

Huntsville City Schools

Pacing Guide 2017 - 2018

Course Math Grade 7

| Standards for Mathematical Practice | Online Resources |
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| <p>The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report <i>Adding It Up</i>: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).</p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning | <p>Dan Meyer’s Ted Talk about teaching math: https://youtu.be/qocAoN4jNwc</p> <p>Links to his 3-act math activities, sorted by standard: http://blog.mrmeyer.com/category/3acts https://docs.google.com/spreadsheet/ccc?key=0AjlqyKM9d7ZYdEhtR3BJMmdBWnM2YWxWYVM1UWowTEE#gid=0</p> <p>Granite City Math Vocabulary: http://www.graniteschools.org/mathvocabulary/</p> |
| <p>For more:</p> | <p>Other online resources</p> |
| <p>Elaboration on each practice from the Common Core website: www.corestandards.org/Math/Practice/</p> | <p>www.opencurriculum.org is a website that curates activities from all over the web, sorted by standard.</p> |
| <p>Kid-friendly language: www.buncombe.k12.nc.us/Page/37507</p> | <p>http://map.mathshell.org/lessons.php (MARS) has great formative assessments and group activities, also searchable by standard.</p> |

Huntsville City Schools

Pacing Guide 2017 - 2018

Course Math Grade 7

First Nine Weeks

Extra days have been built into each 9-weeks for LTF, AMSTI, Re-teaching, & Remediation

Holiday: Sept. 4 Half student day: Sept. 22 (Aug. 2 – Sept. 29)

| | 7 th Grade Digits Topic 1 | | 7 th Grade Digits Topic 2 | | 7 th Grade Digits Topic 3 | | 7 th Grade Digits Topic 4 | |
|-------------------|---|------------------|---|---|--|--|---|----------------------------------|
| Vocabulary | Terms of ratio Ratio Equivalent ratios Least Common Multiple Unit price | | Constant of proportionality Dependent variable Equivalent ratios Independent variable Proportion Proportional relationship Scale Scale drawing | | Commission Tax Principal Markup Simple interest Markdown Percent of increase | | Absolute value Additive inverse Integers Rational numbers Whole numbers | |
| Standards | AL CCRS: | Standard: | AL CCRS: | Standard: | AL CCRS: | Standard: | AL CCRS: | Standard: |
| | #1 | 7.RP.1 (1.1-1.5) | #2 #11 | 7.RP.2(2.1-2.4, 2.6) 7.G.1 (2.5-2.6) | #2 #3 | 7.RP.2 (3.1-3.3, 3.5) 7.RP.3 (3.2-3.3, 3.5 – 3.7) | #4 #9 | 7.NS.1 (4.1-4.7) 7.EE.3 (4.7) |

| Standard | Resources | Approximate Pacing Number of Days |
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| <p>ALCOS # 1 (7-RP1) Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.</p> | <p>Digits: 1-1 to 1-4; 1-5 (optional)</p> <p>AMSTI: Bits and Pieces 1 Inv. 3-4 Comparing and Scaling Inv. 3 Stretching and Shrinking Inv. 1-5</p> <p>MARS: Representing Road Race Sharing Costs Equitably: Traveling to School</p> <p>IXL: 7.G.14, 7.J.1, 7.J.5, 7.M.3, 7.M.4</p> <p>LTF: Limits-A Physical Approach</p> <p>Dan Meyer 3-Act Math Acts: Graduation</p> <p>Illustrative Mathematics: Cooking with the whole cup</p> <p>SMALLab: Fraction Action Fraction Lab Constant Velocity Constant Acceleration Lifting Gears Game Gear Ratio Game</p> | <p>8</p> |
| <p>ALCOS # 2 (7-RP2, 7-RP2a, 7-RP2b, 7-RP2c, 7-RP2d) Recognize and represent proportional relationships between quantities. (a) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. (b) Identify the constant of</p> | <p>Digits: 2-1 to 2-4; 2-6 (optional)</p> <p>If possible, teach Digits 2-2 and 2-3 together.</p> <p>MARS:</p> | <p>8</p> |

