

Chapter 16. Curriculum for Algebra I

Part A. Correlation of Objectives with Recommended Textbooks

NUMBER STRAND – Algebra I

Alabama Course of Study	TEAM-Math	AHSGE	Glencoe	IMP	CORE-Plus
	N1. Order and compare real numbers emphasizing irrational numbers.		Throughout Chapt. 2	(2) All About Alice [Days 13-17] (1) Patterns [Days 13-14]	
	N3. Distinguish between number sets: real, rational, irrational, whole, integer.		Throughout Chapt. 2	(2) All About Alice [Days 13-17]	
1. Simplify numerical expressions using properties of real numbers and order of operations, including those involving square roots, radical form, or decimal approximations. a. Applying laws of exponents to simplify expressions, including those containing zero and negative integral exponents	N4. Perform operations involving a. Real numbers including radicals b. Exponents	I-1, VI-1, VII-4, VII-8 I-1, VII-8 I-1, VII-8 VII-4 VII-8 I-3, VII-4, VII-8 VII-4, VII-8	1-1 p.6-10 1-2 p.11-15 1-4-1-6 p.21-35 2-1-2-4 p.68-85 2-7 p.103-109 8-1-8-2 p.410-424 11-1-11-2 p.586-597	(2) Cookies [entire unit] (2) Solve It [Days 6,8,9,18,19] (2) All About Alice [Days 1-7] (2) Do Bees Build It [Days 13, 19] (1) Patterns [Days 9,10] (1) Game of Pig [Day 27]	

ALGEBRA STRAND – Algebra I

Alabama Course of Study	TEAM-Math	AHSGE	Glencoe	IMP	CORE-Plus
4. Represent graphically common relations, including $x = \text{constant}$, $y = \text{constant}$, $y = x$, $y = \sqrt{x}$, $y = x^2$, and $y = x $. •a. Identifying situations that are modeled by common relations, including $x = \text{constant}$, $y = \text{constant}$, $y = x$, $y = \sqrt{x}$, $y = x^2$, and $y = x $ 2. Analyze linear functions from their equations, slopes, and intercepts. a. Finding the slope of a line from its equation or by applying the slope formula b. Determining the equations of linear functions given two points, a point and the slope, tables of values, graphs, or ordered pairs	A1. a. Identify and graphically represent: <ul style="list-style-type: none"> • $x = \text{constant}$ • $y = \text{constant}$ • $y = x$ (identity) • $y = \sqrt{x}$ • $y = x^2$ • $y = x$ b. Investigate and translate vertically and horizontally: <ul style="list-style-type: none"> • (same list as above) c. Analyze linear functions from their slopes, equations, and intercepts:	V-1, V-4, VII-8 VII-8 VII-8 VII-8 V-1, V-4, VII-8 V-1, V-2, V-4, IV-2, VII-8	4-3 p.205-210, 4-6 p.226-230, 5-3F, 10-1 p. 524-532, 10-1F, 10-2 p.533-538 10-3 p. 539-543,10-3F, 11-F 4-5 p. 218-225, 4-5F 5-1-5-5 p. 256-291 6-6 p.352-358	(1) Overland Trail [Days 11-25] (1) Shadows [p 39; Days 13-14] (2) Solve It [Days 5, 20-23,25-29] (2) Cookies [Days 2-21] (3) Meadows or Malls [Days 3-4,18-19] (4) High Dive [Day 23]	

