

## 6<sup>th</sup> Grade– Science

### **CONTENT: Earth and Space Sciences**

<b>Skills Based on Academic Content Standards</b>
Describe the rock cycle and explain that there are sedimentary, igneous and metamorphic rocks that have distinct properties (e.g., color, texture) and are formed in different ways.
Explain that rocks are made of one or more minerals.
Identify minerals by their characteristic properties.

### **CONTENT: Life Sciences**

<b>Skills Based on Academic Content Standards</b>
Explain that many of the basic functions of organisms are carried out by or within cells and are similar in all organisms.
Explain that multicellular organisms have a variety of specialized cells, tissues, organs and organ systems that perform specialized functions.
Identify how plant cells differ from animal cells (e.g., cell wall and chloroplasts).
Recognize that an individual organism does not live forever; therefore reproduction is necessary for the continuation of every species and traits are passed on to the next generation through reproduction.
Describe that in asexual reproduction all the inherited traits come from a single parent.
Describe that in sexual reproduction an egg and sperm unite and some traits come from each parent, so the offspring is never identical to either of its parents.
Recognize that likenesses between parents and offspring (e.g., eye color, flower color) are inherited. Other likenesses, such as table manners are learned.
Describe how organisms may interact with one another.

### **CONTENT: Physical Sciences**

<b>Skills Based on Academic Content Standards</b>
Explain that equal volumes of different substances usually have different masses.
Describe that in a chemical change new substances are formed with different properties than the original substance (e.g., rusting, burning).
Describe that in a physical change (e.g., state, shape and size) the chemical properties of a substance remain unchanged.
Describe that chemical and physical changes occur all around us (e.g., in the human body, cooking and industry).
Explain that the energy found in nonrenewable resources such as fossil fuels (e.g., oil, coal and natural gas) originally came from the sun and may renew slowly over millions of years.
Explain that energy derived from renewable resources such as wind and water is assumed to be available indefinitely.
Describe how electric energy can be produced from a variety of sources (e.g., sun, wind and coal).
Describe how renewable and nonrenewable energy resources can be managed (e.g., fossil fuels, trees and water).

## **CONTENT: Science and Technology**

<b>Skills Based on Academic Content Standards</b>
Explain how technology influences the quality of life.
Explain how decisions about the use of products and systems can result in desirable or undesirable consequences (e.g., social and environmental).
Describe how automation (e.g., robots) has changed manufacturing including manual labor being replaced by highly-skilled jobs.
Explain how the usefulness of manufactured parts of an object depend on how well their properties allow them to fit and interact with other materials.
Design and build a product or create a solution to a problem given one constraint (e.g., limits of cost and time for design and production, supply of materials and environmental effects).

## **CONTENT: Scientific Inquiry**

<b>Skills Based on Academic Content Standards</b>
Explain that there are not fixed procedures for guiding scientific investigations; however, the nature of an investigation determines the procedures needed.
Choose the appropriate tools or instruments and use relevant safety procedures to complete scientific investigations.
Distinguish between observation and inference.
Explain that a single example can never prove that something is always correct, but sometimes a single example can disprove something.

**CONTENT: Scientific Ways of Knowing**

<b>Skills Based on Academic Content Standards</b>
Identify that hypotheses are valuable even when they are not supported.
Describe why it is important to keep clear, thorough and accurate records.
Identify ways scientific thinking is helpful in a variety of everyday settings.
Describe how the pursuit of scientific knowledge is beneficial for any career and for daily life.
Research how men and women of all countries and cultures have contributed to the development of science.

