

- I. Science is a method of studying the natural world.
 - i. Through observation and experimentation, we learn about the world around us.
 - ii. Although classified into 3 different categories
 1. Chemistry
 2. Biology
 3. Physical Science
 - iii. The areas of scientific study often overlap.

Note Check: A scientist is studying the effects of acid rain on a pond's wildlife, which areas of science would he/she need to have knowledge in before experimenting?

- II. Scientists are constantly revising their ideas
 - i. Scientific discoveries and ideas are not static
 - ii. Explanations of scientific ideas must be revised as new information is obtained.
 1. More research leads to more testable questions
 2. More experiments lead to better explanations of scientific ideas
 3. Better technology aids scientists in their discoveries.

Note Check:

In the early 17th and 18th century people believed that illness was due to bad behavior, sinfulness, and evil spirits. In the late 19th and early 20th century scientists began experimented to prove that illness was caused by some “foreign agent” attacking the body. Today thanks to powerful microscopes we know that illness is caused by bacterium or viruses that we have encountered. What does this story tell us about the nature of scientific discovery?

III. Investigations

- i. Scientists learn new information through investigations
 - 1. Simple observations
 - 2. Complex experiments
 - 3. Modeling

IV. Scientific Methods

- i. Although the scientific method has several distinct steps scientist often repeats steps within the process. (See Figure 3 on pg 8 of the text)
- ii. Any scientific investigation must be repeatable and verifiable
 - 1. Peer Review

V. Limitations of Science

- i. Remember scientific investigations must solve a ‘testable’ problem. They cannot solve opinion based problems.