

Hamilton Township School District

Science Curriculum



Science Curriculum Committee

Teachers of Hamilton Township School District
Joseph C. Shaner Elementary School
George Hess Educational Complex
William Davies Middle School

Board of Education Approved: November 11, 2008

**Hamilton Township School District
Social Studies Curriculum**

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I. INTRODUCTION

Philosophy

It is the goal of the Hamilton Township School District Science curriculum to help students achieve a basic understanding of universal scientific principles and acquire the requisite set of skills necessary to apply those principles in daily life. The curriculum, as recommended in the New Jersey Core Curriculum Content Standards, promotes the development of certain habits of mind or attitudes necessary to scientific inquiry, namely, curiosity, skepticism, open-mindedness, and honesty in the collection and interpretation of data. In addition to teaching the knowledge, skills, and attitudes required for scientific endeavor, the curriculum supports the implementation of safe practices in the conduct of scientific research.

Overview

The New Jersey Core Curriculum Content Standards

The New Jersey Core Curriculum Content Standards include ten Science standards, each of which has a number of strands followed by cumulative progress indicators for three grade level clusters: K-4; 5-8; and 9-12. The standards and their associated strands are as follows:

5.1 Scientific Processes

- A. Habits of Mind*
- B. Inquiry and Problem Solving*
- C. Safety*

5.2 Science and Society

- A. Cultural Contributions*
- B. Historical Perspectives*

5.3 Mathematical Applications

- A. Numerical Operations*

- B. Geometry and Measurement*
- C. Patterns and Algebra*
- D. Data Analysis and Probability*

5.4 Nature and Process of Technology

- A. Science and Technology*
- B. Nature of Technology*
- C. Technological Design*

5.5 Life Science

- A. Matter, Energy, and Organization of Living Systems*
- B. Diversity and Biological Evolution*
- C. Reproduction and Heredity*

5.6 Physical Science – Chemistry

- A. Structure and Properties of Matter*
- B. Chemical Reactions*

5.7 Physical Science – Physics

- A. Motion and Forces*
- B. Energy Transformations*

5.8 Earth Science

- A. Earth's Properties and Materials*
- B. Atmosphere and Weather*
- C. Processes that Shape the Earth*
- D. How We Study the Earth*

5.9 Astronomy and Space Science

- A. Earth, Moon, Sun System*
- B. Solar System*
- C. Stars*
- D. Galaxies and Universe*

5.10 Environmental Studies

- A. Natural Systems and Interactions*
- B. Human Interactions and Impact*

The Science Cumulative Progress Indicator Matrix

A comprehensive matrix indicating the grade levels at which each cumulative progress indicator is addressed was created to show the developmental continuum of science

skills and knowledge taught from grades kindergarten through grade eight. Students study the traditional scientific disciplines of biology, physics, chemistry, geology, and astronomy in the broader context of changing social, cultural, historical, and environmental conditions. An emphasis is placed on the interdependent nature of the disciplines as students utilize mathematical applications and technological tools to solve problems and model scientific theories .This integrative approach provides opportunities for students to develop a solid foundation of scientific literacy that has real world application.

**II. SCIENCE CUMULATIVE
PROGRESS INDICATOR
MATRIX K-8**