

Mathematics, Course 2, Illinois © 2008
Correlated to:
Illinois Burbank School District Grade 7 Curriculum for Mathematics
(Grade 7)

ILLINOIS BURBANK SCHOOL DISTRICT GRADE 7 CURRICULUM FOR MATHEMATICS	PAGE(S) WHERE TAUGHT (If submission is not a text, cite appropriate resource(s))
Grade 7 Curriculum	
Mathematics	
Unit 1	
August	
Curriculum Standards to Be Covered	
Review 6 th Grade Material using post-test/final exam from 6 th grade.	
Survey the questions incorrect.	
Re-teach material if needed.	
Materials	
Listed below are the recommended districts learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text	
Grade 7 Curriculum	
Mathematics	
Unit 2	
September	
Curriculum Standards to Be Covered	
6A Students who meet the standard can demonstrate knowledge and use of numbers and their many representations in a broad range of theoretical and practical settings. (Representations)	
6.7.01 Represent any large number using scientific notation.	SE/TE: 106-109
6.7.02 Show relationships between sets of numbers, including rational numbers, whole numbers, natural numbers, and integers.	
6B Students who meet the standard can investigate, represent, and solve problems using number facts, operations and their properties, algorithms, and relationships. (Operations and properties)	
6.7.04 Write prime factorizations using exponents.	SE/TE: 74-78
6.7.05 Describe relationships between prime factorizations and properties of squares, primes, and composites.	
6.7.06 Classify numbers according to the number of whole number factors (e.g., square numbers have an odd number of factors).	

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Materials	
Listed below are the recommended districts learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 1	
Chapter 2	
Grade 7 Curriculum	
Mathematics	
Unit 3	
October	
Curriculum Standards to Be Covered	
6B Students who meet the standard can investigate, represent, and solve problems using number facts, operations and their properties, algorithms, and relationships. (Operations and properties)	
6.7.03 Demonstrate and describe the effects of multiplying or dividing by a fraction less than or greater than one.	
6.7.04 Simplify arithmetic expressions containing exponents using the field properties and the order of operations.	SE/TE: 68-71, 72
6.7.08 Justify rules of divisibility for 2, 5, and 10.	SE/TE: 73
6.7.08 Solve multi-step number sentences and word problems with rational numbers using the four basic operations.	
6C Students who meet the standard can compute and estimate using mental mathematics, paper-and-pencil methods, calculators, and computers. (Choice of method)	
6.7.09 Select, use, and justify appropriate operations, methods, and tools to compute or estimate with integers and familiar rational numbers.*	SE/TE: 4-7, 8-11, 14-17, 18, 20-23, 38-42, 44-47, 48-51, 120-123, 126-129, 130-133, 136-139, 141-145, 630-631, 634-635
6.7.08 Analyze algorithms for computing with rational numbers and develop fluency in their use.*	SE/TE: 13, 19, 36-37, 43, 125, 135, 140

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Materials	
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Harcourt Math Advantage Text:	
Chapter 3	
Chapter 4	
Chapter 5	
Grade 7 Curriculum	
Mathematics	
Unit 4	
November	
Curriculum Standards to Be Covered	
6C Students who meet the standard can compute and estimate using mental mathematics, paper-and-pencil methods, calculators, and computers. (Choice of method)	
6.7.08 Develop, use, and explain strategies to compute exact answers mentally with integers and simple rational numbers using a variety of techniques (e.g., estimate and compensate, halve and double, compatible numbers, decomposition and recomposition using the distributive property).	SE/TE: 12, 120-123, 154-157, 634-635
6D Students who meet the standard can solve problems using comparison of quantities, ratios, proportions, and percents.	
6.7.13 Create and explain ratios and proportions that represent quantitative relationships.	SE/TE: 238-241
7C Students who meet the standard can select and use appropriate technology, instruments, and formulas to solve problems, interpret results, and communicate findings. (Progression from selection of appropriate tools and methods to application of measurements to solve problems)	
6.7.15 Solve simple problems involving rate, time, and distance.	
8A Students who meet the standard can describe numerical relationships using variables and patterns. (Representations and algebraic manipulations)	
8.7.01 Investigate, describe, and generalize a variety of patterns using variable or recursive techniques.*	SE/TE: 168, 419, 441, 442-445, 646-647
8.7.02 Represent situations using variables.	SE/TE: 169-172, 194-198, 205-208, 446-449, 452-455, 636-637
8.7.04 Recognize and generate equivalent forms of simple algebraic expressions.*	