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| <p>proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. (c) Represent proportional relationships by equations. (d) Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.</p> | <p>Comparing Strategies for Proportional Problems Classifying Proportion and Non-proportion situations</p> <p>LTF: Road Trip The Shortest Route</p> <p>Robert Kaplinsky: How big is the vehicle that uses those tires?</p> <p>Mathalicious: Do taller Olympic sprinters have an unfair advantage?</p> <p>IXL: 7.J.2, 7.J.4, 7.J.8, 7.J.9, 7.K.1, 7.K.2, 7.K.3, 7.K.4, 7.K.5, 7.K.6</p> | |
| <p>ALCOS # 11 (7-G1) Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p> | <p>Digits: 2-5</p> <p>AMSTI: Stretching and Shrinking Inv. 1-4 Comparing and Scaling Inv. 1-4 Filling and Wrapping Inv. 5 How Likely is it? Inv. 1-4 What Do You Expect? Inv. 1-4</p> <p>MARS: Drawing to Scale: A Garden</p> <p>IXL: 7.J.7</p> <p>Illustrative Mathematics: Map distance</p> <p>SMALLab: Fraction Action Fraction Lab</p> | <p>2</p> |
| <p>ALCOS # 3 (7-RP3) Use proportional relationships to solve multistep ratio and percent problems.</p> | <p>Digits: 3-1 to 3-6; 3-7 (optional) **SKIP 3-4, not in COS**</p> | <p>10</p> |

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| | <p>AMSTI: Bits and Pieces III Inv. 4-5 Variables and Patterns Inv. 4 Comparing and Scaling Inv. 1-4 Stretching and Shrinking Inv. 4-5 Growing, Growing, Growing Inv. 4</p> <p>IXL: 7.J.12, 7.L.4, 7.L.5, 7.L.6, 7.L.8, 7.L.9, 7.L.10, 7.M.4, 7.M.5, 7.M.6, 7.M.7, 7.M.8, 7.M.9, 7.M.10, 7.M.11</p> <p>LTF: Road Trip Minimizing Debt</p> <p>Dan Meyer 3-Act Math Acts: Dueling Discounts</p> | |
| <p>ALCOS # 2 (7-RP2b, 7-7-RP2c, 7-RP2c, 7-RP2d) Recognize and represent proportional relationships between quantities. (b) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. (c) Represent proportional relationships by equations. (d) Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.</p> | <p>Digits: 3-1 & 3-2</p> <p>Since equations haven't been covered yet, suggest including the percent proportion into these two lessons.</p> <p>MARS: Increasing and Decreasing Quantities by Percent</p> <p>IXL: 7.K.1, 7.K.4, 7.J.11, 7.K.2, 7.K.5, 7.K.8</p> | <p>Included in the Days above</p> |
| <p>ALCOS 9 (7-EE3) Solve multistep real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form, convert between forms as appropriate, and assess the reasonableness of answers using mental computation and estimation strategies. Examples: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> | <p>Ongoing Standard</p> <p>MARS: Solving Linear Equations Modeling: Hot and Cold Increasing and Decreasing Quantities by Percent</p> <p>SMALLab: Fraction Action Fraction Lab</p> | |

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| | IXL: 7.L.2, 7.L.3, 7.F.2, 7.F.3, 7.F.6, 7.F.7, 7.F.8 , 7.F.9 | |
| ALCOS # 6 (7-NS3) Solve real world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.) | Ongoing Standard SMALLab: Fraction Action Fraction Lab | |
| ALCOS 4 (7-NS1, 7-NS1a, 7-NS1b, 7-NS1d) Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. (a) Describe situations in which opposite quantities combine to make 0. (b) Understand $p + q$ as the number located a distance $ q $ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. (c) Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. (d) Apply properties of operations as strategies to add and subtract rational numbers. | Digits 4-1 to 4-6; 4-7 (optional) AMSTI: Accentuate the Negative Inv. 2, 3 Bits and Pieces II Inv. 1-2 Bits and Pieces III Inv. 1 Accentuate the Negative Inv. 2, 4 IXL: 7.B.4, 7.B.2, 7.B.6, 7.C.1, 7.C.3, 7.C.4, 7.C.5, 7.D.3, 7.H.3, 7.H.6, 7.H.7, 7.E.1, 7.G.1, 7.G.3 Illustrative Mathematics: Operations on a number line MARS: Using Positive and Negative Numbers in Context | 13 |

