

Chapter 13. Curriculum for Grade 6

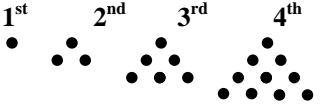
Part A. Correlation of Objectives with Recommended Textbooks

Number Strand – Grade 6

Alabama Course of Study	TEAM-Math	PH	CMP	SAT-10	AHSGE
<p>1. Demonstrate computational fluency with addition, subtraction, multiplication, and division of decimals and fractions.</p> <p>a. Comparing rational numbers written as fractions, decimals, mixed numbers, and percents</p> <p>b. Converting fractions and mixed numbers to decimals and percents</p> <p>c. Converting terminating decimals and percents to fractions and mixed numbers</p> <p>d. Writing decimal numbers in expanded notation</p> <p>Example: $52.37 = 50 + 2 + \frac{3}{10} + \frac{7}{100}$</p> <p>e. Using prime factorizations</p> <p>f. Identifying prime and composite numbers</p> <p>g. Using greatest common factor (GCF) to simplify fractions</p> <p>h. Formulating algorithms using basic operations on fractions and decimals</p> <p>Example: determining a systematic set of steps that can be used to divide fractions</p> <p>i. Applying the distributive property to compute with fractions and decimals</p> <p>Example: $4 \times (8 \frac{1}{2}) =$ $(4 \times 8) + (4 \times \frac{1}{2}) = 32 + 2 = 34$</p> <p>j. Using least common multiple (LCM) to add and subtract fractions with unlike denominators</p> <p>2. Solve problems involving decimals, percents, fractions, and proportions.</p> <p>Example: determining the sale price of a pair of jeans that regularly sells for \$25 to be \$22.50 if they are on sale at 10 percent off the regular price</p> <p>a. Estimating with fractions and decimals.</p>	<p>N1. Use operations involving place value, fractions, decimals, common percents, rational numbers, and determine reasonableness of an answer:</p> <p>a. Exponents</p> <p>b. Distributive</p> <p>c. Real number line (including integers)</p> <p>d. Integers (add)</p> <p>e. Order of operations (+, -, x, /)</p> <p>f. Compare and order</p> <p>N2. Introduce prime factorization</p> <p>N3. Use divisibility rules or prime factorization to determine if a number is prime or composite</p> <p>N4. Convert terminating decimals to fractions and percents</p> <p>N5. Solve problems involving decimals, fractions, percents, and proportions</p>	<p>1:2-5,7-10</p> <p>2:8-9</p> <p>3:1-8</p> <p>4:1-5</p> <p>5:1-4</p> <p>6:6-8</p> <p>10:1-2,4-5</p>	<p><i>Bits and Pieces I</i> Inv. 1-6</p> <p><i>Prime Time</i> Inv. 1-6</p> <p><i>Bits and Pieces II</i> Inv. 1-6</p>	<p>Identify the place value of a digit in a whole or decimal number.</p> <p>Round whole or decimal numbers to a specified place value.</p> <p>Compare and order rational numbers.</p> <p>Identify alternative representations of rational numbers.</p> <p>Addition, subtraction, multiplication and division of whole numbers, fractions, and decimals using symbolic notation and in context.</p> <p>Solve problems using estimation strategies.</p> <p>Identify the effect of an operation.</p> <p>Solve problems using appropriate strategies.</p> <p>Solve problems using numerical reasoning.</p> <p>Solve problems using nonroutine strategies.</p> <p>Identify least common multiple or greatest common factor for a set of numbers.</p> <p>Identify and use order of operation rules.</p> <p>Evaluate expressions.</p> <p>Identify and use field properties of addition and subtraction.</p>	<p>I-1</p> <p>I-2</p> <p>I-3</p> <p>I-4</p> <p>VII-2</p>

Alabama Course of Study	TEAM-Math	PH	CMP	SAT-10	AHSGE
	N6. Extend strategies for solving proportions to using cross products N7. Select appropriate strategies for solving proportions	6:1-5		Solve problems using ratio and proportion.	

