Huntsville City Schools
Pacing Guide 2016 - 2017
Course Honors Math Grade 7

Standards for Mathematical Practice	Online Resources
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 *Adding It Up*: 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). 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	Dan Meyer's Ted Talk about teaching math: https://youtu.be/qocAoN4jNwc Links to his 3-act math activities, sorted by standard: http://blog.mrmeyer.com/category/3acts https://docs.google.com/spreadsheet/ccc?key=0AjIqyKM9d7ZYdEhtR3BJMmdBWnM2YWxWYVM1UWowTEE#gid=0 Granite City Math Vocabulary: http://www.graniteschools.org/mathvocabulary/
For more:	**Other online resources**
Elaboration on each practice from the Common Core website: www.corestandards.org/Math/Practice/	www.opencurriculum.org is a website that curates activities from all over the web, sorted by standard.
Kid-friendly language: www.buncombe.k12.nc.us/Page/37507	http://map.mathshell.org/lessons.php has great formative assessments and group activities, also searchable by standard.

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First Nine Weeks

	Accelerated Digits Topic 4 8th Grade Digits Topic 1		Accelerated Digits Topic 5 8th Grade Digits Topic 3		Accelerated Digits Topic 6 8th Grade Digits Topic 4		Accelerated Digits Topic 12 8th Grade Digits Topic 2	
Vocabulary	Irrational numbers Perfect square Real numbers Repeating decimal Square root Terminating decimal		Cube root Negative Exponent Property Perfect Cube Zero Exponent Property		Base Exponent Power Scientific notation Standard form		Commutative Property Distributive Property Infinitely many solutions No solutions	
Power Standards	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:
	#1 (8-NS1)	8.NS.1	#3 (8-EE1) #4 (8-EE2)	8.EE.3 8.EE.4	#6 (8-EE4)	8.EE.6	#9 (8-EE7)	8.EE.9

Standard	Resources	Approximate Pacing Number of Days
UNIT I - RATIONAL NUMBERS AND EXPONENTS: RATIONAL AND IRRATIONAL NUMBERS		
ALCOS #1 (8-NS1): Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	**Accelerated Digits: 4-1 & 4-2** **8th Grade Digits: 1-1 & 1-2** **IXL: Grade 8 D.1, D.6** **SMALLab:** **Gear Ratio Game** **Fraction Lab** **Fraction Action**	**2**

	AMSTI: Looking for Pythagoras	
ALCOS #2 (8-NS2):Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions.	Accelerated Digits: 4-3 to 4-5 8th Grade Digits: 1-3 & 1-4 (1-5 Optional) IXL: Grade 8 F.16, F.21 AMSTI: Looking for Pythagoras	**5-6**
UNIT I - RATIONAL NUMBERS AND EXPONENTS: INTEGER EXPONENTS		
ALCOS 3 (8-EE1) Know and apply the properties of integer exponents to generate equivalent numerical expressions.	Accelerated Digits: 5-1 & 5-2 8th Grade Digits: 3-1 & 3-2 IXL: Grade 8 F.1, F.2, F.3, F.4, F.5, F.6, F.7, F.8, F.9, F.10, F.11, F.12, F.13, Z.6, Z.7, Z.8, Z.9 SMALLab: Gear Ratio Game Constant Velocity AMSTI: Growing, Growing, GrowingInv. 5 Looking for Pythagoras inv. 2-4 LTF: Module 9 – Positive and Negative Exponents	**4**
ALCOS 4 (8-EE2) Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of perfect squares and cube roots of small perfect cubes. Know that the square root of 2 is irrational.	Accelerated Digits: 5-3 to 5-6 8th Grade Digits: 3-3 to 3-6 (3-7 Optional) IXL: Grade 8 D.1, F.14, F.15, F.17, F.19, F.20, S.7 AMSTI: Growing, Growing, GrowingInv. 5 Looking for Pythagoras inv. 2-4 LTF: Module 9 – Positive and Negative Exponents	**5-6**