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Course Math Grade 7

Second Nine Weeks

Extra days have been built into each 9-weeks for LTF, AMSTI, Re-teaching, & Remediation

Fall break Oct 2-6; Half day: Oct 25; Holidays: Nov. 10 & Nov. 20-24 (Oct. 9 – Sept. 29)

| | 7 th Grade Digits Topic 5 | | 7 th Grade Digits Topic 6 | | 7 th Grade Digits Topic 7 | | 7 th Grade Digits Topic 8 | | 7 th Grade Digits Topic 9 | |
|-------------------|---|------------------|---|----------------------|---|------------------|---|------------------|--|------------------|
| Vocabulary | Denominator Equivalent expressions Integers Numerator Rational numbers Reciprocals Quotient Complex fraction | | Decimal Terminating decimal Repeating decimal Percent Fractions | | Coefficient Constant Factors Term Like terms Distributive property | | Bar diagram Equation Equivalent equations Isolate a variable Properties of equality Rational numbers Solution | | Equivalent inequalities Inequality Solution set Solution set of an inequality | |
| Standards | AL CCRS: | Standard: | AL CCRS: | Standard: | AL CCRS: | Standard: | AL CCRS: | Standard: | AL CCRS: | Standard: |
| | #5 | 7.NS.2(5.1-5.5) | #5 | 7.NS.2 (6.1-6.2,6.5) | #7 | 7.EE.1 (7.1-7.5) | #9 | 7.EE.3 (8.3,8.4) | #10 | 7.EE.4 (9.1-9.5) |
| | #6 | 7.NS.3(5.6) | #6 | 7.NS.3 (6.3-6.5,6.7) | #8 | 7.EE.2 (7.1-7.5) | #10 | 7.EE.4 (8.1-8.4) | | |
| | | | #3 | 7.RP.3 (6.6) | | | | | | |

| Standard | Resources | | Approximate Pacing Number of Days |
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| <p>ALCOS # 5 (7-NS2), (7-NS2a), (7-NS2b), (7-NS2c), (7-NS2d) Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. (a) Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. (b) Understand that integers can be divided, if the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. (c) Apply properties of operations as strategies to multiply and divide rational numbers. (d) Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> | <p>Digits: 5-1 to 5-5; 5-6 (optional)</p> <p>Digits 5-5 covers the Order of Operations.</p> <p>AMSTI: Accentuate the Negative Inv. 1-4 Bits and Pieces II Inv. 3 Bits and Pieces III Inv. 2 Comparing and Scaling Inv. 3 Variables and Patterns Inv. 2-4 Looking for Pythagoras Inv. 3-4</p> <p>MARS: Interpreting Multiplication and Division</p> <p>SMALLab: Fraction Action Fraction Lab</p> <p>IXL: 7.C.6, 7.C.7.7.C.8, 7.H.8, 7.H.9, 7.R.10, 7.A.3, 7.A.4, 7.E.6, 7.F.1, 7.G.14, 7.E.3, 7.E.5, 7.G.7, 7.G.9, 7.G.10, 7.G.13, 7.R.9</p> | 7 | |
| <p>ALCOS # 6 (7-NS3) Solve real world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)</p> | <p>Ongoing Standard</p> <p>SMALLab: Fraction Action Fraction Lab</p> | | |