ALGEBRA STRAND – Grade 6

Alabama Course of Study	TEAM-Math	PH	CMP	SAT-10	AHSGE												
<p>3. Solve problems using numeric and geometric patterns. Examples: (a) predicting the cost of using a cell phone for 60 minutes when given a bar graph (b) continuing a pattern for the 5th and 6th numbers when given the first four numbers in the pattern</p> <p>1st 2nd 3rd 4th</p>  <p>A-3A Determining a verbal rule for a function given the input and output Example:</p> <table border="1" data-bbox="100 690 529 841"> <tr> <td>Number of Hours Worked</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Number of Dollars Earned</td> <td>5</td> <td>10</td> <td>15</td> <td>20</td> <td>25</td> </tr> </table>	Number of Hours Worked	1	2	3	4	5	Number of Dollars Earned	5	10	15	20	25	<p>A1. Determine a verbal rule for a function when given the input and output</p> <p>A2. Solve problems using geometric and numeric patterns</p>	<p>2:1,4 10:6,8,9</p>		<p>Solve problems involving patterns. Read and interpret tables and graphs. Translate between visual representations, sentences, and symbolic notation. Identify the rule given a function table.</p>	<p>III-1 III-2</p>
Number of Hours Worked	1	2	3	4	5												
Number of Dollars Earned	5	10	15	20	25												
	<p>A3. Solve one-step equations</p>	<p>2:5-7 12:1</p>		<p>Solve simple algebraic equations. Identify steps to solve equations.</p>	<p>II-1 II-2 II-3 II-4 VII-8</p>												

GEOMETRY STRAND – Grade 6

Alabama Course of Study	TEAM-Math	PH	CMP	SAT-10	AHSGE
4. Identify two-dimensional and three-dimensional figures based on attributes, properties, and component parts. <ul style="list-style-type: none"> a. Classifying quadrilaterals based on their attributes c. Classifying triangles as right, obtuse, or acute b. Comparing parallel and perpendicular lines 	G1. Based on attributes, properties, and component parts (sides, angles, parallel and perpendicular lines) identify and classify: <ul style="list-style-type: none"> a. Quadrilaterals and triangles b. Circles c. Prisms and pyramids d. Cylinders and cones 	8:4-5 9:7	<i>Shapes and Designs</i> Inv. 1-6	Solve problems involving spatial reasoning.	VII-4
5. Plot coordinates on grids, graphs, and maps. <ul style="list-style-type: none"> a. Identifying the coordinates of a point on the Cartesian plane b. Identifying line and rotational symmetries of polygons 	G2. Identify transformations on coordinate plane G3. Identify line and rotational symmetries of polygons	8:8-9	<i>Ruins of Montarek</i> Inv. 1-6	Identify geometric transformations.	

MEASUREMENT STRAND – Grade 6

Alabama Course of Study	TEAM-Math	PH	CMP	SAT-10	AHSGE
9. Convert units of length, weight, or capacity within the same system (customary or metric).	M1. Convert units of length, width, or capacity within the same system (Example: cups to gallons)	9:1-2		Identify appropriate units of measurement. Convert between units of measurement.	
6. Classify angles as acute, obtuse, right, or straight. a. Estimating angle measures using 45 degrees, 90 degrees, 180 degrees, 270 degrees, or 360 degrees as referents b. Measuring angles	M2. Estimate, measure, and classify angles	8:1-3		Classify angles. Estimate angle measures.	VII-1
7. Solve problems involving perimeter and area of parallelograms and rectangles. a. Estimating perimeter and area b. Developing formulas to determine perimeter and area of parallelograms and rectangles	M3. Develop and apply formulas (perimeter and area): a. Triangles and trapezoids b. Understand error M4. Develop and apply the volume of a rectangular prism (area of base multiplied by height)	9:3-9	<i>Covering and Surrounding</i> Inv. 1-7	Solve problems involving perimeter or area. Solve problems involving spatial reasoning. Identify a radius, diameter, or chord of a given circle.	IV-1.
8. Determine the distance between two points on a scale drawing or a map using proportional reasoning. a. Using different forms of notation to symbolize ratios and rates.	M5. Use scale drawings and proportions to determine distance	6:5		Determine measurements indirectly from scale drawings.	VII-3 VII-7

