

## Math 6/7

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The emphasis in this standards-based seventh-grade course is on algebraic thinking and on extending the understanding of the real number system to include integers, rational numbers, and irrational numbers. Students will investigate applications of number theory and will acquire skills in adding, subtracting, multiplying, and integers. Students will solve applied problems by using one-step equations and inequalities, percents, and proportional reasoning. Students will develop algebraic thinking by analyzing patterns to discover relationships, by representing information through symbolic, graphical, and tabular methods, and by identifying relationships that are linear. Throughout the course there is an emphasis on the process standards of problem solving, communication, reasoning, representations, and connections.

**MATERIALS:** In addition to the materials listed on the sixth grade list, students will need the following:

- Marble Composition book
- TI-30 Calculator (optional)
- Graph paper

**GRADING:** As per district policy:

50% Major Assessments (tests and/or projects)

50% Minor Assessment

- 20% homework
  - 30% quizzes
- Three to four major tests each quarter.
  - Five to seven quizzes each quarter.
  - Homework will be assigned three to four days each week. All homework/class work must have the required work shown.
  - All notes must be kept in your "note-taker" composition book.
  - All warm-ups, homework, handouts, and returned papers should be kept in the math section of your binder. The math section of your binder should be cleaned out after each unit test.

**CLASSROOM PROCEDURES:** On most days, our classes will follow this progression:

1. Warm-up.
2. Check Homework.
3. Introduce new objective(s).
4. Practice.
5. Review the day's objective(s).
6. Assign homework.

**ABSENTEEISM:** If a student is absent, it is the student's responsibility to check the assignment board/web site for missed work. Students should also check with a fellow classmate for missed notes, and other important announcements.

**CLASS EXPECTATIONS:** We, as teachers, have very high expectations for all our students. We believe that all students can learn, and we expect all our students to put forth their best effort each and every day. Students should come to class prepared with all materials and assignments on a daily basis. Each student should actively participate in class, and work to the best of their ability.

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<b>1<sup>st</sup> Quarter</b>		
<u>Chapter</u>	<u>Title</u>	Tentative Time Frame
<b>1</b>	<b>Introduction to Algebra and Functions</b>	<b>15</b>
<b>2</b>	<b>Integers</b>	<b>13</b>
<b>3</b>	<b>Algebra: Linear Equations and Functions</b>	<b>13</b>
<b>2<sup>nd</sup> Quarter</b>		
<u>Chapter</u>	<u>Title</u>	Tentative Time Frame
<b>4</b>	<b>Fractions, Decimals, and Percents</b>	<b>10</b>
<b>5</b>	<b>Applying Fractions</b>	<b>12</b>
<b>6</b>	<b>Proportions and Percents</b>	<b>17</b>
	<b>Benchmark Test and Review</b>	<b>2</b>
<b>3<sup>rd</sup> Quarter</b>		
<u>Chapter</u>	<u>Title</u>	Tentative Time Frame
<b>8</b>	<b>Statistics: Analyzing Data</b>	<b>12</b>
<b>9</b>	<b>Probability</b>	<b>15</b>
<b>10</b>	<b>Geometry: Polygons</b>	<b>14</b>
	<b>MAP Testing (Adjustments will be made to daily schedule)</b>	<b>2</b>
<b>4<sup>th</sup> Quarter</b>		
<u>Chapter</u>	<u>Title</u>	Tentative Time Frame
<b>11</b>	<b>Measurement Two and Three-Dimensional Figures</b>	<b>13</b>
<b>12</b>	<b>Geometry and Measurement</b>	<b>10</b>
	<b>Review PASS State Test</b>	<b>3</b>
	<b>PASS Testing</b>	<b>4</b>
	<b>Second Semester Benchmark Test and Review</b>	<b>2</b>
<b>7</b>	<b>Applying Percents</b>	<b>7</b>
	<b>Final Exam and Review</b>	<b>3</b>