Alabama Course of Study	TEAM-Math	AHSGE	Glencoe	IMP	CORE-Plus
<p>c. Graphing two-variable linear equations and inequalities on the Cartesian plane</p> <p>3. Determine characteristics of a relation, including its domain, range, and whether it is a function, when given graphs, tables of values, mappings, or sets of ordered pairs.</p> <p>a. Finding the range of a function when given its domain</p> <p>7. Solve multi-step equations and inequalities including linear, radical, absolute value, and literal equations.</p> <p>a. Writing the solution of an equation or inequality in set notation</p> <p>b. Graphing the solution of an equation or inequality</p> <p>c. Modeling real-world problems by developing and solving equations and inequalities, including those involving direct and inverse variation</p> <p>8. Solve systems of linear equations and inequalities in two variables graphically or algebraically.</p> <p>a. Modeling real-world problems by developing and solving systems of linear equations and inequalities</p> <p>9. Solve quadratic equations using the zero product property.</p> <p>a. Approximating solutions graphically and numerically</p>	<ul style="list-style-type: none"> • Find slope of a line form equation or using slope formula. • Determine the equations of linear functions given 2 points, a point and slope, tables of values, graphs, and ordered pairs. • Graph two-variable linear equations and inequalities on the Cartesian plane. <p>d. Determine the equation of a line parallel or perpendicular to a second line through a given point (Course of Study # 7)</p> <p>e. Determine the characteristics of a relation, including:</p> <ul style="list-style-type: none"> • Domain • Range • Whether it is a function when given graphs, tables of functions, mappings, or sets of ordered pairs. <p>f. Solve equations and inequalities including: (Course of Study #7)</p> <ul style="list-style-type: none"> • Multi-step linear • Radical • Absolute value • Literal • Linear systems in two variables (Course of Study #8) • Factorable quadratics (Course of Study #9) • Using the quadratic formula • G. Write in set notation and graph solutions of an equation or inequality 	<p>VI-1, V-3,VII-8</p> <p>VII-8</p> <p>VII-8</p> <p>VII-8</p> <p>III-1,III-2,VII-8</p> <p>VII-4, VII-8</p> <p>II-1, VII-8</p> <p>II-1, VII-8</p> <p>II-1, VII-4, VII-8</p> <p>V-I, V-4,VII-8</p> <p>V-3,VI-1,VII-8</p> <p>V-3,VI-1,VII-8</p> <p>VII-2,VII-4, VII-8</p> <p>VII-8</p> <p>VI-1,VI-4,VII-8</p> <p>VI-1, VII-8</p> <p>I-4,II-2, VII-8</p>	<p>1-8 p.43-48 4-3P 4-3 p.205-210 4-4 p. 212-217 4-6 p.226-230</p> <p>3-1 p.120-126 , 3-4P, 3-4 p.142-148 3-5 p.149-154 3-8 p.166-170</p> <p>5-2 p.264-269 6-1 p.318-323 6-3-6-6 p.332-357 11-3-11-4 p.598-610</p> <p>12-1 p.642-647</p> <p>7-1P, 7-1p.369-374, 7-1F</p> <p>7-2-7-5 p.376-398 10-4F</p> <p>9-2-9-5 p.481-507 10-2-10-4 p.533-552</p>		

Alabama Course of Study	TEAM-Math	AHSGE	Glencoe	IMP	CORE-Plus
7. (see above) 8. (see above)	A2. Model real world problems by developing and solving equations and inequalities including inverse and direct variation, systems of equations, and simple number theory. (Course of Study #7 & #8)	VI-1,VII-8 II-1,VI-1,VII-8 II-1,VI-1,VII-8 V-1,V-4,VII-7 VII-8 VI-1,V-3,VII-8 VI-1,V-3,VII-8 VII-2,VII-8 II-3,VI-1,V-1, V-4,VII-8 II-3,VI-1,VII-8	3-1 p. 120-126 3-4P 3-4-3-5 p.142-154 5-2 p.264-269 6-1p.318-323, 6-3-6-6 p.332-359 11-3-11-4 p.586-610 12-1 p.642 7-1P, 7-1 p. 369-374, 7-1F 7-2-7-5 p. 376-399 10-4F	(2) Solve It [entire unit] (1) Overland Trail [Days 27-28] (2) Cookies [entire unit]	
5. Perform operations of addition, subtraction, and multiplication on polynomial expressions. a. Dividing by a monomial 6. Factor binomials, trinomials, and other polynomials using GCF, difference of squares, perfect square trinomials, and grouping.	A3. Perform operations on polynomial expressions: (Course of Study #5) <ul style="list-style-type: none"> • +, - • x • / by a monomial • factor (not sum and difference of cubes) 	I-2,I-3,VII4, VII-8 VII-8 I-4,II-2,VII-4, VII-8 I-4,II-2,VII-4, VII-8 I-4,II-2,VII-8	All of Chapter 8 except 8-3 12-5 p. 666-671 9-2P, 9-2 p.481-486 9-3P, 9-3 p.489-494 9-4-9-6 p.495-515	(3) Fireworks [entire unit]	

GEOMETRY STRAND – Algebra I

Alabama Course of Study	TEAM-Math	AHSGE	Glencoe	IMP	CORE-Plus
10. Calculate length, midpoint, and slope of a line segment when given coordinates of its endpoints on the Cartesian plane. a. Deriving the distance, midpoint, and slope formulas	G3. Calculate length, midpoint, and slope of a line segment given coordinates. (Course of Study #10) a. Deriving the distance, midpoint, and slope formulas	IV-2,VII-8 IV-2,VII-8 IV-2,VII-8	4-1 p. 192-196 5-1 p.256-263 11-5 p.611-615		

