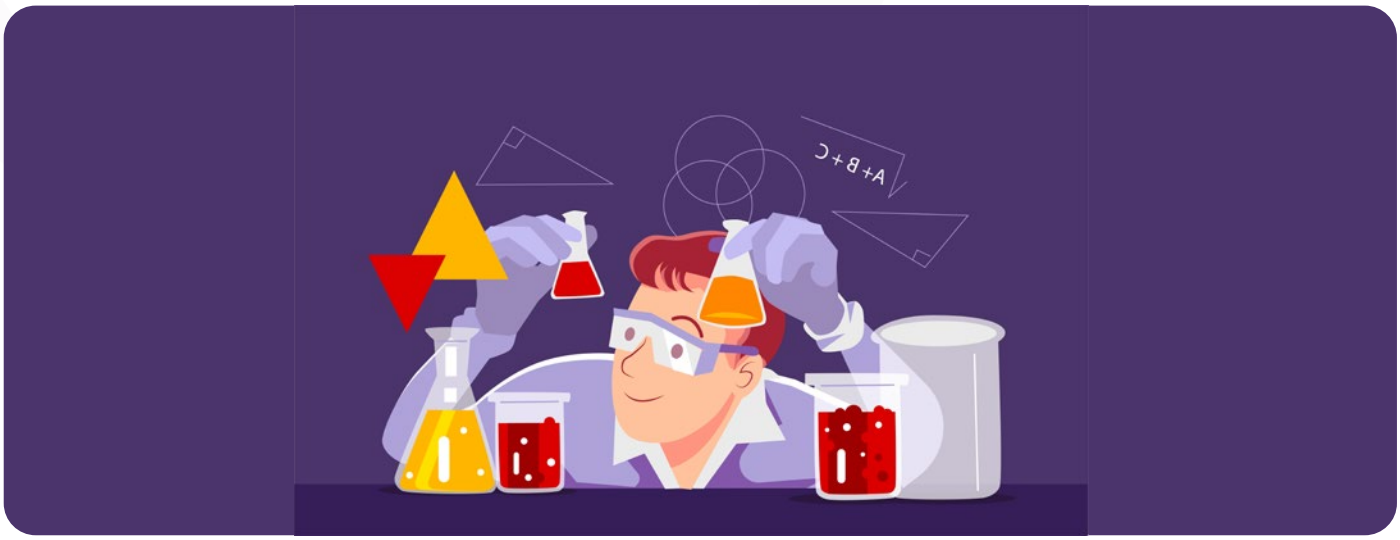
What is Science Inquiry?

What is Science?

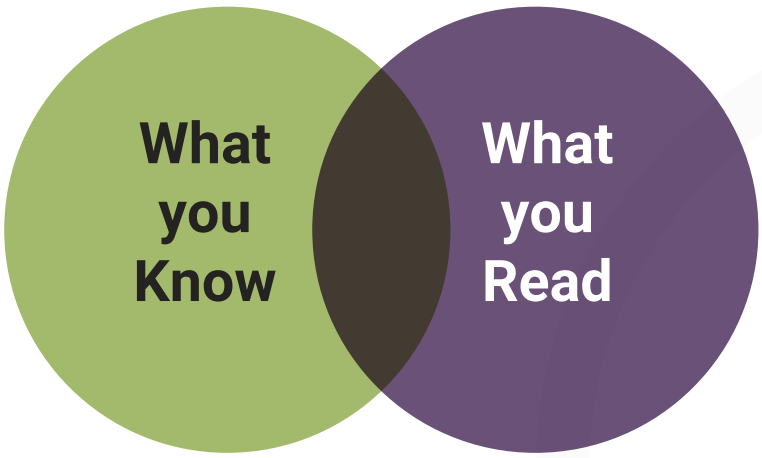
Vocabulary A-Z

Let us learn some vocabulary

Science
the investigation and exploration of natural events and of the new information that results from those investigations.

