



## Performance Indicator Alignment

Although the 2005 mathematics standard is different in structure from the previous standard documents, there are many similarities as indicated in the degree of alignment shown in the crosswalk. By listing performance indicators for both process and content strands, the 2005 standard places as much emphasis on instruction as on curriculum. The performance indicators for the process strands stress instruction – how students learn and how teachers teach mathematics - and what mathematics is as a discipline. On the other hand, the performance indicators for the content strands stress curriculum – what students need to know and be able to do. The crosswalk included in this document primarily compares the content performance indicators of the 2005 Content Strands with those of the 1999 Core Curriculum. This in no way should be interpreted to mean that the process strands are of less importance than the content strands. They are both equally important. The performance indicators for the process strands were not included in the crosswalk because they basically did not have a counterpart in Standard 3 of the 1999 Core Curriculum. They are one of the major additions to the 2005 mathematics standard.

The following performance indicators from Math A and Math B have no counterpart in the content strands of the 2005 Core Curriculum at the high school level because they are included in the PreK-8 portion of the 2005 mathematics standard. This does not mean that they are not to be addressed at the high school level.

### **Math A**

#### ***Number and Numeration***

2B Recognize the order of real numbers

#### ***Operations***

3C Recognize and identify symmetry and transformations on figures

#### ***Modeling/Multiple Representation***

4C Use transformations in the coordinate plane

## **Math B**

### *Number and Numeration*

- 2B Recognize the order of real numbers
- 2C Apply the properties of the real numbers to various subsets of numbers

The following performance indicators from Math B have no direct counterpart in the content strands of the 2005 Core Curriculum at the high school level but are stressed within the five process strands.

### *Problem Solving*

- 4A Represent problem situations symbolically by using algebraic expressions, sequences, tree diagrams, geometric figures, and graphs

### *Representation*

- 4C Choose appropriate representations to facilitate the solving of a problem

### *Connections*

- 7G Model real-world situations with the appropriate function

The following performance indicators from Math A and Math B do not have any direct counterpart in the 2005 Standard. This does not mean, however, that they are not addressed in the 2005 Standard. There is a comment for each performance indicator with an explanation as to how it is addressed in the 2005 Standard.

## **Math A**

### *Measurement*

- 5F Apply proportions to scale drawings and direct variation

Although not specifically stated, students would be expected to make these applications of proportions during

their study of proportions in Math 7, Math 8, Algebra, and Geometry

- 5I Use geometric relationships in relevant measurement problems involving geometric concepts  
Although not specifically stated, students should continually use geometric relationships as they are involved in the measurement and geometry strands of the standard.

***Patterns/Functions***

- 7D Model real-world situations with the appropriate function

Students should continually model real-world situations with the appropriate function while making connections in the *Connections* strand.

**Math B**

***Number and Numeration***

- 2D Recognize the hierarchy of the complex number system

Teachers should continually have students look at the development of our number system and see that each set of numbers is a subset of other sets; i.e. our number system develops in the following way: counting numbers, whole numbers, integers, rational numbers, irrational numbers, complex numbers and that each time a new type of number is introduced it has all the previous numbers as subsets. This is implied in the 2005 standard, but not specifically stated as a performance indicator.

***Modeling/Multiple Representation***

- 4D Develop meaning for basic conic sections

This is alluded to in G.G.1-G.G.7 (equations of conic sections) with basic meanings implied. Student activities should engage them in the basic meanings.

4G Represent graphically the sum and difference of two complex numbers

A2.N.9 requires operations with complex numbers, but the graphic sum and difference of two complex numbers is not specifically indicated. Although not specifically stated, it is expected that teachers would have students model the arithmetic operations graphically.

4H Model quadratic inequalities both algebraically and graphically

This performance indicator is a pre-requisite for the performance indicators in the new standard that deal with the solution of inequalities, but is not directly addressed.

4I Model the composition of transformations

Could be covered in the representation strand, but it is not directly stated there.

4K Use polynomial, trigonometric, and exponential functions to model real-world relationships

Students are expected to use polynomial, trigonometric, and exponential functions, but the standard does not mention application in real-world settings. Applications in real-world settings should be a part of the *Connections* strand, but applications should be natural, not contrived.

4N Use graphing utilities to create and explore geometric and algebraic models

Technology tools are implied to be fully integrated into the mathematics curriculum as described by the new standard. Hence, the direct statement of this performance indicator is unnecessary.

### ***Measurement***

5B Understand error in measurement and its consequence on subsequent calculations

Addressed somewhat in performance indicator A.M.3. Relative error in measuring square and cubic units when error occurs in linear measure. No mention is made of consequence on subsequent calculations. Teachers would be expected to discuss this in the application of the performance indicator.

***Patterns/Functions***

7C Translate among the verbal descriptions, tables, equations, and graphic forms of functions

Implied in several performance indicators, but never directly addressed. Teachers should continually show multiple representations throughout the entire curriculum.

7O Apply the ideas of symmetry in sketching and analyzing graphs of functions

Implied, but not specifically stated. Teachers would have students do this as they are engaged in activities involving the sketching and analyzing of graphs of functions.