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Materials	
Listed below are the recommended districts learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 6	
Chapter 7	
Grade 7 Curriculum	
Mathematics	
Unit 5	
December	
Curriculum Standards to Be Covered	
8A Students who meet the standard can describe numerical relationships using variables and patterns. (<i>Representations and algebraic manipulations</i>)	
8.7.01 Investigate, describe, and generalize a variety of patterns using variable or recursive techniques.*	SE/TE: 168, 419, 441, 442-445, 646-647
8.7.02 Represent situations using variables.	SE/TE: 169-172, 194-198, 205-208, 446-449, 452-455, 636-637
8.7.04 Recognize and generate equivalent forms of simple algebraic expressions.*	
8B Students who meet the standard can interpret and describe numerical relationships using tables, graphs, and symbols. (<i>Connections of representations including the rate of change</i>)	
8.7.07 Create a table of values that satisfy a power or exponential relationship and plot the points on the Cartesian plane.	SE/TE: 504-507, 648-649
8.7.09 Graph two inequalities with a single variable, including the intersection or union of these inequalities, on a number line.	
8C Students who meet the standard can solve problems using systems of numbers and their properties. (<i>Problem solving</i>)	
8.7.10 Solve arithmetic and linear equations using the properties of equality and inequality.	SE/TE: 174-177, 178, 180-184, 186-190, 194-198, 200-204, 210-213, 214-218, 636-637
8D Students who meet the standard can use algebraic concepts and procedures to represent and solve problems. (<i>Connection of 8A, 8B, 8C to solve problems</i>)	
8.7.11 Solve simple linear equations, including direct variation, with integral coefficients using algebraic or graphical representations.	SE/TE: 491-494, 648-649
8.7.12 Solve simple problems involving quadratic relationships using technology for graphing.	

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Materials	
Listed below are the recommended districts learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 8	
Chapter 9	
Grade 7 Curriculum	
Mathematics	
Unit 6	
January	
Curriculum Standards to Be Covered	
8C Students who meet the standard can solve problems using systems of numbers and their properties. (<i>Problem solving</i>)	
8.7.10 Identify and provide examples or counter examples as appropriate for the reflexive, symmetric and transitive properties of inequality.	
9A Students who meet the standard can demonstrate and apply geometric concepts involving points, lines, planes, and space. (<i>Properties of single figures coordinate geometry and constructions</i>)	
9.7.01 Examine and describe a geometric shape, such as a regular polygon or a quadrilateral with pairs of parallel or perpendicular sides, using coordinate geometry.*	
9.7.01 Draw geometric shapes with specified properties, such as side lengths or angle measures.*	
9.7.07 Examine and describe line or rotational symmetry of objects in terms of transformations.	SE/TE: 514-517, 519-522, 648-649
9.7.07 Draw transformations of figures in a plane to match specified criteria.	SE/TE: 509, 510-513
9.7.08 Identify or analyze relationships of angles formed by intersecting lines.	SE/TE: 330-334
9.7.13 Perform constructions of congruent angles or parallel lines using a compass and straightedge, paper folding, or a "mira".	SE/TE: 361-364
9.7.14 Determine the relationship among the number of edges, faces, and vertices in a three-dimensional object.	SE/TE: 410-413