UNIT I - RATIONAL NUMBERS AND EXPONENTS: SCIENTIFIC NOTATION		
ALCOS 5 (8-EE3) Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	Accelerated Digits: 6-1 to 6-3 8th Grade Digits: 4-1 to 4-3 IXL: Grade 8 G.1, G.2 AMSTI: Growing, Growing, GrowingInv 1-2, 4-5 LTF: Model 9 – Negative Exponents	**2-3**
ALCOS 6 (8-EE4) Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notations are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.	Accelerated Digits: 6-4 to 6-5 8th Grade Digits: 4-4 to 4-5 IXL: Grade 8 G.1, G.3, G.4 AMSTI: Growing, Growing, GrowingInv 1-2, 4-5 LTF: Model 9 – Negative Exponents	**4**
UNIT II - PROPORTIONALITY AND LINEAR RELATIONSHIPS: EQUATIONS		
ALCOS 9 (8-EE7, 8-EE7a, 8-EE7b): Solve linear equations in one variable. (a) Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equations into simpler forms until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers). (b) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions, using the distributive property and collecting like terms.	Accelerated Digits: 12-1 to 12-4 8th Grade Digits: 2-1 to 2-4(2-5 Optional) IXL: Grade 8 U.12, U.3, U.4, U.5, U.6, U.7, U.8, U.9, U.10, U.11 AMSTI: Variables and PatternsInv 3-4 Moving Straight AheadInv 1-4 Thinking with Mathematical Models Inv 1-3 Say It With Symbols Inv 1-5 The Shapes of Algebra Inv 3 - 4 LTF: Module 2 – Working with Formulas Dan Meyer's Three-Act Math Tasks: **Ditch Diggers**	**10-11**

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Second Nine Weeks

	Accelerated Digits Topic 14 8th Grade Digits Topic 5		Accelerated Digits Topic 19 7th Grade Digits Topic 10		Accelerated Digits Topic 21 7th Grade Digits Topic 12		Accelerated Digits Topic 25 8th Grade Digits Topic 11		Not Available in Digits Area Review	
Vocabulary	Linear equation Slope Y-intercept Rate Unit rate Constant of proportionality		Acute angle Adjacent angles Complementary angles Obtuse angle Right angle Straight angle Supplementary angle Vertical angles		Parallelogram Quadrilateral Triangle Plane Three dimensional figure Pyramid Prism Cross section		Alternate interior angles Corresponding angles Deductive reasoning Exterior angle of a triangle Remote interior angles Transversal		Triangle Rectangle Parallelogram Trapezoid Square	
Power Standards	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:
	#7 (8-EE5) #8 (8-EE6)	8.EE.7 8.EE.8	#12 (7-G2)	7.G.12	#20 (8-G5)	8.G.20	#20 (8-G5)	8.G.20	#16 (7-G6)	7.G.16

Standard	Resources	Approximate Pacing Number of Days
UNIT II - PROPORTIONALITY AND LINEAR RELATIONSHIPS: Graphing Linear Equations		
ALCOS 7 (8-EE5) Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships in different ways.	**Accelerated Digits: 14-1 to 14-6** **8th Grade Digits: 5-1 to 5-6(5-7 Optional)** **IXL: Grade 8 H.5 H.6, H.7, H.8, H.9, I.3, I.4, I.5, I.8, W.1, W.2, W.4, W.5, W.7, X.9**	**8**

ALCOS 8 (8-EE6) Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b	**SMALLab:** **Lifting Gears Game** **Gear Ratio Game** **Constant Velocity** **Constant Acceleration** **AMSTI:** **Moving Straight Ahead Inv 4** **Thinking with Mathematical Models Inv 2** **LTF:** **Module 9 – Goodyear Walks Using the Rule of Four** **Module 3 – Average Rate of Change** **Introduction to Related Rates Using Area/Right Triangles** **Module 7 - Ant and the Sugar** **Walk the Line**	
UNIT IV –GEOMETRIC CONCEPTS		
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.	**Accelerated Digits: 19-1 – 19-6** **7th Grade Digits: 10-1 – 10-6** **IXL: Grade 7 X.4, X.5** **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** **LTF:** **Angles of a Regular Polygon**	**4**
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.	**Accelerated Digits: 21-2 & 21-3** **7th Grade Digits: 12-2 & 12-3** **IXL: Grade 7**	**3**

	IXL : **Supplement with lessons on classifying triangles and quadrilaterals** **Triangle Inequality Theorem** AMSTI: Shapes and Designs Inv. 4 Filling and Wrapping Inv. 1-4 LTF: Fill it Up- Part I Shoeprint, Trapezoids and Area Approximating Areas of Irregular Shapes Using Trapezoids Maximizing Area Triangle Area Activity		
ALCOS 20 (8-G5) Understand informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.	Accelerated Digits: 25-1 to 25-5 8th Grade Digits: 11-1 to 11-5 IXL: Grade 8 N.1, N.2, N.3, N.6, N.7, N.9, N.14 AMSTI: Shapes and DesignsInv 3 LTF: Module 8 – Angles of a Regular Polygon	8	
UNIT IV - CREATING, COMPARING, AND ANALYZING GEOMETRIC FIGURES: TWO AND THREE DIMENSIONAL SHAPES			
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.	Khan Academy IXL: Grade 7 X.25, X.26 **Suggest Identify 3-D figures** **Vocabulary: vertices, edges, faces, base** Youtube videos: PBS shows slice master engageNY Unit: https://www.engageny.org/resource/grade-7-mathematics	2	

