Third Grade

Physical Sciences

1. **Energy and matter have multiple forms and can be changed from one form to another. As a basis for understanding this concept:**
    a. *Students know* energy comes from the Sun to Earth in the form of light.
    b. *Students know* sources of stored energy take many forms, such as food, fuel, and batteries.
    c. *Students know* machines and living things convert stored energy to motion and heat.
    d. *Students know* energy can be carried from one place to another by waves, such as water waves and sound waves, by electric current, and by moving objects.
    e. *Students know* matter has three forms: solid, liquid, and gas.
    f. *Students know* evaporation and melting are changes that occur when the objects are heated.
    g. *Students know* that when two or more substances are combined, a new substance may be formed with properties that are different from those of the original materials.
    h. *Students know* all matter is made of small particles called atoms, too small to see with the naked eye.
    i. *Students know* people once thought that earth, wind, fire, and water were the basic elements that made up all matter. Science experiments show that there are more than 100 different types of atoms, which are presented on the periodic table of the elements.

2. **Light has a source and travels in a direction. As a basis for understanding this concept:**
    a. *Students know* sunlight can be blocked to create shadows.
    b. *Students know* light is reflected from mirrors and other surfaces.
    c. *Students know* the color of light striking an object affects the way the object is seen.
    d. *Students know* an object is seen when light traveling from the object enters the eye.

Life Sciences

3. **Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:**
    a. Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.
    b. Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.
    c. Students know living things cause changes in the environment in which they live: some of these changes are detrimental to the organism or other organisms, and some are beneficial.
    d. Students know when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.
    e. Students know that some kinds of organisms that once lived on Earth have completely disappeared and that some of those resembled others that are alive today.

Earth Sciences

4. **Objects in the sky move in regular and predictable patterns. As a basis for understanding this concept:**

a. *Students know* the patterns of stars stay the same, although they appear to move across the sky nightly, and different stars can be seen in different seasons.

b. *Students know* the way in which the Moon's appearance changes during the four-week lunar cycle.

c. *Students know* telescopes magnify the appearance of some distant objects in the sky, including the Moon and the planets. The number of stars that can be seen through telescopes is dramatically greater than the number that can be seen by the unaided eye.

d. *Students know* that Earth is one of several planets that orbit the Sun and that the Moon orbits Earth.

e. *Students know* the position of the Sun in the sky changes during the course of the day and from season to season.

Investigation and Experimentation

5. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

    a. Repeat observations to improve accuracy and know that the results of similar scientific investigations seldom turn out exactly the same because of differences in the things being investigated, methods being used, or uncertainty in the observation.

    b. Differentiate evidence from opinion and know that scientists do not rely on claims or conclusions unless they are backed by observations that can be confirmed.

    c. Use numerical data in describing and comparing objects, events, and measurements.

    d. Predict the outcome of a simple investigation and compare the result with the prediction.

    e. Collect data in an investigation and analyze those data to develop a logical conclusion.