

BCCS
7th grade HONORS MATH Curriculum Map
 (Revised 5-2008)

Month	Content What topic(s) is being covered and what is the important vocabulary? What do students need to know		Skills What do students have to be able to do connected to the Content?	Essentials What are fundamental, enduring questions that will guide study and instruction?	Standards/ Benchmarks What benchmarks are met through this topic?	Instruction What activities are used to develop the skills and knowledge?	Resources What materials, texts, videos, internet, software, or human resources support instruction?	Assessment What evidence (products and/or performances) is collected to establish that the Content and Skills have been learned?
September	Topic: Tools of Algebra	Vocabulary: -Algebraic expression -Coordinate plane -Domain -Equation -Evaluate -Numerical expression -Open sentence -Order of operations -Ordered pair -Properties: Additive Ident Mult Identity Add Inverse Mult Inverse Comm Prop Assoc Prop Dist Prop -Range -Relation -Scatter plot -Simplify -Solution -Variable	Understand and use basic properties of real numbers: additive and multiplicative identities, additive and multiplicative inverses, and commutative, associative, & distributive property. A.PA.07.11 Create and interpret scatter plots and find line of best fit; use an estimated line of best fit to answer questions about the data. D.AN.07.02 Determine which measure of central tendency (mean, median, mode) best represents a data set. D.AN.08.01	Use the order of operations to evaluate expressions. Translate verbal phrases into numerical or algebraic expressions and equations. Evaluate expressions containing variables. Identify and use properties to evaluate expressions. Identify and solve open sentences. Use ordered pairs to locate points and represent relations. Construct and interpret scatter plots.	A.PA.07.11 D.AN.07.02 D.AN.08.01	Use a notebook all year to organize themselves & practice note taking. Use warm-ups as daily review.	Glencoe Mathematics – Pre-Algebra. Chapter 1 Sections 2 - 7. Book resource materials.	Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.

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Sept – Oct.	Topic: Integers	Vocabulary: -Absolute value -Additive inverse -Average -Coordinate -Inequality -Integer -Mean -Negative numbers -Opposites -Quadrants	Solve problems involving operations with integers. N.FL.07.07 Add, subtract, multiply, & divide positive and negative rational numbers fluently. N.FL.07.08 Understand and use basic properties of real numbers: additive and multiplicative identities, additive and multiplicative inverses, and commutative, associative, & distributive property. A.PA.07.11	Find the absolute value of an expression. Add, subtract, multiply, & divide integers. Graph points on a coordinate plane.	N.FL.07.07 N.FL.07.08 A.PA.07.11	Use a notebook all year to organize themselves & practice note taking. Use warm-ups as daily review.	Glencoe Mathematics – Pre-Algebra. Chapter 2 Sections 1 – 6. Book resource materials.	Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.

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Oct – Nov	Topic: Equations	Vocabulary: <ul style="list-style-type: none"> -Area -Coefficient -Constant -Distributive property -Equivalent equations -Equivalent expressions -Formula -Inverse operations -Like terms -Perimeter -Properties of Equality -Simplest form -Simplifying an expression -Term -Two-step equation 	<p>Understand and use basic properties of real numbers: additive and multiplicative identities, additive and multiplicative inverses, and commutative, associative, & distributive property. A.PA.07.11</p> <p>Add, subtract, and multiply simple algebraic expressions of the first degree and justify properties of real numbers (combining like terms). A.FO.07.12</p> <p>Solve two-step equations – with and without combining like terms first; checking solutions. A.FO.07.13</p>	<p>Use the Distributive Property to simplify expressions.</p> <p>Solve equations using the Properties of Equality</p> <p>Write and solve two-step equations.</p> <p>Use formulas to solve real-world & geometry problems.</p>	A.PA.07.11 A.FO.07.12 A.FO.07.13	<p>Use a notebook all year to organize themselves & practice note taking.</p> <p>Use warm-ups as daily review.</p>	<p>Glencoe Mathematics – Pre-Algebra. Chapter 3 Sections 1 – 7.</p> <p>Book resource materials.</p>	<p>Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.</p>