DATA AND PROBABILITY STRAND-Grade 6

Alabama Course of Study	TEAM-Math	PH	CMP	SAT-10	AHSGE
10. Interpret information from bar graphs, line graphs, and circle graphs.	D1. Interpret and represent data from charts and tables in bar graphs, line graphs, and circle graphs (1/2 and 1/4 of a circle) D2. Find the mean, median, mode, and range from a list of data	7:1-5	<i>Data About U</i> Inv. 1-3, 5	Translate between visual representations, sentences, and symbolic notation. Identify the rule given a function table. Identify graphic representations of sets of data. Make a prediction based on experimental or statistical data. Identify points on a coordinate grid. Determine measures of central tendency and dispersion.	IV-2 V-1 V-2 V-3 V-4 VI-1 VII-5.
	D3. Make estimates or predictions based on given data	11-3			
D11. Find the probability of a simple event. D11-A Expressing probabilities as ratios, percents, and decimals	D4. Find the probability of a simple event using ratios, percents, and decimals	11-1		Determine combinations and permutations. Identify probabilities of simple events. Identify possible outcomes.	VII-6

Part B. Suggested Sequence of Instructions

First Quarter

Unit on Factorization– Grade 6

Text for Cohort 1 is shaded

Alabama Course of Study	TEAM-Math	PH	CMP	SAT-10	AHSGE
1E Using prime factorizations 1F Identifying prime and composite numbers	N2. Introduce prime factorization N3. Use divisibility rules or prime factorization to determine if a number is prime or composite	3:1-2	Prime Time Inv. 1-6	Identify least common multiple or greatest common factor for a set of numbers.	I-4

Unit on Number – Grade 6

TEAM-Math	Alabama Course of Study	PH	CMP	SAT-10	AHSGE
N1. Use operations involving place value, fractions, decimals, common percents, rational numbers, and determine reasonableness of an answer: N1C Real number line N1F Compare and order N4 Convert terminating decimals to fractions and percents N5 Solve problems involving decimals, fractions, percents, and proportions	1 Demonstrate computational fluency with addition, subtraction, multiplication, and division of decimals and fractions. 1a Comparing rational numbers written as fractions, decimals, mixed numbers, and percents 1d Writing decimal numbers in expanded notation 1g Using greatest common factor (GCF) to simplify fractions 1h Formulating algorithms using basic operations on fractions and decimals 1i Applying the distributive property to compute with fractions and decimals 1j Using least common multiple (LCM) to add and subtract fractions with unlike denominators 1b Converting fractions and mixed numbers to decimals and percents 1c Converting terminating decimals and percents to fractions and mixed numbers 2 Solve problems involving decimals, percents, fractions and proportions. 2a Estimating with fractions and decimals	1:2-9 3:3-8 4:1-5 5:1-4	Bits and Pieces I Inv. 1-6	Identify the place value of a digit in a whole or decimal number. Round whole or decimal numbers to a specified place value. Compare and order rational numbers. Identify alternative representations of rational numbers. Addition, subtraction, multiplication, and division of fractions using symbolic notation and in context. Addition, subtraction, multiplication, and division of decimals using symbolic notation and in context. Solve problems using estimation strategies. Identify the effect of an operation. Solve problems using appropriate strategies. Solve problems using numerical reasoning. Solve problems using non-routine strategies. Addition, subtraction, multiplication, and division of whole numbers using symbolic notation and in context..	VII-2

The Unit on Data and Probability should begin after section 5-4 in Prentice-Hall or after *Bits and Pieces I* in CMP.

Second Quarter

Unit on DATA AND PROBABILITY -Grade 6

TEAM-Math	Alabama Course of Study	PH	CMP	SAT-10	AHSGE
D1. Interpret and represent data from charts and tables in bar graphs, line graphs, and circle graphs ($\frac{1}{2}$ and $\frac{1}{4}$ of a circle) D2. Find the mean, median, mode, and range from a list of data D3. Make estimates or predictions based on given data D4. Find the probability of a simple event using ratios, percents, and decimals	10. Interpret information from bar graphs, line graphs, and circle graphs. 11. Find the probability of a simple event 1a Expressing probabilities as ratios, percents and decimals	7:1-5 11:1	<i>Data About Us</i> Inv. 1-5	Translate between visual representations, sentences, and symbolic notation. Identify the rule given a function table. Identify graphic representations of sets of data. Make a prediction based on experimental or statistical data. Identify points on a coordinate grid. Determine measures of central tendency and dispersion. Determine combinations and permutations. Identify probabilities of simple events. Identify possible outcomes.	IV-2 V-1 V-2 V-3 V-4 VI-1 VII-5

