

8th Grade Math
Standards and Benchmarks
HCPSIII
1/14/13

Standard 1: Numbers and Operations: NUMBER SENSE: Understand numbers, ways of representing numbers, relationships among numbers, and number systems

Benchmark MA.8.1.1	Identify situations represented by square roots and cube roots
Example Garden Lessons	

Benchmark MA.8.1.2	Compare and order rational numbers and square roots
Example Garden Lessons	

Benchmark MA.8.1.3	Use ratios and proportions to represent the relationship between two quantities
Example Garden Lessons	

Standard 2: Numbers and Operations: OPERATION SENSE: Understand the meaning of operations and how they relate to each other

Benchmark MA.8.2.1	Apply the order of operations when calculating with rational numbers
Example Garden Lessons	

Benchmark MA.8.2.2	Demonstrate the inverse relationship between square numbers and square roots, and cubes and cubed roots
Example Garden Lessons	

Standard 3: Numbers and Operations: COMPUTATION STRATEGIES: Use computational tools and strategies fluently and, when appropriate, use estimation

Benchmark MA.8.3.1	Add, subtract, multiply, and divide numbers with whole number exponents
Example Garden Lessons	

Benchmark MA.8.3.2	Estimate a reasonable range (i.e., upper and lower limit) for the solution to a problem
Example Garden Lessons	

Standard 4: Measurement: FLUENCY WITH MEASUREMENT: Understand attributes, units, and systems of units in measurement; and develop and use techniques, tools, and formulas for measuring

Benchmark MA.8.4.1	Select and use appropriate units to measure the surface area and volume of solids
Example Garden Lessons	

Benchmark MA.8.4.2	Express rates of change as a ratio of two different measures, where units are included in the ratio, and use the derived rate to solve problems
Example Garden Lessons	

Benchmark MA.8.4.3	Use ratios and proportions to solve measurement problems
Example Garden Lessons	

Benchmark MA.8.4.4	Use formulas to determine the surface area and volume of selected prisms, cylinders, and pyramids
Example Garden Lessons	

Standard 5: Geometry and Spatial Sense: PROPERTIES AND RELATIONSHIPS: Analyze properties of objects and relationships among the properties

Benchmark MA.8.5.1	Apply the Pythagorean theorem to solve problems involving right triangles
Example Garden Lessons	

Standard 6: Geometry and Spatial Sense: TRANSFORMATIONS AND SYMMETRY: Use transformations and symmetry to analyze mathematical situations

Benchmark MA.8.6.1	Perform a transformation (reflection, rotation, translation) when given a figure and necessary parameters
Example Garden Lessons	

Benchmark MA.8.6.2	Describe the size, position, and orientation of shapes under transformations and compositions of transformations
Example Garden Lessons	

Standard 7: Geometry and Spatial Sense: VISUAL AND SPATIAL SENSE: Use visualization and spatial reasoning to solve problems both within and outside of mathematics

Benchmark MA.8.7.1	Use two-dimensional representations of pyramids, prisms, and cylinders to solve problems involving these figures
Example Garden Lessons	

Standard 8: Geometry and Spatial Sense: REPRESENTATIONAL SYSTEMS: Select and use different representational systems, including coordinate geometry

Benchmark MA.8.8.1	Use coordinate geometry to represent transformations in the coordinate plane
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Example Garden Lessons	
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Standard 9: Patterns, Functions, and Algebra: PATTERNS AND FUNCTIONAL RELATIONSHIPS: Understand various types of patterns and functional relationships

Benchmark MA.8.9.1	Represent a variety of patterns (including recursive patterns) with tables, graphs (including graphing technology when available), words, and when possible, symbolic rules
Example Garden Lessons	

Benchmark MA.8.9.2	Use linear relationships with two variables to solve problems
Example Garden Lessons	

Benchmark MA.8.9.3	Identify functions as linear or nonlinear and contrast their properties from tables, graphs (including graphing technology when available), or equations
Example Garden Lessons	

Standard 10: Patterns, Functions, and Algebra: SYMBOLIC REPRESENTATION: Use symbolic forms to represent, model, and analyze mathematical situations

Benchmark MA.8.10.1	Translate among tables, graphs (including graphing technology when available), and equations involving linear relationships
Example Garden Lessons	

Benchmark MA.8.10.2	Solve linear equations and inequalities with two variables using algebraic methods, manipulatives, or models
Example Garden Lessons	

Benchmark MA.8.10.3	Use tables and graphs to represent and compare linear relationships
Example Garden Lessons	

Benchmark MA.8.10.4	Use the slope of a line to describe a constant rate of change
Example Garden Lessons	

Standard 11: Data Analysis, Statistics, and Probability: FLUENCY WITH DATA: Pose questions and collect, organize, and represent data to answer those questions

Benchmark MA.8.11.1	Design a study that compares two samples, collect data, and select the appropriate representation (e.g., double bar graph, back-to-back stem and leaf plot, parallel box
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	and whisker plots, scatter plot) to compare the sets of data
Example Garden Lessons	

Benchmark MA.8.11.2	Judge the validity of data based on the data collection method
Example Garden Lessons	

Standard 12: Data Analysis, Statistics, and Probability: STATISTICS: Interpret data using methods of exploratory data analysis

Benchmark MA.8.12.1	Recognize situations appropriate for scatter plots
Example Garden Lessons	

Benchmark MA.8.12.2	Analyze different representations of the same data to describe how representations can be used to skew a person's interpretation of the data
Example Garden Lessons	

Standard 13: Data Analysis, Statistics, and Probability: DATA ANALYSIS: Develop and evaluate inferences, predictions, and arguments that are based on data

Benchmark MA.8.13.1	Make conjectures about possible relationships between two characteristics of a sample based on interpretations of scatter plots
Example Garden Lessons	

Standard 14: Data Analysis, Statistics, and Probability: PROBABILITY: Understand and apply basic notions of chance and probability

Benchmark MA.8.14.1	Judge the validity of conjectures that are based on experiments or simulations
Example Garden Lessons	