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Nov – Dec	Topic: Factors & Fractions	Vocabulary: -Algebraic fraction -Base -Composite number -Divisible -Expanded form -Exponent -Factor -Greatest common factor (GCF) -Monomial -Power -Prime factorization -Prime number -Simplest form -Standard form	Understand meanings for zero and negative integer exponents. N.ME.08.02 Solve proportion problems using such methods as unit rate, scaling, finding equivalent fractions, and solving the proportion equation $a/b=c/d$; know how to see patterns about proportional situations in tables. N.FL.07.05 Add, subtract, and multiply simple algebraic expressions of the first degree and justify properties of real numbers. A.FO.07.12	Identify, factor, multiply, and divide monomials. Evaluate expressions containing exponents. Factor algebraic expressions by finding the GCF. Simplify algebraic fraction using the GCF.	N.ME.08.02 N.FL.07.05 A.FO.07.12	Use a notebook all year to organize themselves & practice note taking. Use warm-ups as daily review.	Glencoe Mathematics – Pre-Algebra. Chapter 4 Sections 1 – 6. Prime factorization chart. Book resource materials.	Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.

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Dec – Jan	Topic: Rational Numbers	Vocabulary: -Bar notation -Least common denominator (LCD) -Least common multiple (LCM) -Mean -Median -Mode -Multiple -Multiplicative inverse -Rational number -Reciprocal -Repeating decimal	Understand that in decimal form, rational numbers either terminate or eventually repeat, and that calculators truncate or round repeating decimals; locate rational numbers on the number line; know fraction forms of common repeating decimals. N.ME.08.03 Calculate rates of change including speed. N.FL.07.03 Determine which measure of central tendency (mean, median, mode) best represents the data; justify the choice made. D.AN.08.01	Add, subtract, multiply, and divide rational numbers. Use LCD to solve equations. Use mean, median, and mode to analyze data.	N.ME.08.03 N.FL.07.03 D.AN.08.01	Use a notebook all year to organize themselves & practice note taking. Use warm-ups as daily review.	Glencoe Mathematics – Pre-Algebra. Chapter 5 Sections 1 – 8. Book resource materials.	Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.

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Jan – Feb	Topic: Ratio, Proportion, & Percent	Vocabulary: -Cross products -Dimensional analysis -Discount -Indirect measurement -Percent -Percent equation -Percent of change -Percent proportion -Proportion -Ratio -Scale -Scale drawing -Scale factor -Similar triangles -Unit rate	Understand derived quantities such as density, velocity, and weighted averages. N.ME.07.01 Calculate rates of change including speed. N.FL.07.03 Convert ratio quantities between different systems of units. N.MR.07.04 Solve proportion problems using such methods as unit rate, scaling, finding equivalent fractions, and solving the proportion equation $a/b=c/d$; know how to see patterns about proportional situations in tables. N.FL.07.05 Solve proportion problems using such methods as unit rate, scaling, finding equivalent fractions, and solving the proportion equation $a/b=c/d$; know how to see patterns about proportional situations in tables. A.PA.07.06 Understand that in similar polygons, corresponding angles are congruent and the ratios of corresponding sides are equal; understand the concepts of similar figures and scale factor. G.TR.07.03 Solve problems about similar figures and scale drawings. G.TR.07.04 Show that two triangles are similar using the criteria: AAA, SAS, & SSS. G.TR.07.05 Understand and use the fact that when two triangles are similar with scale factor of r , their area are related by a factor of r^2 . G.TR.07.06 Understand percent increase and percent decrease in both sum and product form. N.MR.08.07 Solve problems involving percent increases and decrease. N.MR.08.08 Solve problems involving compounded interest or multiple discounts. N.MR.08.09 Solve problems involving ratio units such as miles per hour, dollars per pound, etc. N.MR.08.11	Write ratios as fractions and find unit rates. Use dimensional analysis to convert different units of measure or scaling. Use ratios and proportions to solve problems, including scale drawings. Solve problems involving indirect measurement using similar triangle. Estimate and compute with percents.	N.ME.07.01 N.FL.07.03 N.MR.07.04 N.FL.07.05 A.PA.07.06 G.TR.07.03 G.TR.07.04 G.TR.07.05 G.TR.07.06 N.MR.08.07 N.MR.08.08 N.MR.08.09 N.MR.08.11	Use a notebook all year to organize themselves & practice note taking. Use warm-ups as daily review.	Glencoe Mathematics – Pre-Algebra. Chapter 6 Sections 1 – 8 and Chapter 9 Section 7. Book resource materials.	Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.

