

SCG102: Integrated Science II

Course Title: Integrated Science II

GRADE LEVEL: 7

CODE: SCG102

COURSE LENGTH: 36 weeks

LABORATORY REQUIREMENT: Students who take this course spend a minimum of 30% of their time engaged in laboratory exercises. All DoDEA science courses have this minimum 30% time period for laboratory exercises.

Major Concepts/Content: Integrated Science II is designed to provide students with an integrated approach to three traditional science disciplines (life science, physical science, earth/space science), in addition to science as inquiry, science & technology, science & social perspectives, and the history & nature of science. The course integrates the traditional disciplines using the unifying concepts and processes of systems, order & organization, evidence, models & explanation, change, consistency & equilibrium, and form & function.

Scientific inquiry and understanding about inquiry are emphasized through practical implications and meaningful applications. Topics students study include water, ecology, geology, plant and animal life, properties of matter, populations, and the solar system.

Major Instructional Activities: Based on the philosophy that scientific knowledge is best acquired through inquiry, the course uses a variety of techniques to introduce, stimulate, explore, and reinforce major scientific concepts, theories, principles, and skills.

Instructional activities are staged in appropriate settings. They include laboratories, classrooms, forms of technology, and field studies. Teaching strategies include investigations, demonstrations, discussions, and hands-on/minds-on experiences.

Major Evaluation Techniques: All aspects (e.g., ability to inquire, scientific understanding of the natural world, and understanding of the nature and utility of science) of progress in science are measured using multiple methods such as individual and group performances, projects, interviews, reports, student-generated works, and/or conventional testing.

Essential Objectives: Upon completion of Integrated Science II, students should be able to:

Engage in full and partial scientific inquiries to design, conduct, and communicate scientific investigations to explore ideas about the natural world.

- Use scientific inquiry to design and conduct scientific investigations to meet a human need, make a decision, solve a human problem, or develop a product.
- Recognize and describe the interrelationship between science and technology.
- Apply the tools of technology (e.g., computers) in scientific endeavors.
- Identify qualities inherent in scientific behavior (e.g., reasoning, insight, energy, skill, and creativity).
- Discuss contributions of men and women of various social and ethnic backgrounds to science and technology.
- Apply science concepts to make decisions (weighing risks and benefits) about students' personal health and well-being.
- Describe the levels of structure and function in living things.
- Explain how evolutionary factors affect biological adaptations in plants and animals.
- Describe the types of soil and how they change.
- Understand the basic principles of ecology, food chains, and ecosystems.
- Identify the causes of weathering and the physical/chemical changes associated with weathering.
- Compare and contrast sexual and asexual reproduction in living organisms.
- Explain a system of classification for living organisms, based on body structure/function and interactions with the environment.
- Explain how the earth's position in the solar system affects seasons, weather, and light.

Last Revised: March 5th, 2009 at 11:23 am.