

Scope and Sequence
Algebra I

Resource Key

PH – Prentice Hall

PH-TE –Prentice Hall Teacher Ed.

Sketchpad – Geometers Sketchpad
Software

AR – TEXTEAMS Algebraic Reasoning

NR - TEXTEAMS Numeric Reasoning

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|--|----------------|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| 8.2 | The student selects and uses appropriate operations to solve problems and justify solutions. | | | | | | |
| c1(C) | The student translates among and uses algebraic, tabular, graphical, or verbal descriptions of linear functions. | | | | | | |
| b1(C) | The student describes functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situations. | | | | | | |
| b1(D) | The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, and equations and inequalities. | | | | | | |
| b3(A) | The student uses symbols to represent unknowns and variables. | | | | | | |
| b4(B) | The student uses the commutative, associative, and distributive properties to simplify algebraic expressions. | | | | | | |
| c2(G) | The student relates direct variation to linear functions and solves problems involving proportional change. | | | | | | |
| c3(A) | The student analyzes situations involving linear functions and formulates linear equations or inequalities to solve problems. | | | | | | |
| c3(B) | The student investigates methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, selects a method, and solves the equations and inequalities. | | | | | | |
| c3(C) | For given contexts, the student interprets and determines the reasonableness of solutions to linear equations and inequalities. | | | | | | |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| b1(A) | The student describes independent and dependent quantities in functional relationships. | | — | | | | |
| b1(B) | The student gathers and records data, or uses data sets, to determine functional (systematic) relationships between quantities. | | — | | | | |
| b1(D) | The student represents relationships among quantities using concrete models, tables, graphs, and diagrams, verbal descriptions, and equations. | | — | | | | |
| b1(E) | The student interprets and makes inferences from functional relationships. | | — | | | | |
| b2(B) | For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. | | — | | | | |
| b2(D) | In solving problems the student collects and organizes data, makes and interprets scatterplots, and models, predicts, and makes decisions and critical judgments. | | — | | | | |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|--|----------------|---|-------|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| b1(A) | The student describes independent and dependent quantities in functional relationships. | | | _____ | | | |
| b1(B) | The student gathers and records data, or uses data sets, to determine functional (systematic) relationships between quantities. | | | _____ | | | |
| b1(D) | The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, and equations and inequalities. | | | _____ | | | |
| b1(E) | The student interprets and makes inferences from functional relationships. | | | _____ | | | |
| b2(A) | The student identifies and sketches the general forms of linear ($y = x$) functions. | | | _____ | | | |
| b2(B) | For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. | | | _____ | | | |
| b2(C) | The student interprets situations in terms of given graphs or creates situations that fit given graphs. | | | _____ | | | |
| b2(D) | In solving problems, the student collects and organizes data, makes and interprets scatterplots, and models, predicts, and makes decisions and critical judgments. | | | _____ | | | |
| b3(B) | Given situations, the student looks for patterns and represents generalizations algebraically. | | | _____ | | | |
| c1(A) | The student determines whether or not given situations can be represented by linear functions. | | | _____ | | | |
| c1(B) | The student determines the domain and range values for which linear functions make sense for given situations. | | | _____ | | | |
| c1(C) | The student translates among and uses algebraic, tabular, graphical, or verbal descriptions of linear functions. | | | _____ | | | |
| c2(A) | The student develops the concept of slopes as rate of change and determines slopes from graphs, tables, and algebraic representations. | | | _____ | | | |
| c2(B) | The student interprets the meaning of slope and intercepts in situations using data, symbolic representations, or graphs. | | | _____ | | | |
| c2(C) | The student investigates, describes, and predicts the effects of change in m and b on the graph of $y=mx + b$. | | | _____ | | | |
| c2(D) | The student graphs and writes equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept. | | | _____ | | | |
| c2(E) | The student determines the intercepts of linear functions from graphs, tables, and algebraic representations. | | | _____ | | | |
| c2(F) | The student interprets and predicts the effects of changing slope and y-intercept in applied situations. | | | _____ | | | |

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|---|---|-------|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| d3(A) | The student uses patterns to generate the laws of exponents and applies them in problem-solving situations. | | | | _____ | | |
| d3(C) | The student analyzes data and represents situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods. | | | | _____ | | |
| D2(B) | The student uses the Pythagorean Theorem to solve real-life problems. | | | | _____ | | |

| | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|---|---|---|-------|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| c4(A) | The student analyzes situations and formulates systems of linear equations to solve problems. | | | | | _____ | |
| c4(B) | The student solves systems of linear equations using concrete models, graphs, tables, and algebraic methods. | | | | | _____ | |
| c4(C) | For given contexts, the student interprets and determines the reasonableness of solutions to systems of linear equations. | | | | | _____ | |