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Feb – Mar	Topic: Equations and Inequalities	Vocabulary: -Identity -Inequality -Null (empty set)	Solve two-step equations – with and without combining like terms first; checking solutions. A.FO.07.13 Understand and use basic properties of real numbers: additive and multiplicative identities, additive and multiplicative inverses, and commutative, associative, & distributive properties. A.PA.07.11 Solve linear inequalities in one and two variables, and graph the solution sets. A.FO.08.12	Solve equations with variables on each side and with grouping symbols. Write and graph inequalities. Solve inequalities using the Properties of Inequalities. Solve multi-step inequalities.	A.FO.07.13 A.PA.07.11 A.FO.08.12	Use a notebook all year to organize themselves & practice note taking. Use warm-ups as daily review.	Glencoe Mathematics – Pre-Algebra. Chapter 7 Sections 1 – 6. Book resource materials	Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.

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Mar – April	Topic: Functions and Graphing	Vocabulary: -Best-fit line -Boundary variation -Constant of variation -Direct variation -Function -Half plane -Linear equation -Rate of change -Slope -Slope-intercept form -Substitution -System of equations -Vertical line test -x-intercept -y-intercept	<ul style="list-style-type: none"> ▪ Recognize when information given in a table, graph, or formula suggests a directly proportional or linear relationship. A.PA.07.01 ▪ Identify and represent linear functions, quadratic functions, and other simple functions inverse functions, cubes, roots, and exponentials using tables, graphs, and equations. A.RP.08.01 ▪ Use the vertical line test to determine if a graph represents a function in one variable. A.RP.08.04 ▪ Represent directly proportional & linear relationships using verbal descriptions, tables, graphs, & formulas, and translate among these representations. A.RP.07.02 ▪ Given a directly proportional or linear situation, graph and interpret the slope and intercept(s) in terms of the original situation; evaluate $y=kx$ for specific x value, given k. A.PA.07.03 ▪ Represent linear functions in the form $y=x+b$, $y=mx$, $y=mx+b$, and graph, interpreting slope and y-intercept. A.PA.07.07 ▪ Recognize and use directly proportional relationships of the form $y=ms$, and distinguish from linear relationships of the form $y=mx+b$, b non-zero; understand that in a directly proportional relationship between two quantities on quantity is a constant multiple of the other quantity. A.PA.07.05 ▪ Calculate the slope from the graph of a linear function as the ratio of "rise/run" for a pair of points on the graph, and express the answer as a fraction and decimal; understand that linear functions have slope that is a constant rate of change. A.PA.07.06 ▪ Calculate rates of change including speed. N.FL.07.03 ▪ For directly proportional or linear situations, solve applied problems using graphs and equations. A.PA.07.04 ▪ Create and interpret scatter plots and find line of best fit and use an estimated line of best fit to answer questions about the data. D.AN.07.02 ▪ Solve simultaneous linear equations in two variables by graphing, substitution, and linear combination; estimate solutions using graphs; include examples with no solutions and infinitely many solutions. A.FO.08.11 ▪ Solve linear inequalities in one and two variables, and graph the solution sets. A.FO.08.12 ▪ Set up and solve applied problems involving simultaneous linear equations and linear inequalities. A.FO.08.13 	<p>Use functions to describe relationships between two quantities.</p> <p>Graph and write linear equations using ordered pairs, the x- and y-intercepts, and slope & y-intercept.</p> <p>Find slopes of lines and use slope to describe rates of change.</p> <p>Draw and use best-fit lines to make predictions about data.</p> <p>Solve systems of linear equations and linear inequalities.</p>	A.PA.07.01 A.RP.08.01 A.RP.08.04 A.RP.07.02 A.PA.07.03 A.PA.07.07 A.PA.07.05 A.PA.07.06 N.FL.07.03 A.PA.07.04 D.AN.07.02 A.FO.08.11 A.FO.08.12 A.FO.08.13	<p>Use a notebook all year to organize themselves & practice notetaking.</p> <p>Use warm-ups as daily review.</p>	<p>Glencoe Mathematics – Pre-Algebra. Chapter 8 Sections 1 – 10.</p> <p>Book resource materials</p>	<p>Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.</p>

