

## **First Semester**

### **S7L1. Students will investigate the diversity of living organisms and how they can be compared scientifically.**

- a. Demonstrate the process for the development of a dichotomous key.
- b. Classify organisms based on physical characteristics using a dichotomous key of the six kingdom system (archaebacteria, eubacteria, protists, fungi, plants, and animals).

### **S7L2. Students will describe the structure and function of cells, tissues, organs, and organ systems.**

- a. Explain that cells take in nutrients in order to grow and divide and to make needed materials.
- b. Relate cell structures (cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria) to basic cell functions.
- c. Explain that cells are organized into tissues, tissues into organs, organs into systems, and systems into organisms.
- d. Explain that tissues, organs, and organ systems serve the needs cells have for oxygen, food, and waste removal.
- e. Explain the purpose of the major organ systems in the human body (i.e., digestion, respiration, reproduction, circulation, excretion, movement, control, and coordination, and for protection from disease).

### **S7L3. Students will recognize how biological traits are passed on to successive generations.**

- a. Explain the role of genes and chromosomes in the process of inheriting a specific trait.
- b. Compare and contrast that organisms reproduce asexually and sexually (bacteria, protists, fungi, plants & animals).
- c. Recognize that selective breeding can produce plants or animals with desired traits.

## **Second Semester**

### **S7L4. Students will examine the dependence of organisms on one another and their environments.**

- a. Demonstrate in a food web that matter is transferred from one organism to another and can recycle between organisms and their environments.
- b. Explain in a food web that sunlight is the source of energy and that this energy moves from organism to organism.
- c. Recognize that changes in environmental conditions can affect the survival of both individuals and entire species.
- d. Categorize relationships between organisms that are competitive or mutually beneficial.
- e. Describe the characteristics of Earth's major terrestrial biomes (i.e. tropical rain forest, savannah, temperate, desert, taiga, tundra, and mountain) and aquatic communities (i.e. freshwater, estuaries, and marine).

### **S7L5. Students will examine the evolution of living organisms through inherited characteristics that promote survival of organisms and the survival of successive generations of their offspring.**

- a. Explain that physical characteristics of organisms have changed over successive generations (e.g. Darwin's finches and peppered moths of Manchester).
- b. Describe ways in which species on earth have evolved due to natural selection.
- c. Trace evidence that the fossil record found in sedimentary rock provides evidence for the long history of changing life forms.