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|---|---|---|---|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| b2(A) | The student identifies and sketches the general forms of quadratic ($y = x^2$) parent functions. | | | | | | _____ |
| b4(A) | The student finds specific function values, simplifies polynomial expressions, transforms and solves equations, and factors as necessary in problem situations. | | | | | | _____ |
| d1(A) | The student determines the domain and range values for which quadratic functions make sense for given situations. | | | | | | _____ |
| d1(B) | The student investigates, describes, and predicts the effects of changes in a on the graph of $y = ax^2$. | | | | | | _____ |
| d1(C) | The student investigates, describes, and predicts the effects of change in c on the graph of $y = x^2 + c$. | | | | | | _____ |
| d1(D) | For problem situations, the student analyzes graphs of quadratic functions and draws conclusions. | | | | | | _____ |
| d2(A) | The student solves quadratic equation using concrete models, tables, graphs, and algebraic methods. | | | | | | _____ |
| d2(B) | The student relates the solutions of quadratic equations to the roots of their functions. | | | | | | _____ |
| d3(B) | The student analyzes data and represents situations involving inverse variation using concrete models, tables, graphs, or algebraic methods. | | | | | | _____ |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|--|----------------|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| 8.2 | The student selects and uses appropriate operations to solve problems and justify solutions. | | | | | | |
| c1(C) | The student translates among and uses algebraic, tabular, graphical, or verbal descriptions of linear functions. | | | | | | |
| b1(C) | The student describes functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situations. | | | | | | |
| b1(D) | The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, and equations and inequalities. | | | | | | |
| b3(A) | The student uses symbols to represent unknowns and variables. | | | | | | |
| b4(B) | The student uses the commutative, associative, and distributive properties to simplify algebraic expressions. | | | | | | |
| c2(G) | The student relates direct variation to linear functions and solves problems involving proportional change. | | | | | | |
| c3(A) | The student analyzes situations involving linear functions and formulates linear equations or inequalities to solve problems. | | | | | | |
| c3(B) | The student investigates methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, selects a method, and solves the equations and inequalities. | | | | | | |
| c3(C) | For given contexts, the student interprets and determines the reasonableness of solutions to linear equations and inequalities. | | | | | | |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.1.C Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|--|---|
| 7.11.A Select, use, and justify appropriate representation of selected data. 7.11 B Make inferences convincing arguments based on data 8.12.C Construct circle graphs, bar graphs, and histograms. 8.4 Generate different models for the same data. 8.12.B Make predictions from scatterplots. | The student translates among and uses algebraic, tabular, graphical, or verbal descriptions or linear functions. | b.3.B Solve equations, inequalities and systems modeled by functions using graphs and tables d.3.C Compare and translate between algebraic and graphical solutions of quadratic equations. |

- | Specific Student Expectations |
|---|
| <ul style="list-style-type: none"> • TLW translate from a word problem into an equation. • TLW translate the equation into a table. • TLW translate the table into a graph. • TLW translate from a given graph into an equation. • TLW translate from a table into an equation. • TLW translate from word problems into graphs. |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE , p. 269, Visual Learning p. 271 Kinesthetic Learning Translate word problems into equations. Make table and graph. | PH Ch. Ch. 2 - 6 ACE: Appendix D |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 3 ; TAKS OBJ. 3 Fall 1998, Item #32, 36, 38, 39 Spring 1999, Item #17, 18 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Standard form and slope-int. form. Equations should include fractions Ex. $\frac{3}{4}x + \frac{5}{2}$ Generate conclusions from a table | A-1-2000 1.2 The y-intercept. A-1-2000 S.A. Going to Great Depths. Alg. R. Cross Country Cycling. NCTM: 1, 2, 5, 6, 8 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.C Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|---|--|
| 7.3B Estimate and solve application problems involving proportional relationships. 8.3.A Compare and contrast proportional and non-proportional | The student describes functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situations. | b.3.A The student analyzes situations and formulates systems of equations or inequalities in two or more unknowns to solve problems. |

| Specific Student Expectations |
|---|
| TLW write and solve an equation/inequality given a real-world situation. |