MEASUREMENT STRAND – Algebra I

Alabama Course of Study	TEAM-Math	AHSGE	Glencoe	IMP	CORE-Plus
	M1. Analyze various problems to determine which measurement and tools are appropriate in relation to Algebra I topics, including analyzing accuracy and approximate error.			Pit & Pendulum [entire unit]	
11. Solve problems algebraically that involve area and perimeter of a polygon, area and circumference of a circle, and volume and surface area of right circular cylinders or right rectangular prisms. a. Applying formulas to solve word problems	M3. Solve problems algebraically that involve area and perimeter of a polygon, area and circumference of a circle, and volume and surface area of right circular cylinders or right rectangular prisms. a. Applying formulas to solve word problems (Course of Study #11) Example::finding the radius of a circle with area 75 square inches	I-1,VI-1,VII-4 VII-8 VII-4,VII-8 VII-4,VII-8 II-1,VII-4,VII-8 V-I,V-4,VII-8 VII-8 I-3,VII-4,VII-8 VII-4,VII-8 I-1,I-2,VII-1, VII-4,VII-8 I-4,VII-4,VII-8 V-1,V-4,VII-8 VII-2,VII-4,VII-8 VII-8 VII-8	1-1-1-2 p.6-15, 1-5-1-6 p. 26-35 2-4 p.84-87 3-1 p.410-415, 3-4-3-5 p. 142-154 3-8 p.166-170 4-5 p.218-223 4-7 p.233-239 8-1 p.410-415, 8-1F 8-2 p.417-424 8-4-8-8 p.432-464 9-1-9-6 p.474-515 10-1-10-4 p. 524-553 11-1-11-4 p.586-610 12-2 p.648-653 12-4-12-6 p. 660-676	Solve It [Day 3] Do Bees Build It [Day 11] Game of Pig [p 91, 97, 55]	

DATA ANALYSIS & PROBABILITY STRAND – Algebra I

Alabama Course of Study	TEAM-Math	AHSGE	Glenco	IMP	CORE-Plus
12. Compare various methods of data reporting, including scatterplots, stem-and-leaf plots, histograms, box-and-whisker plots, and line graphs, to make inferences or predictions. a. Determining effects of linear transformations of data b. Determining effects of outliers c. Evaluating the appropriateness of the design of a survey	D1. Compare various methods of data reporting, including scatterplots, stem-and-leaf plots, histograms, box-and-whisker plots, and line graphs, to make inferences or predictions. a. Determining effects of linear transformations of data b. Determining effects of outliers c. Evaluating the appropriateness of the design of a survey (Course of Study #12)	VII-8 VII-8 VII-8 VII-8 VII-8 VII-8	1-9 p.50-55 ,1-9F 2-5 p.88-95 5-7 p.298-305, 5-7F 13-1 p. 708-714, RM13 13-3 p.722-728, 13-3F 13-4-13-5 p.731-742, 13-5F	Is There Really A Difference [entire unit] Overland Trail [Days 17-18] Pit & Pendulum [p 31] Game of Pigs [p 21]	
14. Use a scatterplot and its line of best fit or a specific line graph to determine the relationship existing between two sets of data, including positive, negative, or no relationship.	D3. Use a scatterplot and its line of best fit or a specific line graph to determine the relationship existing between two sets of data, including positive, negative, or no relationship. (Course of Study #14)	VII-8	5-7 p.298-305, 5-7F	Is There Really A Difference [entire unit] Pit & Pendulum [Days 7-15, 21-26]	
13. Identify characteristics of a data set, including measurement or categorical and univariate or bivariate. Example: conducting a survey of 100 students to determine whether boys and girls prefer to watch the same genres of movies to get a bivariate, categorical data set	D4. Identify characteristics of a data set, including measurement or categorical and univariate or bivariate. (Course of Study #13)	VII-8	13-1 p.708-714	Is There Really A Difference [entire unit] Pit & Pendulum [Days 16-19] Overland Trail [Days 17-18]	
15. Estimate probabilities given data in lists or graphs. a. Comparing theoretical and experimental probabilities	D5. Estimate probabilities given data in lists or graphs. a. Comparing theoretical and experimental probabilities (Course of Study #15)	VII-8 VII-6, VII-8	2-6 p. 96-100, 14-3-14-5 p.769-792	Is There Really A Difference [entire unit] Game of Pigs[Days 1-20]	