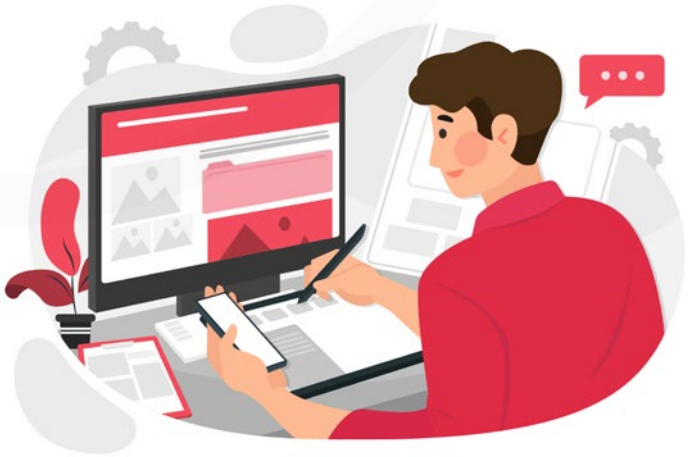


Inference
a logical explanation of an observation that is drawn from prior knowledge or experience.



Observation

using one or more of your senses to gather information and take note of what occurs.

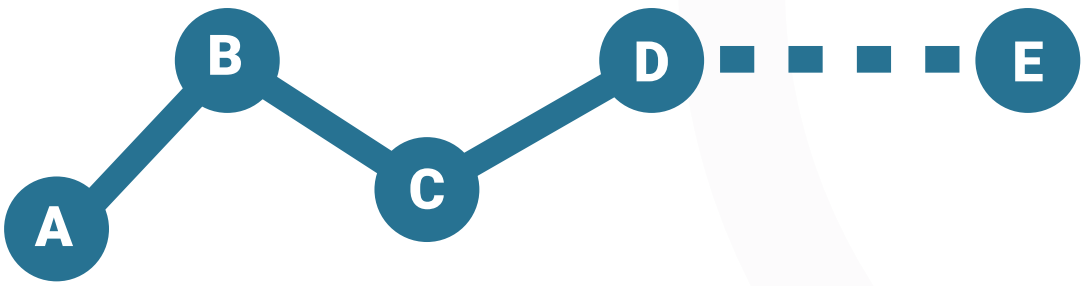


Hypothesis

a possible explanation about an observation that can be tested by scientific investigations.

Prediction

a statement of what will happen next in a sequence of events.

