

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:

- 8.1.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems
- 8.1.2 Compute with rational numbers and integers
- 8.1.3 Understand and apply estimation strategies
- 8.1.4 Apply appropriate computational techniques in a problem solving situation
- 8.2.1 Write, solve, and evaluate algebraic expressions, equations and inequalities
- 8.2.2 Represent and generalize patterns
- 8.2.3 Apply concepts of algebra in a problem solving situation
- 8.3.1 Understands characteristics and properties of plane and spatial shapes
- 8.3.2 Demonstrate appropriate techniques, tools, and formulas to determine measurements
- 8.3.3 Use coordinate geometry to describe location
- 8.3.4 Apply the concepts of geometry and measurement in a problem solving situation
- 8.4.1 Apply basic statistical concepts
- 8.4.2 Apply basic probability concepts
- 8.4.3 Apply concepts of data analysis and probability in a problem solving situation

8th Grade

8.1 Numbers and Operations

8.1.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems

8.1.1.A Differentiate between rational and irrational numbers

8.1.2 Compute with rational numbers and integers

8.1.2.A Add, subtract, multiply, and divide rational numbers

8.1.3 Understand and apply estimation strategies

8.1.4 Apply appropriate computational techniques in a problem solving situation

8.1.4.A Understand operations such as opposite, reciprocal, raising to a power, and taking a root, and use them in applied context

8.2 Algebra

8.2.1 Write, solve, and evaluate algebraic expressions, equations and inequalities

- 8.2.1.A Represent equations as graphs and use graphs to approximate and verify solutions
- 8.2.1.B Demonstrate understanding of rate of change (which is constant in linear situations) and determine the key points of a linear situation when it is presented through an equation, a table, or a graph
- 8.2.1.C Solve linear equations and inequalities and interpret the reasonableness and meaning of the solutions
- 8.2.1.D Explore relationships between symbolic expressions and graphs of lines, including slope.
- 8.2.1.E Add and subtract polynomials, multiply a polynomial by a polynomial

8.2.2 Represent and generalize patterns

8.2.3 Apply concepts of algebra in a problem solving situation

- 8.2.3.A Support solutions using mathematical language
- 8.2.3.B Make connections between the solution and other mathematical concepts and the real world

8.3 Geometry and Measurement

8.3.1 Understands characteristics and properties of plane and spatial shapes

- 8.3.1.A Use the properties of parallel lines cut by a transversal, congruent and similar triangles to answer questions about geometric situations
- 8.3.1.B Find the volume of prisms, pyramids, and cylinders

8.3.2 Demonstrate appropriate techniques, tools, and formulas to determine measurements

8.3.3 Use coordinate geometry to describe location

- 8.3.3.A Graph points on a coordinate system
- 8.3.3.B Analyze using a variety of methods to find the validity of the pythagorean theorem

8.3.4 Apply the concepts of geometry and measurement in a problem solving situation

8.4 Data Analysis and Probability

8.4.1 Apply basic statistical concepts

- 8.4.1.A Use information displayed in graphs (line, bar, circle, and picture graphs and histograms)
- 8.4.1.B Explain and critique the process of a survey and how that might have contributed to or influenced the results (e.g. reliability of sampling procedures, bias, missing or incorrect information)

8.4.2 Apply basic probability concepts

8.4.2.A Predict outcomes and make reasonable estimates

8.4.3 Apply concepts of data analysis and probability in a problem solving situation

8.4.3.A Analyze problems by identifying relationships, discriminating relevant from irrelevant information, identifying missing information, sequencing, and prioritizing information, and observing patterns

*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)