	Dan Meyer's Three-Act Math Tasks: **Holes**	
GEOMETRIC APPLICATIONS		
ALCOS # 16 (7-G6) Solve real world and mathematical problems involving ==area==**, volume and surface area of** ==two==**-and three-** ==dimensiona==**l objects composed of** ==triangles==**,** ==quadrilaterals==**, polygons, cubes, and right prisms.**	**Digits Student Companion Book Formula Reference Sheet** **IXL: Grade 7 X.18, X.19, X.20** **AMSTI:** **Shapes and Designs Inv. 4** **Filling and Wrapping Inv. 1-4** **LTF:** **Fill it Up- Part I** **Shoeprint, Trapezoids and Area** **Approximating Areas of Irregular Shapes Using Trapezoids** **Maximizing Area** **Triangle Area Activity** **Dan Meyer's Three-Act Math Tasks:** **Coffee Traveler** **Popcorn Picker** **Ticket to Ride** **Holes**	**6**

	8th Grade Digits Topic 12		Accelerated Digits Topic 22 7th Grade Digits Topic 13		Accelerated Digits Topic 26 8th Grade Digits Topic 13		Accelerated Digits Topic 23 8th Grade Digits Topic 9		Accelerated Digits Topic 24 8th Grade Digits Topic 10	
Vocabulary	Pythagorean Theorem Hypotenuse Leg of a right triangle		Base area Height of a prism Height of a pyramid Lateral area Lateral face Prism Pyramid Surface area Volume		Cone Cylinder Lateral area Sphere Surface area Volume		Congruent figures Image Reflection Rigid motion Rotation Transformation Translation		Dilation Scale factor Similar figures	
Power Standards	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:	AL CCRS:	SchoolNet:
	#22 (8-G7)	8.G.22	#16 (7-G6)	7.G.16			#17 (8-G2)	8.G.17	#19 (8-G4)	8.G.19

Standard	Resources	Approximate Pacing Number of Days
GEOMETRY: PYTHAGOREAN THEOREM		
ALCOS #22 (8-G7) Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real world and mathematical problems in two and three dimensions.	8th Grade Digits: 12-2 & 12-3 IXL: Grade 8 O.1, O.2, O.3, O.4, O.5, P.4	**5**

	AMSTI: Looking for Pythagoras Inv 2-4 LTF: Module 9 – Minimizing Travel Time Module 2 – Pythagorean Theorem Investigation Dan Meyer's Three-Act Math Tasks: Taco Cart	
UNIT IV - CREATING, COMPARING, AND ANALYZING GEOMETRIC FIGURES: <mark>SURFACE AREA AND VOLUME</mark>		
ALCOS # 16 (7-G6) **Solve real world and mathematical problems involving area, <mark>volume and surface area</mark> of two-and <mark>three-dimensional</mark> objects composed of triangles, quadrilaterals, polygons, <mark>cubes, and right prisms.</mark>**	Digits Student Companion Book Formula Reference Sheet **Accelerated Digits: 22-1 & 22-2** **7th Grade Digits 13-1 & 13-2** ****Hexagonal Prisms Optional**** **Recommended to teach Pyramids (Not on Benchmark)** **Accelerated Digits: 22-2 & 22-4** **7th Grade Digits: 13-3 & 13-4** **IXL: Grade 7 X.27, X.28, X.29** **AMSTI:** **Covering and Surrounding Inv. 1-4** **Filling and Wrapping Inv. 1-5** **Stretching and Shrinking Inv. 2-3** **LTF:** **Solids of Revolution** **Surface Area and Volume** **Unit Dog** **Hole in the Bucket** **Box it Up** **We All Scream for Ice Cream** **Introduction to Related Rates using Volume** **Dan Meyer's Three-Act Math Tasks:** **Coffee Traveler** **Popcorn Picker**	**5**

	Ticket to Ride Holes	
ALCOS 24 (8-G9) Know the formulas for the volumes of cones, cylinders, and spheres, and use them to solve real world and mathematical problems.	Digits Student Companion Book Formula Reference Sheet Accelerated Digits: 26-2, 26-4, 26-6 8th Grade Digits: 13-2, 13-4, 13-6 Recommended to teach Surface Area (Not on Benchmark) Accelerated Digits: 26-1, 26-3, 26-5 8th Grade Digits: 13-1, 13-3, 13-5 IXL: Grade 8 N.31, N.32 AMSTI: Filling and WrappingInv 3-5 LTF: Module 2 – An "Apeeling" Problem Solids of Revolution Unit Dog	**5**
UNIT IV - CREATING, COMPARING, AND ANALYZING GEOMETRIC FIGURES: CONGRUENCE		
ALCOS 16 (8-G1, 8-G1a, 8-G1b, 8-G1c) Verify experimentally the properties of rotations, reflections, and translations: (a) Lines are taken to lines, and line segments are taken to line segments of the same length. (b) Angles are taken to angles of the same measure. (c) Parallel lines are taken to parallel lines.	Accelerated Digits: 23-1 to 23-3 8th Grade Digits: 9-1 to 9-3 IXL: Grade 8 Q.1, Q.2, Q.4, Q.6 AMSTI: Kaleidoscopes, Hubcaps, and Mirrors Inv 1-5 LTF: Module 1 – Pictures and Transformations Transformations and Tessellations Water Park	**5**
ALCOS 17 (8-G2) Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	Accelerated Digits: 23-4 & 23-5 8th Grade Digits: 9-4 & 9-5 IXL: Grade 8 N.10, N.12, N.13 AMSTI:	**5**