After the Unit on Data and Probability, complete the Unit on Number

Third Quarter

Unit on MEASUREMENT – Grade 6

TEAM-Math	Alabama Course of Study	PH	CMP	SAT-10	AHSGE
M1. Convert units of length, width, or capacity within the same system (Example: cups to gallons)	9. Convert units of length, weight, or capacity within the same system (customary or metric).	9:1-2		Identify appropriate units of measurement. Convert between units of measurement.	
M2. Estimate, measure, and classify angles	6. Classify angles as acute, obtuse, right, or straight. 6a. Estimating angle measures using 45 degrees, 90 degrees, 180 degrees, 270 degrees, or 360 degrees as referents 6b. Measuring angles	8:1-3		Classify angles. Estimate angle measures.	VII-1
M3. Develop and apply formulas (perimeter and area): M3a Triangles and trapezoids M3b Understand error M4. Develop and apply the volume of a rectangular prism (area of base multiplied by height)	7 Solve problems involving perimeter and area of parallelograms and rectangles. 7a. Estimating perimeter and area 7b. Developing formulas to determine perimeter and area of parallelograms and rectangles	9:3-6,9	<i>Covering and Surrounding</i> Inv. 1-7	Solve problems involving perimeter or area. Solve problems involving spatial reasoning. Identify a radius, diameter, or chord of a given circle.	IV-1

Unit on GEOMETRY – Grade 6

TEAM-Math	Alabama Course of Study	PH	CMP	SAT-10	AHSGE
G1. Based on attributes, properties, and component parts (sides, angles, parallel and perpendicular lines) identify and classify: G1a. Quadrilaterals and triangles G1b. Circles G1c. Prisms and pyramids G1d. Cylinders and cones	4. Identify two-dimensional and three-dimensional figures based on attributes, properties, and component parts. 4a. Classifying quadrilaterals based on their attributes 4c. Classifying triangles as right, obtuse, or acute 5b. Comparing parallel and perpendicular lines	8:4-5 9:7	<i>Shapes and Designs</i> Inv. 1-6	Solve problems involving spatial reasoning.	VII-4
G2. Identify transformations on coordinate plane	5. Plot coordinates on grids, graphs, and maps. 5a. Identifying the coordinates of a point on the Cartesian plane	8:8-9	<i>Ruins of Montarek</i> Inv. 1-6	Identify geometric transformations.	
G3. Identify line and rotational symmetries of polygons	4b. Identifying line and rotational symmetries of polygons				

Unit on Integers-6th Grade

TEAM-Math	Alabama Course of Study	PH	CMP	SAT-10	AHSGE
N1d. Integers (add) N1c. Real Number Line (including Integers) N1e. Order of operations (+, -, x, /) N1a. Exponents N1b. Distributive		10:1-5 1:10 2:8-9		Identify and use order of operation rules. Evaluate expressions. Identify and use field properties of addition and subtraction.	I-1 I-2 I-3

Fourth Quarter

Unit on Algebra-Grade 6

TEAM-Math	Alabama Course of Study	PH	CMP	SAT-10	AHSGE
A3 Solve one-step equations		2:5-7 12:1		Solve simple algebraic equations. Identify steps to solve equations.	II-1 II-2 II-3 II-4 VIII-8

Unit on Proportions- Grade 6

TEAM-Math	Alabama State Course of Study	PH	CMP	SAT-10	AHSGE
N6 Extend strategies for solving proportions to using cross products N7 Select appropriate strategies for solving proportions M5 Use scale drawings and proportions to determine distance	2 Solve problems involving proportions. 8 Determine the distance between two points on a scale drawing or a map using proportional reasoning. 8a. Using different forms of notation to symbolize ratios and rates	6:1-5		Solve problems using ratio and proportion. Determine measurements indirectly from scale drawings.	VII-3 VII-7

Unit on Graphing – Grade 6

TEAM-Math	Alabama Course of Study	PH	CMP	SAT-10	AHSGE
A1. Determine a verbal rule for a function when given the input and output A2. Solve problems using geometric and numeric patterns	3. Solve problems using numeric and geometric patterns. 3a. Determining a verbal rule for a function given the input and output	2:1,4 10:6,8,9		Solve problems involving patterns. Read and interpret tables and graphs. Translate between visual representations, sentences, and symbolic notation. Identify the rule given a function table.	III- III-2