| THE NUMBER SYSTEMS: DECIMALS AND PERCENTS | | | |
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| <p>ALCOS # 5 (7-NS2b), (7-NS2d) Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> | <p>Digits: 6-1 to 6-6; 6-7 (optional)</p> <p>AMSTI: Accentuate the Negative Inv. 2-4 Comparing and Scaling Inv. 3</p> <p>MARS: Translating between Fractions, Decimals, and Percents</p> <p>LTF: Interesting Limit Limits: A Physical Approach</p> <p>IXL: 7.A.3, 8.A.4, 8.C.6, 7.C.7, 7.C.8, 7.E.6, 7.F.1, 7.G.14, 7.H.8, 7.A.10, 7.H.1</p> | | 9 |
| <p>ALCOS # 6 (7-NS3) Solve real world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)</p> | <p>Ongoing Standard</p> | | |
| EXPRESSIONS AND EQUATIONS: EQUIVALENT EXPRESSIONS | | | |
| <p>ALCOS # 7 (7-EE1) Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> | <p>Digits 7-1 to 7-4; 7-5 (optional)</p> <p>AMSTI: Thinking with Mathematical Models Inv. 2-3 Growing, Growing, Growing Inv. 1 Frogs, Fleas, and Painted Cubes Inv. 2 Say it With Symbols Inv. 1-4 Shapes of Algebra Inv. 2-5</p> <p>MARS:</p> | | 9 |

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| | Solving Linear Equations IXL: 7.R.9, 7.R.10, 7.R.12, 7.R.13, 7.R.14, 7.R.15, 7.R.16 | | |
| ALCOS # 8 (7-EE2) Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. | Ongoing Standard MARS: Interpreting Equations | | |
| EXPRESSIONS AND EQUATIONS: EQUATIONS | | | |
| ALCOS # 10 (7-EE4, 7-EE4a) Use variables to represent quantities in a real world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (a) Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. | Digits: 8-1 to 8-4; 8-5 (optional) AMSTI: Variables and Patterns Inv. 1-3 Moving Straight Ahead Inv. 1-4 Thinking with Mathematical Models Inv. 1-3 Looking for Pythagoras Inv. 3-4 Growing, Growing, Growing, Inv. 1-4 Frogs, Fleas, and Painted Cubes Inv. 1-4 The Shapes of Algebra Inv. 2-5 Say it with Symbols Inv. 1-5 IXL: 7.J.11, 7.R.11, 7.S.3, 7.S.6, 7.S.7, 7.S.8, 7.S.9, 7.U.4 | | 10 |
| EXPRESSIONS AND EQUATIONS: INEQUALITIES | | | |
| ALCOS # 10 (7-EE4, 7-EE4b) Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (b) Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. | Digits: 9-1 to 9-5 **9-4 & 9-5 are OPTIONAL** AMSTI: Variables and Patterns Inv. 1-3 Moving Straight Ahead Inv. 1-4 Looking for Pythagoras Inv. 3-4 Growing, Growing, Growing, Inv. 1-4 Frogs, Fleas, and Painted Cubes Inv. 1-4 The Shapes of Algebra Inv. 2-5 Say it with Symbols Inv. 1-5 | | 8 |

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| | MARS: Evaluating Statements about Number Operations | | |
| | IXL: 7.T.1, 7.T.2, 7.T.3, 7.T.4, 7.T.5, 7.T.6, 7.T.7 | | |

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Pacing Guide 2017 - 2018

Course Math Grade 7

Third Nine Weeks

Extra days have been built into each 9-weeks for LTF, AMSTI, Re-teaching, & Remediation

Holiday: Jan. 15; Half student days: Feb. 7 & Mar.2 ; Possible snow days: Feb. 16 & Feb 19 (Jan. 3 – Mar. 2)

