

# 8<sup>th</sup> grade science

**Preparing Students to be Successful in the 21<sup>st</sup> Century  
Modeling, Teaching, Practicing, and Evaluating...**

**Critical Thinking and Problem Solving Skills  
Information & Communications Technology (ICT) Skills  
Life Skills**

Course Instructor:

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## Course Description:

**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 III is designed to provide students with an integrated approach to three traditional science disciplines (life science, physical science, and 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 and function.

Scientific inquiry and understanding about inquiry are emphasized through practical implications and meaningful applications. Topics students investigate include human physiology, genetics, forces and motion, light, heat, and rocks and minerals.

**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 Expectations:**

- 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 making decisions (weighing risks and benefits) about students' personal health and well-being.
- Describe the characteristics of and relationship between forces and motion.
- Identify and explain the characteristics of light and heat.
- Discuss the structures, functions, and interactions of body systems.
- Explain the role played by genetics and heredity in determining the physical characteristics of organisms.
- Explain the importance of internal regulation and adaptation to the environment in relationship to an organism's survival.
- Explain the structure of the earth in relation to plate tectonics, the rock cycle, and the water cycle.

**Grading Policy:** The grading policy will mirror the established SMS policy

**Materials:** Students will be issued textbooks.