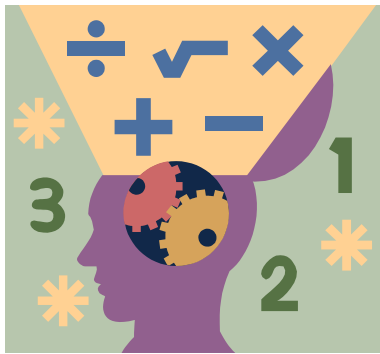


# Hamilton Township School District

## Mathematics Curriculum



### Mathematics 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 Mathematics Curriculum**

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# I. INTRODUCTION

## **Philosophy**

It is the goal of the Hamilton Township School District Mathematics curriculum to support students' acquisition of the "mathematical skills, understandings, and attitudes that they will need to be successful in their careers and daily lives" as stated in the New Jersey Core Curriculum Content Standards for Mathematics. The curriculum promotes the implementation of an inquiry-based model of instruction in which students develop analytical skills as they engage in solving real world problems. This approach is supported by the following themes as outlined in the New Jersey Core Curriculum Content Standards:

- **Providing learning environments** that facilitate student learning by encouraging the hands-on discovery of mathematical concepts rather than the memorization of procedures; providing cooperative settings where students pose and solve meaningful problems; developing mathematical vocabulary and understandings by writing and talking about math every day; using technology to support problem-solving; maintaining high expectations for all students and assessing them with a variety of strategies.
- **Maintaining a commitment to equity and excellence** by fostering respect for the power of mathematics; providing opportunities for success; and nurturing students' beliefs in their mathematical abilities; and encouraging the development of a positive attitude about mathematics.
- **Defining the content and processes** necessary to develop an understanding and command of mathematics by aligning the content, instruction, and assessment to provide for both affective and intellectual growth.

## **Overview**

### **The New Jersey Core Curriculum Content Standards**

The New Jersey Core Curriculum Content Standards include five mathematics standards, each of which has a number of strands followed by cumulative progress indicators for the grade level cluster K-2; each grade level 3-8; and the grade level cluster 9-12. The standards and their associated strands are as follows:

#### **4.1 Number and Numerical Operations**

*A. Number Sense*

*B. Numerical Operations*

*C. Estimation*

#### **4.2 Geometry and Measurement**

*A. Geometric Properties*

*B. Transforming Shapes*

*C. Coordinate Geometry*

*D. Units of Measurement*

*E. Measuring Geometric Objects*

#### **4.3 Patterns and Algebra**

*A. Patterns*

*B. Functions and Relationships*

*C. Modeling*

*D. Procedures*

#### **4.4 Data Analysis, Probability, and Discrete Mathematics**

*A. Data Analysis (Statistics)*

*B. Probability*

*C. Discrete Mathematics – Systematic Listing and Counting*

*D. Discrete Mathematics – Vertex-Edge Graphs and Algorithms*

#### **5.5 Mathematical Processes**

*A. Problem Solving*

*B. Communication*

*C. Connections*

*D. Reasoning*

*E. Representations*

*F. Technology*

### **The Mathematics Performance Indicator Matrix**

Performance indicators were created for each of the standards by combining cumulative progress indicators from the various strands that could be wrapped together into measureable performance outcomes at each grade level. A comprehensive matrix indicating the grade levels at which each performance indicator is addressed was created to show the developmental continuum of mathematics knowledge and skills taught from grades kindergarten through grade eight. The performance indicators were then organized into units of study incorporating performance indicators from the various standards and supported by curricular maps, unit plans, and common assessments. This integrative approach provides opportunities for students to explore mathematical concepts, to develop self-confidence in the application of mathematical principles, to refine their ability to think in mathematical terms, and to apply mathematical concepts in the solution of authentic problems.

**II. MATHEMATICS  
PERFORMANCE INDICATOR  
MATRIX K-8**