

A **scientific investigation** is a systematic **process** used by scientists to study the natural world, answer **questions**, and test **hypotheses**. It involves making **observations**, forming a **research question**, developing a **hypothesis**, designing and conducting **experiments**, collecting and analyzing **data**, and drawing **conclusions**.

Scientific investigations follow the **scientific method**, which includes the following steps:

1. **Observation** – Identifying a phenomenon or problem.
2. **Question** – Formulating a specific research question.
3. **Hypothesis** – Proposing a testable explanation.
4. **Experimentation** – Designing and conducting experiments to test the hypothesis.
5. **Data Collection & Analysis** – Gathering and analyzing data to identify patterns or correlations.
6. **Conclusion** – Determine whether the hypothesis is supported or rejected.
7. **Communication** – Sharing findings with the scientific community for peer review.

Scientific investigations can be **experimental**, where variables are controlled and manipulated, or **descriptive/observational**, where data is collected without manipulation of variables.

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