

IKM-Manning Curriculum
Mathematics Standards / Benchmarks / Indicators
January 2008

Standards:

The students will demonstrate understanding of number and operations

The students will demonstrate understanding of algebra

The students will demonstrate understanding of geometry and measurement

The students will demonstrate understanding of data analysis and probability

Course Benchmarks:

- 4.1.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems (H, L, C)
- 4.1.2 Compute with whole numbers, simple fractions and decimals
- 4.1.3 Apply estimation strategies involving sums, differences, products and quotients (H, L, C, V)
- 4.1.4 Understand and apply estimation strategies (H, L, C, V)
- 4.1.5 Apply appropriate computational techniques in a problem solving situation (H, L, C, V)
- 4.2.1 Understands and analyzes mathematical situations using algebraic symbols (H, L, C)
- 4.2.2 Apply concepts of algebra in a problem solving situation (H, C, L, V)
- 4.3.1 Describe geometric properties and relationships (H, L, C)
- 4.3.2 Apply appropriate formulas to determine measurements (H, L, C, V)
- 4.3.3 Understands measurement using standard units in the customary and metric systems (H, L, C)
- 4.3.4 Apply the concepts of geometry and measurement in a problem solving situation (H, L, C, V)
- 4.4.1 Apply basic statistical concepts (H, L, C, V)
- 4.4.2 Apply concepts of data analysis and probability in a problem solving situation (H, L, C, V)

4th Grade

4.1 Numbers and Operations

4.1.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems (H, L, C)

- 4.1.1.A Read and write whole numbers in the millions
- 4.1.1.B Order and compare whole numbers and decimals to two decimal places
- 4.1.1.C Add and subtract decimals through hundredths place (Money)
- 4.1.1.D Round whole numbers to the nearest ten and hundred place (376 rounded to 380)
- 4.1.1.E Round whole numbers to the greatest (hundred thousand) place value (376,000 rounded to 400,000)
- 4.1.1.F Name and write fractions of a set and for mixed number greater than 1
- 4.1.1.G Add and subtract fractions with like denominators
- 4.1.1.H Use expanded form to represent numbers to 1 millions place
- 4.1.1.I List factors or multiples for numbers

4.1.2 Compute with whole numbers, simple fractions and decimals

- 4.1.2.A Add multi-digit numbers (3 digit columns)
- 4.1.2.B Subtract 6-digit numbers with regrouping and zeros in subtraction
- 4.1.2.C Know multiplication facts for 6-12
- 4.1.2.D Multiply a multi-digit (3) by a 1 or 2-digit number
- 4.1.2.E Divide a multi-digit (3) by a 1-digit number

4.1.3 Apply estimation strategies involving sums, differences, products and quotients (H, L, C, V)

- 4.1.3.A Estimate sums and differences
- 4.1.3.B Make precise calculations and check the validity of the results using estimation
- 4.1.3.C Round numbers to nearest ten, hundred, and thousand

4.1.4 Understand and apply estimation strategies (H, L, C, V)

- 4.1.4.A Use estimation to verify if calculated results are reasonable
- 4.1.4.B Indicate the advantages of estimates and exact answers

4.1.5 Apply appropriate computational techniques in a problem solving situation (H, L, C, V)

- 4.1.5.A Add multi-digit numbers (3 digit columns)
- 4.1.5.B Subtract 4 digit numbers with regrouping and zeros in subtraction
- 4.1.5.C Know multiplication facts for 6-12
- 4.1.5.D Multiply a multi-digit (3) by a 1 or 2-digit number
- 4.1.5.E Divide a multi-digit (3) by a 1-digit number
- 4.1.5.F Solve problems using computation
- 4.1.5.G Understand relationships between operations (+ and X)

4.2 Algebra

4.2.1 Understands and analyzes mathematical situations using algebraic symbols (H, L, C)

- 4.2.1.A Use letters, boxes, or other symbols to stand for any number in equations
- 4.2.1.B Use parentheses to solve equations
- 4.2.1.C Write a simple expression or equation using a variable
- 4.2.1.D Repeat and expand pattern
- 4.2.1.E Solves number sentences involving addition and subtraction with one variable.

4.2.2 Apply concepts of algebra in a problem solving situation (H, C, L, V)

- 4.2.2.A Solve equations with missing addends
- 4.2.2.B Analyze problems by identifying relationships, discriminating relevant from irrelevant information, sequencing and prioritizing information, and observing patterns

4.3 Geometry and Measurement

4.3.1 Describe geometric properties and relationships (H, L, C)

4.3.1.A Identify and draw lines that are parallel, perpendicular, and intersecting

4.3.2 Apply appropriate formulas to determine measurements (H, L, C, V)

4.3.2.A Understand and use formulas to solve problems involving perimeters and areas of rectangles and squares

4.3.2.B Identify similar/congruent figures

4.3.2.C Identify line of symmetry

4.3.2.D Identify right angles, acute angles and obtuse angles

4.3.2.E Identify space figures and identify attributes (faces, edges, vertices) of space figures

4.3.2.F Identify triangles (equilateral, isosceles, scalene)

4.3.2.G Identify quadrilaterals (rhombus, square, rectangle, parallelogram, trapezoid)

4.3.3 Understands measurement using standard units in the customary and metric systems (H, L, C)

4.3.3.A Name and identify relationships among customary units of capacity and weight

4.3.3.B Compute elapsed time

4.3.3.C Count back change up to \$10.00

4.3.4 Apply the concepts of geometry and measurement in a problem solving situation (H, L, C, V)

4.3.4.A Understand and use formulas to solve problems involving perimeters and areas of rectangles and squares

4.4 Data Analysis and Probability

4.4.1 Apply basic statistical concepts (H, L, C, V)

4.4.1.A Formulate survey questions; collect and represent data with tables and bar and line graphs

4.4.2 Apply concepts of data analysis and probability in a problem solving situation (H, L, C, V)

4.4.2.A Choose topic, collect (by surveys, observations, or experiments), and organizes data using visual displays for analysis. (Covered in Science Curric)

4.4.2.B Applies probability to a given situation (ex. Certain, equally likely, impossible).

*Coding for Infusion Topics covered in curriculum:

Higher Order Thinking Skills (H), Vocational/Career Education (V), Global Education (G), Multi-Cultural/Gender Fair (MCGF), Learning Skills (L), Communication Skills (C), Technology (T)