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9B Students who meet the standard can identify, describe, classify and compare relationships using points, lines, planes, and solids. (<i>Connections between and among multiple geometric figures</i>)	
9.7.11 Describe, classify, and justify relationships among types of two- and three-dimensional objects using their defining properties.	SE/TE: 336-339, 340-344, 410-413
9.7.14 Solve problems using properties of polygons and circles.	SE/TE: 350-353
9.7.14 Classify and order quadrilaterals according to their properties.	SE/TE: 340-344, 642-643
9C Students who meet the standard can construct convincing arguments and proofs to solve problems. (<i>Justifications of conjectures and conclusions</i>) This standard is not assessed in isolation. Rather, its essence is assessed indirectly through problems that require this type of thinking.	
* Create and critique arguments concerning geometric ideas and relationships, such as the number of diagonals in a polygon, or the formula for the sum of the interior angles of any polygon.*	
* Make and test conjectures about the relationships between side length and angle measure in various triangles and quadrilaterals.	SE/TE: 335
* Justify the properties of angles formed by parallel lines cut by a transversal using appropriate terminology.	
Materials	
Listed below are the recommended districts learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 10	
Chapter 11 (Pages 217 and 224)	
Chapter 12	
Chapter 14	
Grade 7 Curriculum	
Mathematics	
Unit 7	
February	
Curriculum Standards to Be Covered	
6D Students who meet the standard can solve problems using comparison of quantities, ratios, proportions, and percents.	
6.7.17 Work flexibly with fractions, decimals, and percents to solve number sentences and word problems (e.g., 50% of 10 is the same as 1/2 of 10 is the same as 0.5 x 10).*	SE/TE: 95, 96-100, 274-277, 279-283, 284-287, 290-293, 298-301, 304-307, 640-641

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6.7.14 Create and explain ratios and proportions that represent quantitative relationships.	SE/TE: 238-241
6.7.15 Create and explain a variety of equivalent ratios to represent a given situation.	SE/TE: 228-231
6.7.15 Develop, use, analyze, and explain methods for solving numeric or word problems involving proportions.*	SE/TE: 232-235, 243, 244-248, 249-250, 252-255, 259-263, 294-297, 310-314, 554-556, 638-639, 640-641, 650-651
7A Students who meet the standard can measure and compare quantities using appropriate units, instruments, and methods. (Performance and conversion of measurements)	
7.7.01 Select and justify the choice of either U.S. customary or metric systems of measurement according to the situation (e.g., measure fabric in yards, measure dry chemicals in grams).	SE/TE: 158
7B Students who meet the standard can estimate measurements and determine acceptable levels of accuracy. (Estimation)	
7.7.02 Estimate angle measure, area, and volume using reasonable units and with acceptable levels of accuracy.	SE/TE: 329, 374-378, 644-645
7.7.03 Determine and describe acceptable levels of accuracy in estimation situations.	
7C Students who meet the standard can select and use appropriate technology, instruments, and formulas to solve problems, interpret results, and communicate findings. (Progression from selection of appropriate tools and methods to application of measurements to solve problems)	
7.7.01 Select and use appropriate units and tools to measure volume, surface area, and mass/weight accurately for a given situation.*	
7.7.02 Select an appropriate formula to determine the circumference and the area of circles and perimeter and area of polygons and composite figures.*	SE/TE: 394-397, 644-645
7.7.02 Select and explain an appropriate formula or strategy to find the surface area and volume of rectangular and triangular pyramids, cylinders and cones.*	SE/TE: 414-418, 421-425, 426, 644-645
7.7.05 Solve problems involving mixed units of the same attribute, including time, money, length, and area.	SE/TE: 148-151, 634-635
7.7.06 Develop and discuss strategies to find the area of combined shapes.*	SE/TE: 388-392, 398-399
9A Students who meet the standard can demonstrate and apply geometric concepts involving points, lines, planes, and space. (Properties of single figures coordinate geometry and constructions)	
9.7.03 Solve problems using properties of triangles and quadrilaterals (ex. opposite sides of a parallelogram are congruent).	

