

**Marsh Valley School District**  
**Quick Reference Curriculum Guide – 7<sup>th</sup> Grade Mathematics**  
**June 2004**

**Algebraic Concepts**

- ❑ Evaluate expressions using the correct order of operations (P-M) 327.02.a,b,d
- ❑ Solve one-step equations (whole numbers) (P-M) 330.02.b
- ❑ Translate word expressions into algebraic expressions (I-P) 330.01.a,b
- ❑ Substitute and evaluate algebraic expressions (I-P) 330.02.a
- ❑ Extend patterns and identify a rule (function) that generates the pattern (I) 333.01.a
- ❑ Use function relationships to explain how a change in one quantity results in a change in another (I) 333.01.b

**Integers**

- ❑ Know that integers include zero, natural numbers and their additive inverses (I-M) 327.02.d
- ❑ Read and write integers (I-M) 327.02.d
- ❑ Add and subtract integers (I-P) 327.02.d
- ❑ Compare number sentences that include negative and ordering symbols (<,>=) (I-P) 330.01.c
- ❑ Multiply and divide integers (I-P) 327.02.d

**Decimals (positive decimals only)**

- ❑ Determine a remainder expressed as a decimal and a fraction (M)
- ❑ Compare and order decimal numbers (M)
- ❑ Multiply 2 decimal numbers (M)
- ❑ Divide 2 decimal numbers (M)
- ❑ Estimate sums/differences/products/quotients of decimal (M)
- ❑ Round decimals (M)
- ❑ Express terminating decimals as fractions and fractions as decimals (I-P)

**Fractions (positive fractions only)**

- ❑ Add and subtract fractions and mixed fractions (M) 327.01.a
- ❑ Order and compare fractions (M) 327.01.a
- ❑ Express a fraction in simplest form (M) 327.01.a
- ❑ Multiply and divide fractions and mixed numbers (M) 327.01.a
- ❑ Convert mixed numbers to improper fractions and vice versa (M) 327.01.a
- ❑ Use estimation with fractions and mixed numbers (M) 327.01.a

**Measurement**

- ❑ Convert units of measurement within each system (P) 329.01.e
- ❑ Measure indirectly (heights/distances) using proportions (P) 329.03.a
- ❑ Estimate/measure length, area, volume, angles, and mass in metric and standard units (P) 329.01.a,b
- ❑ Illustrate relationships between length, area, perimeter, and volume (P) 331.01.c,e
- ❑ Solve for perimeter, circumference, and area of triangles, quadrilaterals, and circles (P) 331.01.e
- ❑ Find volume and surface area of three-dimensional figures (P) 331.01.f
- ❑ Solve story problems using measurement (P) 331.01.e
- ❑ Use rates to make indirect measurements (I) 329.02.a
- ❑ Use correct units in real-world applications (P) 331.01.e

**Geometry**

- ❑ Apply the concepts/properties of congruence, similarity and symmetry (P) 331.01.d
- ❑ Construct/measure angles and shapes (P) 331.01.b
- ❑ Explore/model transformations of geometric shapes (P) 331.01.g
- ❑ Apply concepts/properties/relationships of points, lines, planes, angles, and shapes (P) 331.01.c
- ❑ Describe/classify one-, two-, and three-dimensional figures (P) 331.01.a
- ❑ Explore right triangle geometry (I) 331.02.a

**Mathematics Processes**

- ❑ Discuss mathematical ideas and make conjectures and convincing arguments (P) 328.02.b,c
- ❑ Use mathematical vocabulary, notations, symbols, definitions, models, etc. (P) 328.04.a-c
- ❑ Clarify mathematical information through reflection, verbalizing, discussion or writing (P)
- ❑ Use estimation to predict computation and to check reasonableness of an answer (P) 327.03.a-d

**Numeration/ Percents**

- ❑ Understand and use basic properties: associative, commutative, distributive, zero, and identity (I-P) 327.02.b
- ❑ Apply models to illustrate the meaning of percent (I-P) 332.01.a

### **Number Theory**

- ❑ Apply the rules of divisibility (M) 317.01.e
- ❑ Determine the greatest common factor (M) 317.01.e
- ❑ Calculate the least common multiply (M) 317.01.e
- ❑ Find prime factors of composite numbers (M) 317.01.e
- ❑ Determine equivalent forms among fractions, decimals and percents (I-P) 317.01.b
- ❑ Multiply/divide by multiples of 10 (P-M) 317.02.a
- ❑ Apply ratio and proportion to obtain solutions to problems involving unit rates (I-P) 327.01.b
- ❑ Calculate square roots of perfect squares (I-P) 327.02.c
- ❑ Explore the use/meaning of exponents (I) 327.02.c
- ❑ Set up and obtain solutions to proportion problems (I) 329.03.a

### **Numeration/ Percents**

- ❑ Understand and use basic properties: associative, commutative, distributive, zero, and identity (I-P) 327.02.b
- ❑ Apply models to illustrate the meaning of percent (I-P) 332.01.a

### **Data Interpretation**

- ❑ Construct a variety of graphs (scatter plots, line graphs, bar graphs, pie charts, and leaf plots) (P) 332.01.a & 332.05.a
- ❑ Interpret and make predictions from graphs (P) 332.01.a & 332.05.a
- ❑ Recognize when graphs and statistics are misleading (I-P) 332.01.a
- ❑ Collect/organize data using appropriate notation in tables, charts, and graphs. 332.02.a

### **Probability/Statistics**

- ❑ Calculate mean, median, mode, and range (P) 322.03.b,c
- ❑ Use basic mathematical probability vocabulary (P) 332.04.b
- ❑ Describe event probability using fractions and decimals (P) 332.05.a
- ❑ Make predictions based on simple experiments (P) 332.05.a
- ❑ Explain events using basic sample spaces (I-P) 332.01.c

### **Problem Solving**

- ❑ Plot and label a sequence of coordinate points on a graph, and connect them with a straight line (P) 328.01.a

### **Real Numbers and the Coordinate Plane**

- ❑ Plot and label a sequence of coordinate points on a graph, and connect them with a straight line (P) 331.03.a

### **Technology**

- ❑ Determine the appropriate use of a calculator (P) 327.02ea