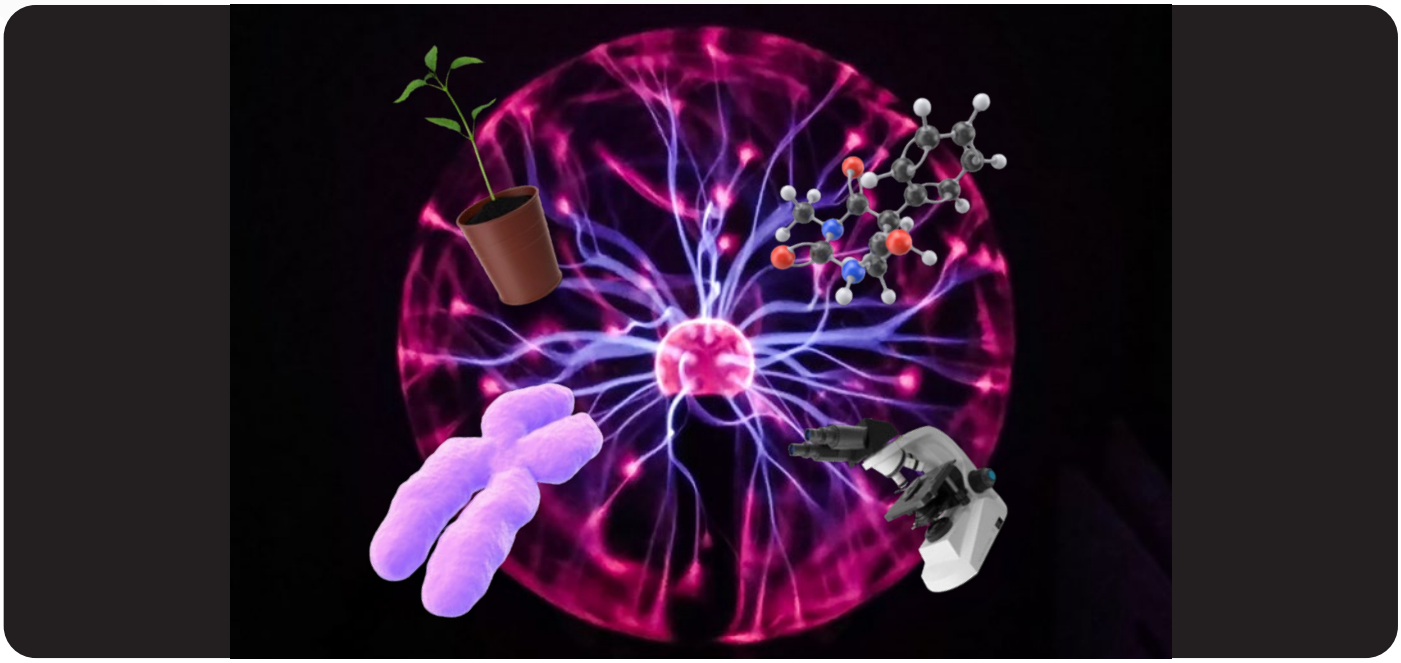


Let's Begin

What is Science Inquiry?

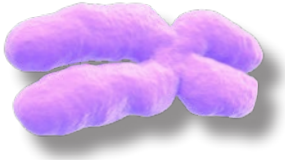
Science is the investigation and exploration of natural events and of the new information that results from those investigations.

People use reasoning, creativity, and skepticism in their daily lives to solve problems

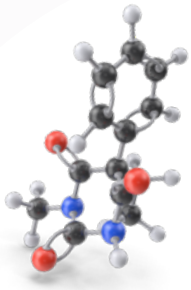


Branches of Science

Biology, or life science, is the study of all living things.

