

FIFTH GRADE: SCIENCE

CONTENT STRANDS:

Life Science (L) Earth and Space Science (E)

Physical Science (P)

COMPETENCIES and Suggested Teaching Objectives:

1. Identify and describe structures and functions in living systems. (L, E)

- a. Investigate levels of organization in organisms including cells, tissues, organs, organ systems, whole organisms, and ecosystems.
- b. Explore ecosystems and biomes.

2. Identify and describe reproduction and heredity of organisms. (L, P)

- a. Define and recognize examples of sexual and asexual reproduction.
- b. Explore how traits are used to classify individual inheritance patterns.

3. Determine the factors that influence the regulation and behavior of organisms. (L, E)

- a. Identify and describe resources needed to grow, reproduce, maintain, and survive in a changing environment.
- b. Investigate ways organisms adapt to their environment.

4. Examine the physical factors of populations as they relate to the formation of an ecosystem. (L, E)

- a. Identify, describe, and illustrate the roles among producers, consumers, and decomposers in a food web.
- b. Investigate resources and other factors (living and nonliving) that promote and limit growth of populations in an ecosystem.

5. Explore the diversity and adaptations of organisms. (L, E)

- a. Classify organisms by their similarities.
- b. Explore and explain biological adaptations in a particular environment.
- c. Research and investigate environmental changes and the inability of a species to adapt.

6. Investigate the structure of the Earth. (E)

- a. Investigate the structure of the atmosphere (gas-air), hydrosphere (liquidwater), and lithosphere (solid-land).
- b. Examine how organisms affect the composition of the Earth and it's atmosphere.
- c. Analyze processes that cause changes on Earth.
- d. Explore fossils as indicators of how life and environmental conditions have changed.

7. Investigate the Earth as a part of the solar system. (E, P)

- a. Explore how the Earth's motion defines the day and the year and influences the phases of the moon and eclipses.
- b. Explain how gravity influences the action of the tides.
- c. Explain and illustrate how the tilt of the Earth's axis and Earth's revolution around the Sun create the seasons.

8. Identify properties and changes of matter. (E, P)

- a. Observe and explore physical and chemical properties such as density, boiling/freezing point, and solubility of a substance.
- b. Explore, observe, discuss, and record physical and chemical changes using everyday substances.
- c. Recognize elements that combine chemically to produce compounds.

d. Demonstrate the ability to use simple measuring devices using metric and English units.

9. Investigate the effect motions and forces have on objects. (E, L, P)

- a. Explore, measure, and graph the motion of an object.
- b. Explore and measure the effect of force on an object.

10. Examine the transformations of forms of energy. (P)

- a. Design and construct simple and compound machines.
- b. Design and construct electrical circuits (open, closed, series, parallel).
- c. Design and construct an electromagnet.