Grade 6-7	
Number and Operations	<p>6-2: The student will demonstrate through the mathematical processes an understanding of the concept of whole-number percentages, integers, and ratio and rate; the addition and subtraction of fractions; accurate, efficient, and generalizable methods of multiplying and dividing fractions and decimals; and the use of exponential notation to represent whole numbers.</p> <p>6-2.1 Understand whole-number percentages through 100.</p> <p><b>7-2.1 Understand fractional percentages and percentages greater than one hundred.</b></p> <p>6-2.2 Understand integers.</p> <p><b>7-2.4 Understand the meaning of absolute value.</b></p> <p><b>7-2.10 Understand the inverse relationship between squaring and finding the square roots of perfect squares.</b></p> <p><b>7-2.2 Represent the location of rational numbers and square roots of perfect squares on a number line.</b></p> <p>6-2.3 Compare rational numbers and whole-number percentages through 100 by using the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</p> <p><b>7-2.3 Compare rational numbers, percentages, and square roots of perfect squares by using the symbols <math>\leq</math>, <math>\geq</math>, <math>&lt;</math>, <math>&gt;</math>, and <math>=</math>.</b></p> <p>6-2.4 Apply an algorithm to add and subtract fractions.</p> <p>6-2.5 Generate strategies to multiply and divide fractions and decimals.</p> <p><b>7-2.9 Apply an algorithm to multiply and divide fractions and decimals</b></p> <p>6-2.6 Understand the relationship between ratio/rate and multiplication/division.</p> <p>6-2.7 Apply strategies and procedures to determine values of powers of 10, up to <math>10^6</math>.</p> <p>6-2.8 Represent the prime factorization of numbers by using exponents.</p> <p>6-2.9 Represent whole numbers in exponential form.</p> <p><b>7-2.6 Translate between standard form and exponential form.</b></p> <p><b>7-2.7 Translate between standard form and scientific notation.</b></p>
Algebra	<p>6-3: The student will demonstrate through the mathematical processes an understanding of writing, interpreting, and using mathematical expressions, equations, and inequalities.</p> <p>6-3.1 Analyze numeric and algebraic patterns and pattern relationships.</p> <p><b>7-3.1 Analyze geometric patterns and pattern relationships.</b></p> <p>6-3.2 Apply order of operations to simplify whole-number expressions.</p> <p>6-3.3 Represent algebraic relationships with variables in expressions, simple equations, and simple inequalities.</p> <p>6-3.4 Use the commutative, associative, and distributive properties to show that two expressions are equivalent.</p> <p>6-3.5 Use inverse operations to solve one-step equations that have whole-number solutions and variables with whole-number coefficients.</p>

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<b>Geometry</b>	<p>6-4: The student will demonstrate through the mathematical processes an understanding of shape, location, and movement within a coordinate system; similarity, complementary, and supplementary angles; and the relationship between line and rotational symmetry.</p> <p>6-4.1 Represent with ordered pairs of integers the location of points in a coordinate grid.</p> <p>6-4.2 Apply strategies and procedures to find the coordinates of the missing vertex of a square, rectangle, or right triangle when given the coordinates of the polygon's other vertices.</p> <p>6-4.3 Generalize the relationship between line symmetry and rotational symmetry for two-dimensional shapes.</p> <p>6-4.4 Construct two-dimensional shapes with line or rotational symmetry.</p> <p>6-4.5 Identify the transformation(s) used to move a polygon from one location to another in the coordinate plane.</p> <p>6-4.6 Explain how transformations affect the location of the original polygon in the coordinate plane.</p> <p>6-4.7 Compare the angles, side lengths, and perimeters of similar shapes.</p> <p>6-4.8 Classify shapes as similar.</p> <p>6-4.9 Classify pairs of angles as either complementary or supplementary.</p> <p><b>7-4.1 Analyze geometric properties and the relationships among the properties of triangles, congruence, similarity, and transformations to make deductive arguments.</b></p> <p><b>7-4.6 Compare the areas of similar shapes and the areas of congruent shapes.</b></p> <p><b>7-4.7 Explain the proportional relationship among attributes of similar shapes.</b></p> <p><b>7-4.8 Apply proportional reasoning to find missing attributes of similar shapes.</b></p>
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<b>Measurement</b>	<p>6-5: The student will demonstrate through the mathematical processes an understanding of surface area; the perimeter and area of irregular shapes; the relationships among the circumference, diameter, and radius of a circle; the use of proportions to determine unit rates; and the use of scale to determine distance.</p> <p>6-5.1 Explain the relationships among the circumference, diameter, and radius of a circle.</p> <p>6-5.2 Apply strategies and formulas with an approximation of <math>\pi</math> (3.14, or <math>\frac{22}{7}</math>) to find the circumference and area of a circle.</p> <p>6-5.3 Generate strategies to determine the surface area of a rectangular prism and a cylinder.</p> <p>6-5.4 Apply strategies and procedures to estimate the perimeters and areas of irregular shapes.</p> <p>6-5.5 Apply strategies and procedures of combining and subdividing to find the perimeters and areas of irregular shapes.</p> <p>6-5.6 Use proportions to determine unit rates.</p> <p>6-5.7 Use a scale to determine distance</p> <p><b>7-5.1 Use ratio and proportion to solve problems involving scale factors and rates.</b></p>
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<p style="text-align: center;">Data Analysis and Probability</p>	<p>6-6: The student will demonstrate through the mathematical processes an understanding of the relationships within one population or sample.</p>
	<p>6-6.1 Predict the characteristics of one population based on the analysis of sample data.</p>
	<p><b>7-6.1 Predict the characteristics of two populations based on the analysis of sample data.</b></p>
	<p>6-6.2 Organize data in frequency tables, histograms, or stem-and-leaf plots as appropriate.</p>
	<p>6-6.3 Analyze which measure of central tendency (mean, median, or mode) is the most appropriate for a given purpose.</p>
	<p>6-6.4 Use theoretical probability to determine the sample space and probability for one- and two-stage events such as tree diagrams, models, lists, charts, and pictures.</p>
	<p><b>7-6.8 Use the fundamental counting principle to determine the number of possible outcomes for a multistage event.</b></p>
<p><b>7-6.7 Differentiate between experimental and theoretical probability of the same event.</b></p>	
<p>6-6.5 Apply procedures to calculate the probability of complementary events.</p>	