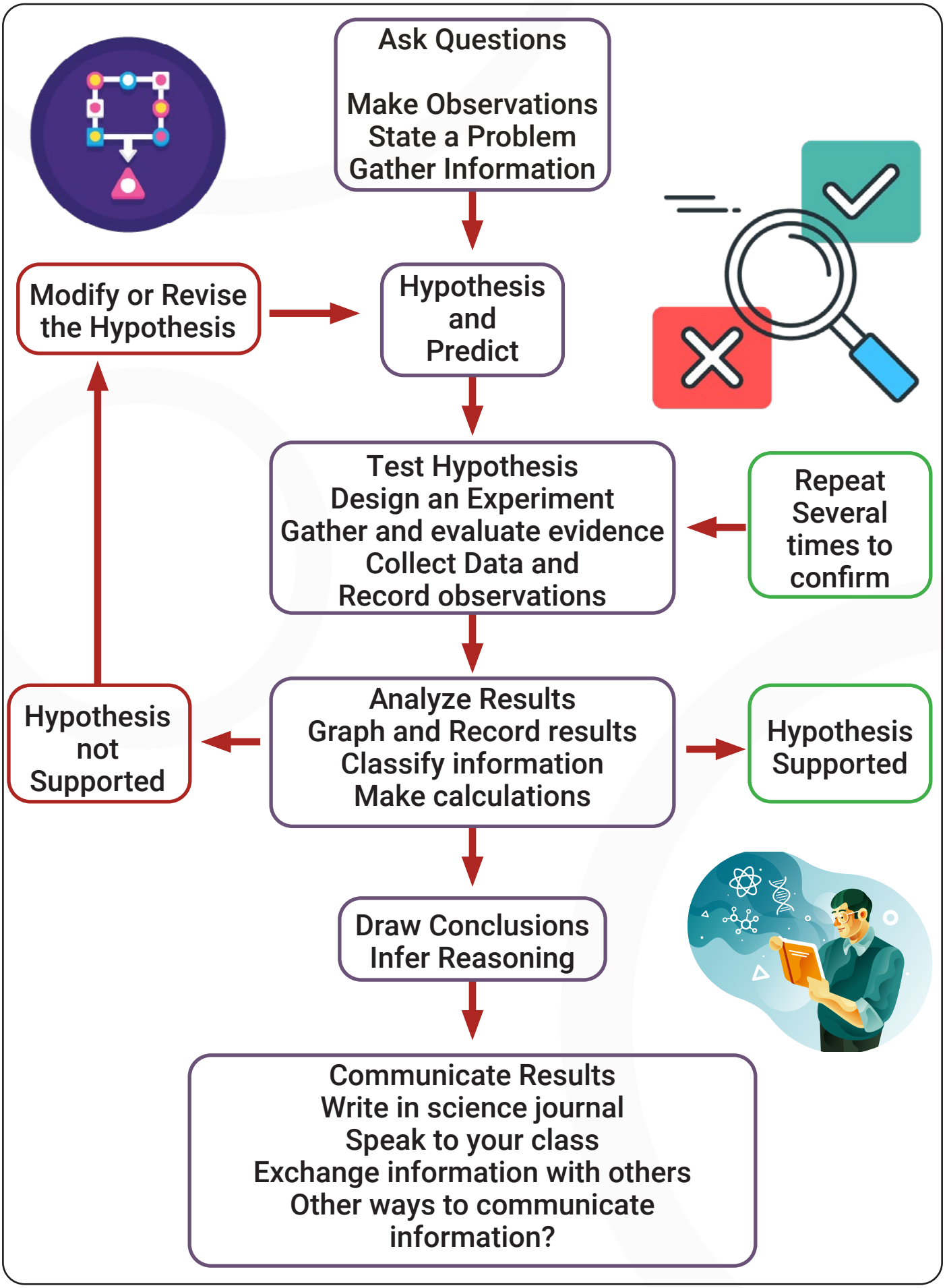


The study of Earth, including landforms, rocks, soil, and forces that shape Earth's surface, is Earth science



The study of chemistry and physics is physical science.

As scientists study the natural world, they usually use certain skills, or methods



Observations often are the beginning of the process of science.

An observation is using one or more of your senses to gather information and take note of what occurs.

Ask question
Make observation
State a problem
Gather information

A possible explanation about an observation that can be tested by scientific investigations is a hypothesis.

A prediction is a statement of what will happen next in a sequence of events

Hypothesize and Predict

Ask question
Make observation
State a problem
Gather information

To test your predictions and hypothesis, you design an experiment.

Test Hypothesis
Design an Experiment
Gather and evaluate evidence
Collect data and record observation

After doing an experiment or research, you organize and analyze your results and findings.

You must determine whether inferences can be made or conclusions drawn from the data.

An inference is a logical explanation of an observation that is drawn from prior knowledge or experience.

Analyze Results
Graph and record results
Classify information
Make Calculations

If your hypothesis is supported by the data, you can repeat the experiment to confirm the results. If your hypothesis is not supported, you may need to modify it

Repeat several times to confirm

Hypothesis Supported

Test Hypothesis

Design an Experiment

Gather and evaluate evidence

Collect data and record observation

Analyze Results

Graph and record results classify information

Make calculations

When you test a hypothesis, you often are testing your predictions.

If your prediction is not confirmed, your hypothesis might need revision.

Hypothesize and Predict

Test Hypothesis

Design an Experiment

Gather and evaluate evidence

Collect data and record observation

Analyze Results

Graph and record results

Classify information

Make Calculations

Hypothesis not Supported

Modify or Revise the Hypothesis

A conclusion is a summary of the information gained from testing a hypothesis.

Draw Conclusions
Infer Reasoning

An important step in scientific inquiry is communicating results.