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Apr – May	<p>Topic:</p> <p>Data Displays, Probability, & Geometry</p> <p>NOTE: Most of this is 8th grade material and will not be on the 8th grade MEAP in the fall. This will also be covered in Geometry in the high school. Add or make deletions as time allows.</p>	<p>Vocabulary:</p> <ul style="list-style-type: none"> -Altitude -Back-to-back stem-and-leaf plot -Base -Box-and-whisker plot -Center -Circle -Circumference -Compound events -Cone -Cylinder -Diameter -Dependant events -Histogram -Independent events -Interquartile range -Lateral area -Lateral face -Leaves -Lower quartile -Measures of variation -Mutually exclusive events -Odds -Perfect square 	<ul style="list-style-type: none"> ▪ Represent and interpret data using circle graphs, stem and leaf plots, histograms, and box-and-whisker plots, and select appropriate representation to address specific questions. D.RE.07.01 ▪ Calculate and interpret relative frequencies and cumulative frequencies for given data sets. D.AN.07.03 ▪ Find and interpret the median, quartiles, and interquartile range of a given set of data. D.AN.07.04 ▪ Determine which measure of central tendency best represents a data set. D.AN.08.01 ▪ Recognize practices of collecting and displaying data that may bias the presentation or analysis. D.AN.08.02 ▪ Compute relative frequency from a table of experimental results for a repeated event, and be able to answer questions about the result, using relationship of probability to relative frequency. D.PR.08.03 ▪ Apply the Basic Counting Principle to find total number of outcomes possible for independent and dependent events, and calculate the probabilities using organized lists or tree diagrams. D.PR.08.04 ▪ Understand the relationship of probability to relative frequency D.PR.08.05 ▪ Understand the difference between independent and dependent events, and recognize common misconceptions involving probability. D.PR.08.06 ▪ Compute relative frequencies from a table of experimental results for a repeated event; understand the relationship of experimental 	<p>Display and interpret data in stem-and-leaf plots, box-and-whisker plots, and histograms.</p> <p>Find measures of variation.</p> <p>Recognize misleading statistics.</p> <p>Find probabilities and odds.</p> <p>Find and use squares and square roots.</p> <p>Use the Pythagorean Theorem.</p> <p>Find the area of polygons and irregular figures, and find the area and circumference of circles.</p> <p>Find volumes of prisms, cylinders, pyramids, and cones.</p> <p>Find surface areas of prisms, cylinders, pyramids, and cones.</p>	<p>D.RE.07.01</p> <p>D.AN.07.03</p> <p>D.AN.07.04</p> <p>D.AN.08.01</p> <p>D.AN.08.02</p> <p>D.PR.08.03</p> <p>D.PR.08.04</p> <p>D.PR.08.05</p> <p>D.PR.08.06</p> <p>D.AN.08.07</p> <p>N.MR.07.06</p> <p>N.ME.08.01</p> <p>N.FL.08.05</p> <p>N.FL.08.06</p> <p>G.GS.08.01</p> <p>G.SR.08.03</p> <p>G.SR.08.04</p> <p>G.SR.08.05</p>	<p>Use a notebook all year to organize themselves & practice note taking.</p> <p>Use warm-ups as daily review.</p>	<p>Glencoe Mathematics – Pre-Algebra. Chapter 12 Sections 1 – 5, 8 – 9 . Chapter 9 Sections 1 & 5. Chapter 10 Sections 5, 7, & 8. Chapter 11 Sections 2 – 5.</p> <p>Book resource materials.</p>	<p>Weekly quizzes, chapter quizzes, and tests including: multiple choice, true or false, computation, and constructed response questions.</p>

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	<ul style="list-style-type: none"> -Pi -Radical sign -Radius -Range -Quartiles -Slant height -Square root -Stem-and-leaf plot -Stems -Surface area -Upper quartile -Volume 	<p>probability to relative frequency; answer questions regarding the results. D.AN.08.07</p> <ul style="list-style-type: none"> ▪ Understand the concept of square root and cube root, and estimate using calculators. N.MR.07.06 (Also covering: N.ME.08.01, N.FL.08.05, N.FL.08.06) ▪ Understand at least one proof of the Pythagorean Theorem; use the Pythagorean Theorem and its converse to solve applied problems. G.GS.08.01 ▪ Understand the definition of a circle; know and use the formulas for circumference and area of a circle to solve problems. G.SR.08.03 ▪ Find area and perimeter of complex figures by sub-dividing them into basic shapes. G.SR.08.04 ▪ Solve applied problems involving areas of triangles, quadrilaterals, and circles. G.SR.08.05 ▪ Know the volume formulas of generalized cylinders, cones, pyramids, and spheres. G.SR.08.06 ▪ Understand the concept of surface area, and find the surface area of prisms, cones, spheres, pyramids, and cylinders. G.SR.08.07 		<p>G.SR.08.06</p> <p>G.SR.08.07</p>			