Part B. Suggested Sequence of Instructions

UNIT 1: Finite Math

Topics	AL COS	TEAM-Math	Glencoe	IMP
Compare data – scatterplots, stem and leaf, histograms, box and whisker, line graphs	12 a, b, c	D1 a, b, c	1-9 p.50-55 ,1-9F 2-5 p.88-95 5-7 p.298-305, 5-7F 13-1 p. 708-714, RM13 13-3 p.722-728, 13-3F 13-4-13-5 p.731-742, 13-5F	
Use scatterplot and best fit line to compare relationships among data	14	D3	5-7 p.298-305, 5-7F	
Identify characteristics of data set	13	D4	13-1 p.708-714	
Estimate probabilities given data	15 a	D5 a	2-6 p. 96-100, 14-3-14-5 p.769-792	
Analyze problems to determine appropriate measurement tool, accuracy, and approximate error		M1		

UNIT 2A: Linear Equations and Inequalities

Topics	AL COS	TEAM-Math	Glencoe	IMP
Distinguish between number sets, ie. Real, rational, irrational		N3	Throughout Chapter 2	Solve It
Order and compare real numbers (emphasize irrationals)		N1	Throughout Chapter 2	
Perform operations involving real numbers and exponents, including radicals	1 a	N4	1-1 p.6-10 1-2 p.11-15 1-4-1-6 p.21-35 2-1-2-4 p.68-85 2-7 p.103-109 8-1-8-2 p.410-424 11-1-11-2 p.586-597	(2) Solve It [Days 6,8,9,18,19]
Solve equations and inequalities	7 a, b, c	A1F a, b, c, d, h	3-1 p.120-126 , 3-4P, 3-4 p.142-148 3-5 p.149-154 3-8 p.166-170 5-2 p.264-269 6-1 p.318-323 6-3-6-6 p.332-357 11-3-11-4 p.598-610	Baker’s Choice [days 3, 9, 10, 12]

Topics	AL COS	TEAM-Math	Glencoe	IMP
Identify graphs of common relations Investigate and translate vertically and horizontally graphs of common relations	4 a	A1A a-f, A1B	4-3 p.205-210, 4-6 p.226-230, 5-3F, 10-1 p. 524-532, 10-1F, 10-2 p.533-538 10-3 p. 539-543,10-3F, 11-F	
Determine characteristics of a relation (domain, range, etc)	3 a	A1E a-c	1-8 p.43-48 4-3P 4-3 p.205-210 4-4 p. 212-217 4-6 p.226-230	

Unit 2B: Linear Equations and Inequalities

Topics	AL COS	TEAM-Math	Glencoe	IMP
Analyze linear functions, their slopes, equations, and intercepts	2 a, b, c	A1C a-c	Throughout Chapter 5	Baker's Choice [days 4, 5, 7, 8, 9, 10, 12, 14, 15]
Calculate length, midpoint, slope	10 a	G3	4-1 p. 192-196 5-1 p.256-263 11-5 p.611-615	
Determine equation of line parallel or perpendicular	7 c	A1D	5-6 p. 292-297	Baker's Choice [days 9, 10, 12]
Solve systems of linear equations	8 a 7 c	A1F e, h	7-1P, 7-1p.369-374, 7-1F 7-2-7-5 p.376-398	Baker's Choice [days 12, 13, 14,15]
Model real world problems involving equations/inequalities	7 a, b, c 8 a	A2	3-8 p. 166-170 3-9 p. 171-177 Throughout Chapter 7	Baker's Choice [entire unit]

UNIT 3: Polynomial Operations

Topics	AL COS	TEAM-Math	Glencoe	IMP
Perform operations on polynomial expressions	5 a, 6	A3 a-d	All of Chapter 8 except 8-3 12-5 p. 666-671 9-2P, 9-2 p.481-486 9-3P, 9-3 p.489-494 9-4-9-6 p.495-515	
Factor Polynomials				

UNIT 4: Quadratics

Topics	AL COS	TEAM-Math	Glencoe	IMP
Solve quadratics (zero product property, quadratic equation, graphs)	9 a	A1F f, g	9-2P, 9-2 p.481-486 9-3P, 9-3 p.489-494 9-4-9-6 p.495-515	
Solve problems involving area and perimeter (with and without quadratics)	11 a	M3 a	1-1-1-2 p.6-15, 1-5-1-6 p. 26-35 2-4 p.84-87 3-1 p.410-415, 3-4-3-5 p. 142-154 3-8 p.166-170 4-5 p.218-223 4-7 p.233-239 8-1 p.410-415, 8-1F 8-2 p.417-424 8-4-8-8 p.432-464 9-1-9-6 p.474-515 10-1-10-4 p. 524-553 11-1-11-4 p.586-610 12-2 p.648-653 12-4-12-6 p. 660-676	