

Critical Foundations For U.S. School Children

The National Mathematics Advisory Panel is expected to call for the following "critical foundations" or benchmarks for U.S. school children.

Fluency with whole numbers:

1. By the end of *grade three*, students should be proficient with the addition and subtraction of whole numbers.
2. By the end of *grade five*, students should be proficient with multiplication and division of whole numbers.

Fluency with fractions:

1. By the end of *grade four*, students should be able to identify and represent fractions and decimals, and compare them on a number line or with other common representations of fractions and decimals.
2. By the end of *grade five*, students should be proficient with comparing fractions and decimals and common percents, and with the addition and subtraction of fractions and decimals.
3. By the end of *grade six*, students should be proficient with multiplication and division of fractions and decimals.
4. By the end of *grade six*, students should be proficient with all operations involving positive and negative integers.
5. By the end of *grade seven*, students should be proficient with all operations involving positive and negative fractions.
6. By the end of *grade seven*, students should be able to solve problems involving percent, ratio and rate and extend this work to proportionality.

Geometry and measurement:

1. By the end of *grade five*, students should be able to solve problems involving perimeter and area of triangles and all quadrilaterals having at least one pair of parallel sides (i.e. trapezoids).
2. By the end of *grade six*, students should be able to analyze the properties of two dimensional shapes and solve problems involving perimeter and area, and analyze the properties of three-dimensional shapes and solve problems involving surface area and volume.
3. By the end of *grade seven*, students should be familiar with the relationship between similar triangles and the concept of the slope of a line.

(Source: Draft of National Mathematics Advisory Panel final report) 3/10/08