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9.7.03 Analyze the relationship between sides of right triangles using the Pythagorean Theorem.	SE/TE: 404, 405-408, 644-645
9.7.03 Solve problems that involve the use of proportions and the Pythagorean Theorem in similar right triangles with whole number side lengths.	
9C Students who meet the standard can construct convincing arguments and proofs to solve problems. (Justifications of conjectures and conclusions) This standard is not assessed in isolation. Rather, its essence is assessed indirectly through problems that require this type of thinking.	
* Justify the area formulas for triangles, parallelograms, and trapezoids based on the formula for the area of a rectangle.	SE/TE: 379, 380-383, 384-387, 388-392, 644-645
9D Students who meet the standard can use trigonometric ratios and circular functions to solve problems. This standard is not assessed on the state assessment until grade 11.	
Materials	
Listed below are the recommended districts learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 15	
Chapter 24	
Chapter 25	
Grade 7 Curriculum	
Mathematics	
Unit 8	
March	
Curriculum Standards to Be Covered	
10A Students who meet the standard can organize, describe and make predictions from existing data. (Data Analysis)	
10.7.01 Construct, read, interpret, infer, predict, draw conclusions, and evaluate data from various displays, including box and whiskers plots.*	SE/TE: 58, 354-357, 437-440, 532-536, 538-542, 544-547, 558-559, 566, 567-570, 650-651
10.7.01 Find, use, and interpret measures of center and spread, including interquartile range.*	SE/TE: 53-57, 58, 630-631
10.7.02 Construct an equivalent data representation given data in a different form.	SE/TE: 354-357, 358
10.7.02 Recognize potential bias in data collection methods or data presentation.	SE/TE: 560-564, 650-651
10B Students who meet the standard can formulate questions, design data collection methods, gather and analyze data, and communicate findings. (Data Collection)	
10.7.01 Select and use appropriate data gathering techniques.	

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10.7.02 Formulate new questions using conjectures, and plan new studies to answer them.*	
10C Students who meet the standard can determine, describe and apply the probabilities of events. (Probability, including counting techniques)	
10.7.06 Discuss odds versus probability.	SE/TE: 584, 585
10.7.06 Make and test predictions about the results of experiments and simulations using proportionality and basic understanding of probability.*	SE/TE: 586-589, 596, 652-653
10.7.07 Compute probabilities for simple compound events using methods such as organized lists and tree diagrams.*	SE/TE: 591-595, 598-602, 652-653
Materials	
Listed below are the recommended district learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 20	
Chapter 21 (Pages 412 & 422)	
Chapter 22	
Grade 7 Curriculum	
Mathematics	
Unit 9	
April	
Curriculum Standards to Be Covered	
6C Students who meet the standard can compute and estimate using mental mathematics, paper-and-pencil methods, calculators, and computers. (Choice of method)	
6.7.13 Develop, use, and explain strategies to compute exact answers mentally with integers and simple rational numbers using a variety of techniques (e.g., estimate and compensate, halve and double, compatible numbers, decomposition and recomposition using the distributive property).	SE/TE: 12, 120-123, 154-157, 634-635
7A Students who meet the standard can measure and compare quantities using appropriate units, instruments, and methods. (Performance and conversion of measurements)	
7.7.03 Make simple measurements to determine indirect measures (e.g., determining the height of a flagpole using its shadow and similar right triangles).	

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7C Students who meet the standard can select and use appropriate technology, instruments, and formulas to solve problems, interpret results, and communicate findings. (Progression from selection of appropriate tools and methods to application of measurements to solve problems)	
7.7.01 Select and use appropriate units and tools to measure volume, surface area, and mass/weight accurately for a given situation.*	
Materials	
Listed below are the recommended district learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 16	
Chapter 17	
Chapter 18 (Section 3)	
Grade 7 Curriculum	
Mathematics	
Unit 10	
May	
Curriculum Standards to Be Covered	
7C Students who meet the standard can select and use appropriate technology, instruments, and formulas to solve problems, interpret results, and communicate findings. (Progression from selection of appropriate tools and methods to application of measurements to solve problems)	
7.7.01 Explore and explain derived measurements (e.g., velocity and density).	
Materials	
Listed below are the recommended district learning materials available to all teachers in support of the curriculum unit.	
Harcourt Math Advantage Text:	
Chapter 19	
Chapter 23	
Supplement with material on velocity and density	