| | 7 th Grade Digits Topic 10 | | 7 th Grade Digits Topic 11 | | 7 th Grade Digits Topic 12 | | 7 th Grade Digits Topic 13 | |
|-------------------|---|-------------------|---|-------------------|---|-------------------------|---|------------------|
| Vocabulary | Acute angle Adjacent angles Angle Complementary angles Supplementary angles Obtuse angle Straight angle Vertex of an angle | | Area Circle Circumference Pi Radius | | Cross section Diagonal Included angle Included side Net Quadrilateral Rectangular prism | | Surface area Volume Lateral area Cube Prism | |
| Standards | AL CCRS: | Standard: | AL CCRS: | Standard | AL CCRS: | Standard | AL CCRS: | Standard: |
| | #12 | 7.G.2 (10.1–10.5) | #12 | 7.G.2 (11.2-11.3) | #12 | 7.G.2 (12.1-12.3, 12.6) | #16 | 7.G.6(13.1-13.5) |
| | #15 | 7.G.5 (10.2-10.6) | #14 | 7.G.4 (11.2-11.5) | #13 | 7.G.3 (12-4-12.6) | | |
| | #10 | 7.EE.4 (10.1) | #10 | 7.EE.4 (11.1) | #16 | 7.G.6 (12.6) | | |

| Standard | Resources | Approximate Pacing Number of Days |
|---|---|-----------------------------------|
| GEOMETRY: ANGLES | | |
| <p>ALCOS # 15 (7-G5) Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p> | <p>Digits: 10-1 – 10-5; 10-6 (optional)</p> <p>AMSTI: Variables and Patterns Inv. 1-3 Moving Straight Ahead Inv. 1-4 Say It with Symbols Inv. 1-5 Thinking with Mathematical Models Inv. 1-3 Shapes and Designs Inv. 4 Filling and Wrapping Inv. 1-4 Stretching and Shrinking Inv. 3</p> <p>IXL: 7.W.12, 7.W.13</p> <p>LTF: Angles of a Regular Polygon</p> | 8 |
| <p>ALCOS # 12 (7-G2) Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> | <p>IXL: 7.W.3, G.M.5</p> <p>MARS: Describing and Defining Triangles</p> <p>Additional hands on practice measuring with a protractor</p> <p>Suggest classifying triangles, quadrilaterals and if triangles can be created with given side lengths (Triangle Inequality Theorem)</p> <p>Open Middle: Triangle Inequality</p> | 2 |
| <p>ALCOS # 10 (7-EE4a) Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an</p> | Ongoing Standard | |

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| <p>arithmetic solution, identifying the sequence of the operations used in each approach.</p> | | |
| <p>GEOMETRY: CIRCLES</p> | | |
| <p>ALCOS # 14 (7-G4) Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p> | <p>Digits: 11-1 – 11-4 **11-5 OPTIONAL**</p> <p>AMSTI: Covering and Surrounding Inv. 5 Filling and Wrapping Inv. 2-5</p> <p>MARS: Finding Areas of Circles</p> <p>Open Middle: Circle Radius</p> <p>IXL: 7.W.16, 7.AA.5, 7.AA.6</p> <p>LTF: Discovering Area Finding Pi Introduction to Related Rates Using Area Polygons in a Circle</p> <p>Dan Meyer 3-Act Math Acts: Brita Coffee Traveler Coin Carpet Penny Circle Pizza Doubler Popcorn Picker</p> | <p>9</p> |
| <p>ALCOS # 10 (7-EE4a) Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p> | <p>Ongoing Standard</p> | |
| <p>GEOMETRY: TWO AND THREE DIMENSIONAL SHAPES</p> | | |

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| <p>ALCOS # 12 (7-G2) Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> | <p>Digits: 12-2 & 12-3</p> <p>IXL: G.F.2</p> <p>MARS: Applying Angle Theorems</p> <p>Suggest classifying triangles by sides and angles.</p> <p>Triangle Sum Theorem</p> <p>AMSTI: Shapes and Designs Inv. 4 Filling and Wrapping Inv. 1-4</p> <p>LTF: Fill it Up- Part I Shoeprint, Trapezoids and Area Approximating Areas of Irregular Shapes Using Trapezoids Maximizing Area Triangle Area Activity</p> | <p>3</p> |
| <p>ALCOS # 13 (7-G3) Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.</p> | <p>Scootpad</p> <p>Online Video: http://www.pbslearningmedia.org/resource/muen-math-g-slicing-3d-figures/slicing-three-dimensional-figures/</p> <p>Khan Academy</p> <p>IXL: 7.Z.1, 7.Z.3</p> <p>Dan Meyer 3-Act Math Acts: Holes</p> | <p>2</p> |
| <p>ALCOS # 16 (7-G6) Solve real world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p> | <p>Digits Student Companion Book Formula Reference Sheet</p> | <p>5-6</p> |