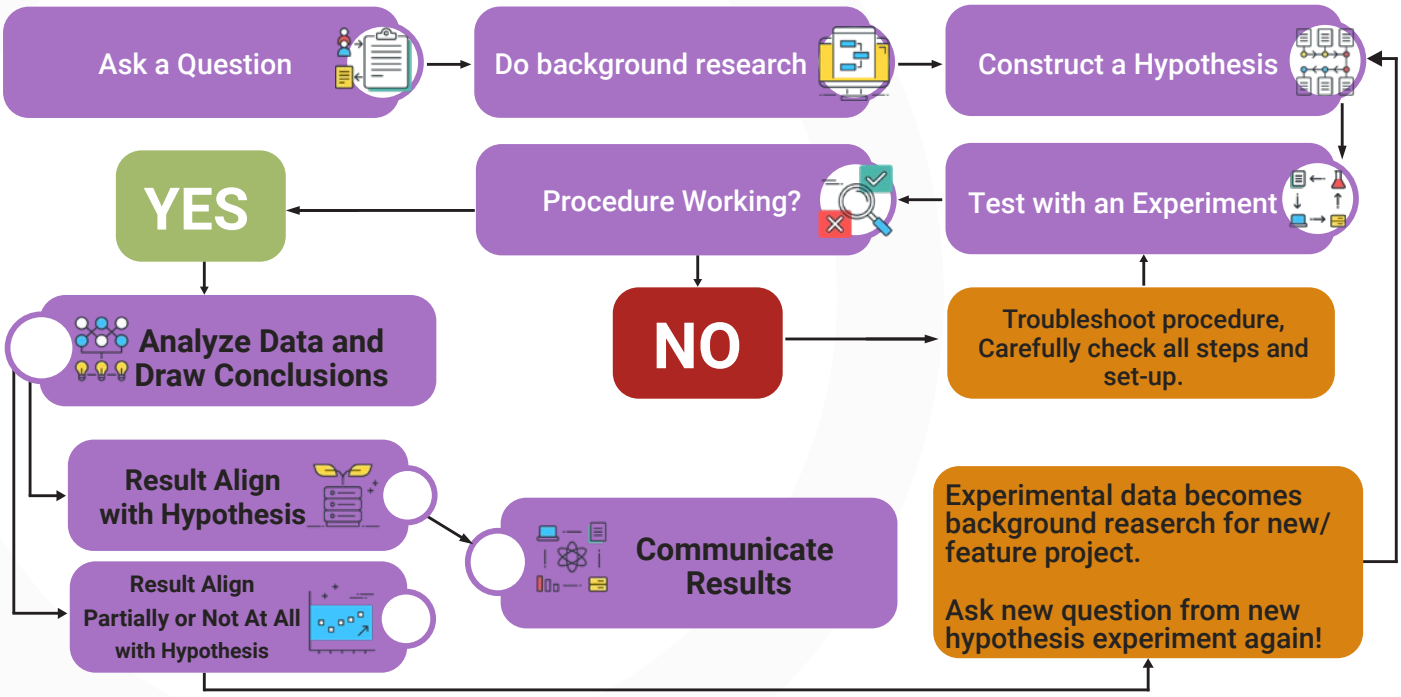
Communicate Results
Write in science journal
Speak to your class
Exchange information with others
Other ways to communicate information?

In science, you perform scientific inquiry to find answers to questions.

The practical use of scientific knowledge, especially for industrial or commercial use is technology.

Many times, scientific investigations answer the questions: who, what, when, where, or how.

Results of Scientific Investigation



Key Concept

1. What is Scientific Inquiry?

2. What are the result of scientific investigations?

Summary

What is Scientific Inquiry?

Some steps used during scientific inquiry are making observations and inferences, developing a hypothesis, analyzing results, and drawing conclusions. These steps, among others, can be performed in any order.

1. Ask a Question	What do you want to know about? Why do you want to know it?
2. Research your question	Has anyone asked it before?
3. Perform a Hypothesis (hi-pot-the-siz):	What do you think is the anwer to your question? Can you test it?
4. Test your Hypothesis (hi-pot-the-siz):	Design and Perform an Experiment Record your Data.
5. Analyze your Data	See if your Data matches your Hypothesis
6. Draw Conclusions	What did you learn? Was your Hypothesis correct? What questions do you have now?

There are many results of scientific inquiry, and a few possible outcomes are the development of new materials and new technology, the discovery of new objects and events, and answers to basic questions.