DAVIS ESSENTIAL SKILLS AND KNOWLEDGE

Biology

The main intent of science instruction in Davis School District is that students will value and use science as a process of obtaining knowledge based upon observable evidence.
The Intended Learning Outcomes (ILOs) describe the skills and attitudes students should learn and demonstrate as a result of science instruction.

Intended Learning Outcomes

a. Use Science Process and Thinking Skills
b. Manifest Scientific Attitudes and Interests
c. Demonstrate Understanding of Science Concepts and Principles
d. Communicate Effectively Using Science Language and Reasoning
e. Demonstrate Awareness of Social and Historical Aspects of Science
f. Demonstrate Understanding of the Nature of Science

Students will understand that living organisms interact with one another and their environment.

a. Summarize how energy flows through an ecosystem.
b. Explain relationships between matter cycles and organisms.
c. Describe how interactions among organisms and their environment help shape ecosystems

Students will understand that all organisms are composed of one or more cells that are made of molecules, come from preexisting cells, and perform life functions.

a. Describe the fundamental chemistry of living cells.
b. Describe the flow of energy and matter in cellular function.
c. Investigate the structure and function of cells and cell parts.

Students will understand the relationship between structure and function of organs and organ systems.

a. Describe the structure and function of organs.
b. Describe the relationship between structure and function of organ systems in plants and animals

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Students will understand that genetic information coded in DNA is passed from parents to offspring by sexual and asexual reproduction. The basic structure of DNA is the same in all living things. Changes in DNA may alter genetic expression.

a. Compare sexual and asexual reproduction
b. Predict and interpret patterns of inheritance in sexually reproducing organisms.
c. Explain how the structure and replication of DNA are essential to heredity and protein synthesis.

Students will understand that biological diversity is a result of evolutionary processes.

a. Relate principles of evolution to biological diversity.
b. Cite evidence for changes in populations over time and use concepts of evolution to explain these changes.
c. Classify organisms into a hierarchy of groups based on similarities that reflect their evolutionary relationships.