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| | <p>IXL: 7.Z.2, 7.AA.2, 7.AA.3, 7.AA.4, 7.AA.7, 7.AA.8, 7.AA.12, 7.AA.13</p> <p>Engage NY: Nets and Surface Area</p> <p>AMSTI: Shapes and Designs Inv. 4 Filling and Wrapping Inv. 1-4</p> <p>MARS: Describing and Defining Quadrilaterals</p> <p>LTF: Fill it Up- Part I Shoeprint, Trapezoids and Area Approximating Areas of Irregular Shapes Using Trapezoids Maximizing Area Triangle Area Activity</p> <p>Dan Meyer 3-Act Math Acts: Ticket Roll</p> | |
| GEOMETRY: SURFACE AREA AND VOLUME | | |
| <p>ALCOS # 16 (7-G6)</p> <p>Solve real world and mathematical problems involving area, volume and surface area of two-and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p> | <p>Digits 13-1 & 13-2 **Hexagonal Prisms Optional**</p> <p>AMSTI: Covering and Surrounding Inv. 1-4 Filling and Wrapping Inv. 1-5 Stretching and Shrinking Inv. 2-3</p> <p>MARS: Maximizing Area: Gold Rush Designing a 3D Product in 2D: A Sports Bag</p> <p>Engage NY:</p> | <p>8</p> |

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| | <p>Nets and Surface Area</p> <p>IXL: 7.Z.2, 7.AA.2, 7.AA.3, 7.AA.4, 7.AA.7, 7.AA.8, 7.AA.12, 7.AA.13</p> <p>LTF:</p> <p>Solids of Revolution</p> <p>Surface Area and Volume</p> <p>Unit Dog</p> <p>Hole in the Bucket</p> <p>Box it Up</p> <p>We All Scream for Ice Cream</p> <p>Introduction to Related Rates using Volume</p> | |
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Huntsville City Schools

Pacing Guide 2017 - 2018

Course Math Grade 7

Fourth Nine Weeks

Extra days have been built into each 9-weeks for LTF, AMSTI, Re-teaching, & Remediation

Possible snow day: Mar. 16; Spring break: Mar. 26 – 30 (March 5 – May 24)

| | 7 th Grade Digits Topic 14 | | 7 th Grade Digits Topic 15 | | 7 th Grade Digits Topic 16 | | 7 th Grade Digits Topic 17 | |
|-------------------|---|------------------------|---|--------------------|--|------------------------|--|-------------------|
| Vocabulary | Convenience sample Inference Population Representative sample Sampling method | | Inference Interquartile range Mean absolute deviation Range Median Mean Comparative inference | | Action Experimental probability Theoretical probability Outcome Probability model Probability of an event Sample space Simulation | | Action Event Probability of an event Sample space Simulation Compound event | |
| Standards | AL CCRS: | Standard: | AL CCRS: | Standard: | AL CCRS: | Standard: | AL CCRS: | Standard: |
| | #17 | 7.SP.1(14.1-14.7) | #17 | 7.SP.1 (15.1-15.2) | #21 | 7.SP.5(16.1) | #23 | 7.SP.7 (17.7) |
| | #18 | 7.SP.2(14.2,14.5,14.7) | #19 | 7.SP.3(15.2,15.5) | #22 | 7.SP.6(16.2,16.3) | #24 | 7.SP.8(17.1-17.7) |
| | | | #20 | 7.SP.4(15.1-15.6) | #23 | 7.SP.7(16.2,16.4-16.6) | | |

