K-12 Mathematics Benchmarks

By the end of the K-2 program:

Number, Number Sense and Operations	Measurement	Geometry and Spatial Sense
A. Use place value concepts to represent whole numbers using numerals, words and physical models. B. Recognize, classify, compare and order whole numbers. C. Represent commonly used fractions using words and physical models. D. Determine the value of a collection of coins and dollar bills. E. Make change using coins for values up to one dollar. F. Count, using numerals and ordinal numbers. G. Model, represent and explain addition as combining sets and counting on. H. Model, represent and explain subtraction as comparison, take-away and part-to-whole. I. Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting. J. Model, represent and	A. Explain the need for standard units of measure. B. Select appropriate units for length, weight, volume (capacity) and time, using: • objects; i.e., non-standard units; • U.S. customary units: inch, foot, yard, ounce, pound, cup, quart, gallon, minute, hour, day, week and year; • metric units: centimeter, meter, gram and liter. C. Develop common referents for units of measure for length, weight, volume (capacity) and time to make comparisons and estimates. D. Apply measurement techniques to measure length, weight and volume (capacity). E. Recognize that using different units of measurement will yield different numbers for the same measurement.	A. Describe and create plane figures: circle, rectangle, square, triangle, hexagon, trapezoid, parallelogram and rhombus, and identify them in the environment. B. Describe solid objects: cube, rectangular prism, sphere, cylinder, cone and pyramid, and identify them in the environment. C. Sort and compare two-dimensional figures and three-dimensional objects according to their characteristics and properties. D. Identify, explain and model (superposition, copying) the concept of shapes being congruent and similar. E. Recognize two- and three-dimensional objects from different positions. F. Describe location, using comparative (before, after), directional (above, below), and positional (first, last) words. G. Identify and draw figures with line symmetry.

explain division as sharing equally, repeated subtraction and rectangular arrays.		

K-12 Mathematics Benchmarks

By the end of the K-2 program:

Patterns, Functions and Algebra	Data Analysis and Probability	Mathematical Processes
A. Sort, classify and order objects by size, number and other properties, and describe the attributes used. B. Extend sequences of sounds and shapes or simple number patterns, and create and record similar patterns. C. Create and extend patterns, and describe the rule in words. D. Model problem situations, using objects, pictures, numbers and other symbols. E. Solve open sentences and explain strategies. F. Represent an unknown quantity as a variable using a symbol, such as , □, □ G. Describe and compare qualitative and quantitative changes.	A. Pose questions and gather data about everyday situations and familiar objects. B. Sort and classify objects by attributes, and organize data into categories in a simple table or chart. C. Represent data using objects, picture graphs and bar graphs. D. Describe the probability of chance events as more, less or equally likely to occur.	A. Use a variety of strategies to understand problem situations; e.g., discussing with peers, stating problems in own words, modeling problems with diagrams or physical materials, identifying a pattern. B. Identify and restate in own words the question or problem and the information needed to solve the problem. C. Generate alternative strategies to solve problems. D. Evaluate the reasonableness of predictions, estimations and solutions. E. Explain to others how a problem was solved. F. Draw pictures and use physical models to represent problem situations and solutions. G. Use invented and conventional symbols and common language to describe a problem situation and solution.

K-12 Mathematics Benchmarks

By the end of the K-2 program:

Number, Number Sense and Operations	Measurement	Geometry and Spatial Sense
K. Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions. L. Demonstrate fluency in adding and subtracting multiples of 10, and recognize combinations that make 10. M. Add and subtract two-digit numbers with and without regrouping.		

K-12 Mathematics Benchmarks

By the end of the K-2 program:

Patterns, Functions and Algebra	Data Analysis and Probability	Mathematical Processes
		H. Recognize the mathematical meaning of common words and phrases, and relate everyday language to mathematical language and symbols. I. Communicate mathematical thinking by using everyday language and appropriate mathematical language.