	Kaleidoscopes, Hubcaps, and Mirrors Inv 1-5 LTF: Module 1 – Pictures and Transformations Transformations and Tessellations Water Park	
UNIT IV - CREATING, COMPARING, AND ANALYZING GEOMETRIC FIGURES: SIMILARITY		
ALCOS 18 (8-G3) Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	**Accelerated Digits: 24-1 & 24-2** **8th Grade Digits: 10-1 & 10-2** **IXL: Grade 8 Q.3, Q.5, Q.7, Q.8, Q.9** **AMSTI:** **Stretching and Shrinking Inv 2**	**5**
ALCOS 19 (8-G4) Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	**Accelerated Digits: 24-3 & 24-4** **8th Grade Digits: 10-3 & 10-4** **IXL: Grade 8 N.10, N.11** **AMSTI:** **Stretching and Shrinking Inv 2**	**5**

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Fourth Nine Weeks

	Accelerated Digits Topic 15 7th Grade Digits Topic 14		Accelerated Digits Topic 16 7th Grade Digits Topic 15		Accelerated Digits Topic 18 7th Grade Digits Topic 17	
Vocabulary	Bias Convenience sample Inference Population Representative sample Simple random sampling Systematic sampling		Comparative inference Interquartile range Mean Median Quartile Range		Action Compound event Counting principle Dependent event Event Experimental probability Independent event Outcome Sample space Theoretical probability	
Power Standards	AL CCRS: #17 (7-SP1) #18 (7-SP2)	SchoolNet: 7.SP.17 7.SP.18	AL CCRS: #20 (7-SP4)	SchoolNet: 7.SP.20	AL CCRS: #24 (7-SP8) #23 (7-SP7)	SchoolNet: 7.SP.24 7.SP.23

Standard	Resources	Approximate Pacing Number of Days
UNIT III - STATISTICS AND PROBABILITY: SAMPLING		
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	Accelerated Digits: 15-1, 15-3, 15-4, 15-5, 15-6 7th Grade Digits: 14-1, 14-3, 14-4, 14-5, 14-6	6

valid only if the sample is representative of that population. **Understand that random sampling tends to produce representative samples and support valid inferences.**	**IXL: Grade 7 BB.5** **AMSTI:** **Samples and Populations Inv. 2-3**	
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.	**Accelerated Digits: 15-2 & 15-7** **7th Grade Digits: 14-2 & 14-7** **IXL: Grade 7 J.10** **Schoolnet Questions** **LTF:** **Getting to Know You** **What Percentage of the Earth is Water** **Free French Fries** **Passing Game** **Dan Meyer's Three-Act Math Tasks:** **Yellow Starbursts**	**2**
UNIT III - STATISTICS AND PROBABILITY: COMPARING TWO POPULATIONS		
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.	**Schoolnet Questions** These skills will not be tested on Benchmark. They are a prerequisite for complete mastery of the standard. **IXL : Grade 7 AA.2, AA.3, AA.4, AA.5, AA.6, AA.7, AA.8, AA.9, AA.10, AA.15, AA.16, AA.17 (AA.1, AA.11, AA.12, AA.13, AA.14 optional)**	**5**
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.	**Accelerated Digits: 16-1 to 16-4** **7th Grade Digits: 15-1 to 15-4** **IXL : BB.1, BB.2, BB.3, BB.4** **AMSTI:** **Samples and Populations Inv. 2** **Data Distributions Inv. 2-4** **LTF:**	**6**

	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.	Accelerated Digits: 16-5 & 16-6 7th Grade Digits: 15-5 & 15-6	2

UNIT III - STATISTICS AND PROBABILITY: COMPOUND EVENTS

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.	Accelerated Digits: 18-1 to 18-6 7th Grade Digits: 17-1 to 17-6 IXL : Grade 7 CC.2, CC.5, CC.6, CC.7, CC.8, CC.9, CC.10, CC.11 AMSTI: What Do You Expect Inv. 1-4 LTF: Bulls Eye Family Fun Movie Probability	8
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.	Accelerated Digits: 18-7 7th Grade Digits: 17-7 IXL Grade 7 CC.1, CC.3,	3

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