

Chapter 1 Introduction to Earth Science

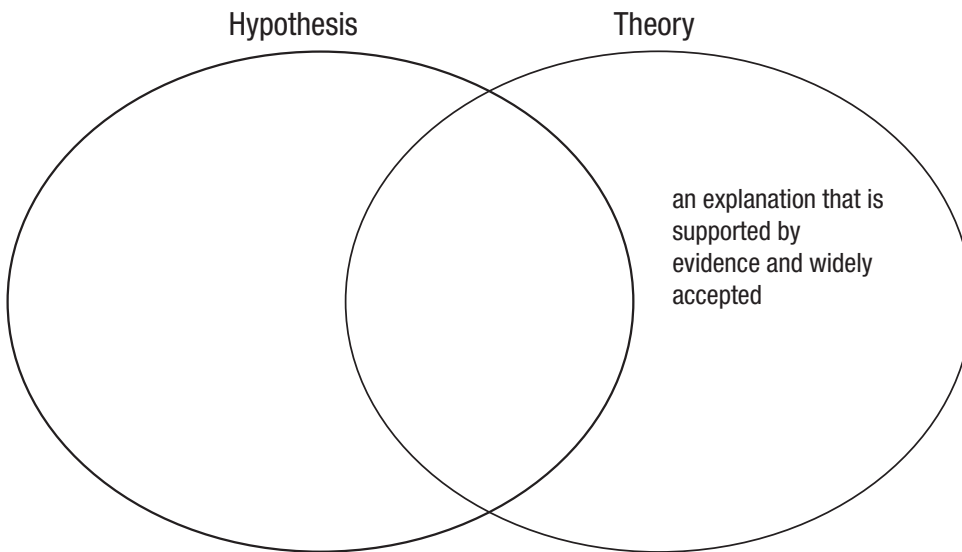
Section 1.5 What Is Scientific Inquiry?

(pages 23–24)

This section describes methods used for scientific inquiry.

Reading Strategy (page 23)

Comparing and Contrasting As you read, complete the Venn diagram by listing the ways that a hypothesis and a theory are alike and how they differ. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.



Hypothesis (pages 23–24)


1. 🎧 What is a hypothesis? _____

2. Is the following sentence true or false? Before a hypothesis can become an accepted part of scientific knowledge, it must be tested and analyzed.

3. Circle the letter of each sentence that is true about hypotheses.
 - a. If a hypothesis can't be tested, it is not scientifically useful.
 - b. Hypotheses that fail rigorous testing are discarded.
 - c. A hypothesis is a well-tested and widely accepted principle.
4. Is the following sentence true or false? Sometimes more than one hypothesis is developed to explain the same set of observations.

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Theory (page 24)

5.  A scientific _____ is well tested and widely accepted by the scientific community and best explains certain observable facts.

6. Describe a scientific theory that is currently accepted as true. _____

Scientific Methods (page 24)

7. Circle the letter that best answers the question. What is the process of gathering facts through observations and formulating scientific hypotheses and theories called?

- a. scientific hypothesis b. scientific theory c. scientific method

8. Using numbers 1–4, put the following basic steps of the scientific method in the correct order.

- _____ Test hypotheses using observations and/or experiments.
- _____ Collect scientific facts through observation and measurement.
- _____ After extensive testing, accept, modify, or reject the remaining hypothesis.
- _____ Develop one or more working hypothesis or models to explain observed facts or measurements.

9. Is the following sentence true or false? All scientists always follow the same steps outlined above when doing scientific research.

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WordWise

Complete the sentences by using the vocabulary terms below.

astronomy	Earth science	hypothesis
atmosphere	geology	latitude
biosphere	geosphere	longitude
contour lines	hydrosphere	meteorology

The name of the group of sciences that deal with Earth and its neighbors in space is called _____.

All the water on Earth makes up the _____.

A word that means “study of Earth” is _____.

A distance measured in degrees north or south of the equator is called _____.

A distance measured in degrees east or west of the prime meridian is called _____.

Lying beneath both the atmosphere and the ocean is the _____.

An untested scientific explanation is called a _____.

The gaseous envelope surrounding Earth is called the _____.

The elevation on a topographic map is shown using _____.

The _____ includes all life on Earth.

The study of the atmosphere and the processes that produce weather and climate is _____.

The study of the universe is _____.