

1.3 Scientific Thinking and Processes

KEY CONCEPT

Science is a way of thinking, questioning, and gathering evidence.



1.3 Scientific Thinking and Processes

Like all science, biology is a process of inquiry.

- Scientists make careful and systematic observations.
- Scientists record observations as data.
- Scientists form a hypothesis as a possible answer to a question.
- Scientists test their hypotheses and analyze their data.



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- Biologists use experiments to test hypotheses.
- Observational studies allow scientists to describe a phenomenon.



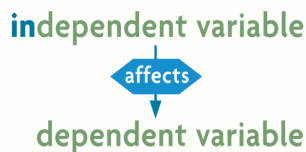
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- Experiments allow scientists to determine what causes a phenomenon.



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- Experimental studies allow scientists to determine what causes a phenomenon.
 - Independent variables are manipulated.
 - Dependent variables are observed and measured.



- Constants are conditions that are kept the same.

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A theory explains a wide range of observations.

- Theories explain a wide range of observations and experimental results.
- A theory is supported by a wide range of scientific evidence.
- Theories can change based on new evidence.