| Standard | Resources | Approximate Pacing Number of Days |
|---|--|-----------------------------------|
| STATISTICS AND PROBABILITY: SAMPLING | | |
| <p>ALCOS # 17 (7-SP1) Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p> | <p>Digits: 14-1, 14-3, 14-4, 14-5, 14-6</p> <p>IXL: 7.CC.6</p> <p>AMSTI: Samples and Populations Inv. 2-3</p> | 7 |
| <p>ALCOS # 18 (7-SP2) Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.</p> | <p>Digits: 14-2 & 14-7 Optional</p> <p>IXL: 7.J.12</p> <p>LTF: Getting to Know You What Percentage of the Earth is Water Free French Fries Passing Game</p> <p>MARS: Sampling and Estimating: Counting Trees</p> <p>Dan Meyer 3-Act Math Acts: Yellow Starbursts</p> | 3 |
| STATISTICS AND PROBABILITY: COMPARING TWO POPULATIONS | | |
| <p>ALCOS # 20 (7-SP4) Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.</p> | <p>Digits: 15-1 to 15-4 & 15-6 optional</p> <p>AMSTI: Samples and Populations Inv. 2 Data Distributions Inv. 2-4</p> <p>MARS:</p> | 9 |

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| | Representing Variability with Mean, Median, Mode and Range Comparing Data Using Statistical Measures IXL: 7.CC.1, 7.CC.2, 7.CC.3, 7.CC.4 LTF: Getting to Know You Measures of Central Tendency | |
| ALCOS # 19 (7-SP3) Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. | Digits: 15-2 & 15-5 | 4 |
| STATISTICS AND PROBABILITY: PROBABILITY CONCEPTS | | |
| ALCOS # 21 (7-SP5) Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. | Digits: 16-1 MARS: Designing: A Game of Chance IXL: 7.DD.1 | 2 |
| ALCOS # 22 (7-SP6) Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. | Digits: 16-3 IXL: 7.DD.3, 7.DD.4 Illustrative Mathematics: Rolling dice | 2 |
| ALCOS # 23 (7-SP7, 7-SP7a, 7-SP7b) Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. (a) Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities. (b) Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. | Digits: 16-2, 16-4, 16-5, 16-6 optional AMSTI: How Likely Is It? Inv. 1-4 What Do You Expect? Inv. 1-4 MARS: Estimating Statements about Probability IXL: 7.DD.1, 7.DD.3 | 9 |

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|---|---|------------------|
| | <p>LTF: Bulls Eye Family Fun Movie Probability</p> | |
| <p>STATISTICS AND PROBABILITY: COMPOUND EVENTS</p> | | |
| <p>ALCOS # 24 (7-SP8, 7-SP8a, 7-SP8b, 7-SP8c) Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. (a) Understand that just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. (b) Represent sample spaces for compound events using methods such as organized lists, tables, and tree diagrams. For an event described in everyday language (e.g. rolling double sixes), identify the outcomes in the sample space which compose the event. (c) Design and use a simulation to generate frequencies for compound events.</p> | <p>Digits: 17-1 to 17-6</p> <p>AMSTI: What Do You Expect Inv. 1-4</p> <p>MARS: Analyzing Games of Chance</p> <p>LTF: Bulls Eye Family Fun Movie Probability</p> <p>IXL: 7.DD.2, 7.DD.6, 7.DD.7, 7.DD.5, 7.DD.8, 7.DD.9, 7.DD.10, 7.DD.11</p> | <p>11</p> |
| <p>ALCOS # 23 (7-SP7, 7-SP7a, 7-SP7b) Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. (a) Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities. (b) Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.</p> | <p>Digits: 17-7</p> <p>IXL: 7.DD.1, 7.DD.3</p> | <p>3</p> |

Listed below are the technology standards for grades six through eight. You are to make every effort to incorporate the applicable standards into your daily classroom lessons. These standards should be noted in your lesson plans.

Alabama Technology Standards Sixth – Eighth Grade

Technology Operations and Concepts

Students will:

1. Appraise technology systems to determine software and hardware compatibility.
2. Publish digital products that communicate curriculum concepts.
Examples: Web pages, videos, podcasts, multimedia presentations
3. Explain how network systems are connected and used.
Examples: file sharing, collaborating, wireless networking
4. Determine basic troubleshooting strategies to correct common hardware and software problems.
Examples: checking connections, restarting equipment, creating a backup copy of digital data
Describing the importance of antivirus and security software
5. Use basic features of word processing, spreadsheets, databases, and presentation software.
Examples: word processing—reports, letters, brochures
spreadsheets—discovering patterns, tracking spending, creating budgets
databases—contact list of addresses and telephone numbers
presentation software—slideshow
6. Select specific digital tools for completing curriculum-related tasks.
Examples: spreadsheet for budgets, word processing software for essays, probes for data collection
7. Demonstrate correct keyboarding techniques.

Digital Citizenship

8. Identify safe uses of social networking and electronic communication.
Recognizing dangers of online predators
Protecting personal information online
9. Practice responsible and legal use of technology systems and digital content.
Examples: avoiding plagiarism; complying with acceptable-use policies, copyright laws, and fair use standards; recognizing secure Web sites
Identifying examples of computer crime and related penalties
Examples: computer crime—phishing, spoofing, virus and worm dissemination, cyberbullying penalties—fines, incarceration
Citing sources of digital content
10. Describe advances in technology and effects of each on the workplace and society.
Examples: agriculture, manufacturing, medicine, warfare, transportation, communication, education

Research and Information Fluency

11. Use digital tools and strategies to locate, collect, organize, evaluate, and synthesize information.
Examples: locating—Boolean searches, graphic organizers, spreadsheets, databases collecting—probeware, graphing calculators organizing—graphic organizers, spreadsheets evaluating—reviewing publication dates, determining credibility synthesizing—word processing software, concept-mapping software

Communication and Collaboration

12. Use digital tools to communicate and collaborate at all levels from interpersonal to global.
Examples: instant messages, e-mail, blogs, wikis, collaborative authoring tools, online learning communities
Demonstrating digital file transfer
Examples: attaching, uploading, downloading

Critical Thinking, Problem Solving, and Decision Making

13. Use digital tools to formulate solutions to authentic problems.
Examples: electronic graphing tools, probes, spreadsheets

Creativity and Innovation

14. Use digital tools to generate new ideas, products, or processes.
Examples: ideas—predictions, trends products—animation, video processes—models, simulations

Curriculum Overview

| Semester 1 | Standards | Days |
|---|------------------------|------|
| Unit A: Ratio and Proportional Relationships | | |
| Topic 1 | 7.RP.1 | 8 |
| Topic 2 | 7.RP.2, 7.G.1 | 10 |
| Topic 3 | 7.RP.2, 7.RP.3 | 10 |
| Unit B: Rational Numbers | | |
| Topic 4 | 7.NS.1, 7.EE.3 | 13 |
| Topic 5 | 7.NS.2, 7.NS.3 | 7 |
| Topic 6 | 7.NS.2, 7.NS.3, 7.RP.3 | 9 |
| Unit C: Expressions and Equations | | |
| Topic 7 | 7.EE.1, 7.EE.2 | 9 |
| Topic 8 | 7.EE.3, 7.EE.4 | 10 |
| Topic 9 | 7.EE.4 | 8 |
| Semester 2 | | |
| Unit D: Geometry | | |
| Topic 10 | 7.G.2, 7.G.5, 7.EE.4 | 10 |
| Topic 11 | 7.G.2, 7.G.4, 7.EE.4 | 9 |
| Topic 12 | 7.G.2, 7.G.3, 7.G.6 | 11 |
| Topic 13 | 7.G.6 | 8 |
| Unit E: Statistics | | |
| Topic 14 | 7.SP.1, 7.SP.2 | 10 |
| Topic 15 | 7.SP.1, 7.SP.3, 7.SP.4 | 13 |
| Unit F: Probability | | |
| Topic 16 | 7.SP.5, 7.SP.6, 7.SP.7 | 12 |
| Topic 17 | 7.SP.7, 7.SP.8 | 13 |