| Instruction | |
|--|--|
| Strategies | Resources |
| PH-TE, p. 290, Kinesthetic Learning p. 296, visual /Auditory Uses charts, tables, graphs manipulatives and calculators to discuss patterns, relationships, reasonableness. Emphasize fractional values | PH Ch. 1 - 6 GTI Activity 17 |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| Assesses students by asking questions such as, How did you solve this problem? Explain your strategy. Explain how you found your solution. | EOC – 4; TAKS OBJ. 1 EOC Spring, 1999 Test Items #38, 30 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Emphasize fractional values. Justify reasonable window. Calculator: Table setup-Utilize “Ask” mode for independent variable. | A-1-2000: 2.2 Identifying more patterns 1.1: Variable and Functions: 1.2 Valentine Day Idea; 2.1 Identifying Patterns; SA-Investigate Recursively NCTM: 1, 2, 5, 6, 8, 10 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # **b.1.D** **Grade Level:** **Algebra I** **Time Range:**

| Grade 7/8 | Algebra I | Algebra II |
|--|--|---|
| 7.4A Generate formulas involving conversions, perimeter, area, volume, circumference, scaling. 7.4 B Graph data to demonstrate relationships. 8.4 Generate different models for the same data. | The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities. | b.3.B The student use algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities. d.4.B The student relates representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions. |

| Specific Student Expectations |
|--|
| TLW use one method of representation to convert to other methods of representation. |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE , p. 215, ex. 1 and 2 p. 277, Auditory Learning p. 320, Auditory Learning | PH Ch. 2, 7 and 10 GTI Activity 8, 18, 19, 20, 21 ACE: Appendix D, H Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 2 & 4 ; TAKS OBJ. 1 EOC Spring 1999, # 8, 12, 26 Fall 1998, # 34 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Emphasize rational values | A-1-2000 1.1 Variables and Functions 1.2 Valentine Day Idea S.A. Investigate Recursively Alg. R. pp. 80-173, 184-200 NCTM: 1, 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.3.A **Grade Level:** Algebra I **Time Range:** _____

| Grade 7/8 | Algebra I | Algebra II |
|--|---|---|
| 7.2C Add, subtract, multiply, and divide integers and connect to algorithms. 7.2 F Select appropriate operations and justify. 8.2A. Solve equations with models and use symbols to record. | The student uses symbols to represent unknowns and variables. | b.3.A The student analyzes situations and formulates systems or equations or inequalities in two or more unknowns to solve problems |

| Specific Student Expectations | |
|--|--|
| TLW use symbols to represent unknowns and variables. | |

| Instruction | |
|---|---|
| Strategies | Resources |
| PH-TE, p. 73, Auditory Learning, p. 74, Tactile p. 86, Kinesthetic Learning p. 85, Visual Learning | PH Ch. 1 - 10 GT I: 1, 3 |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| Have students calculate their own grades (averages) and determine grades needed to reach certain plateaus. PH-TE, pp. 81 and 87 Alternative Assessment | EOC : Obj 6 – TAKS OBJ. 2 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Evaluate expression using rational numbers. Ex: $3a - 4b$ when $a = 5/6$; $b = -2/3$ | A-1-2000 1.1 Variables and Functions 1.2 Valentine Day Idea S.A. Investigate Recursively Alg. R. pp. 80-173, 184-200 NCTM: 4, 5 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.4.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|--|---|
| <p>7.2 F Select and use appropriate operations and justify solutions.</p> <p>8.2.A Select and use appropriate operations and justify selections.</p> | <p>The student uses the commutative, associative, and distributive properties to simplify algebraic expressions.</p> | <p>b.2.A Use tools including matrices, factoring, and properties of exponents to simplify expressions and transforms and solve equations.</p> |

| Specific Student Expectations |
|---|
| <p>TLW define the commutative, associative, and distributive properties.</p> <p>TLW identify and apply the commutative, associative, and distributive properties.</p> <p>TLW simplify algebraic expressions use the commutative, associative, and distributive properties.</p> |

| Instruction | |
|--|--|
| Strategies | Resources |
| <p>PH-TE, p. 35 Additional Problems Require students to show distribution arrow when using distributive property. Have students create real-life examples of commutative and associative properties.</p> | <p>PH Ch. 1, 3 - 10 GT I: 16</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>TAKS OBJ. 2; EOC – OBJ #4</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Emphasize use of rational numbers with Distributive property Include use of variables $a(b + c) = ab + ac$ and/or $ab - ac = a(b - c)$</p> | <p>Alg. R., pp.164-200 NCTM: 1, 2, 4, 5</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.2.G Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| 7.3A Estimate and solve application problems involving percent. 7.3 B Estimate and solve application problems involving proportional relationships. 8.3.A Compare and contrast proportional and non-proportional relationships. 8.3.B Estimate and solve applications of proportional relationships. | The student rates direct variation to linear functions and solve problems involving proportional change. | e.6 Use direct and inverse variation models. |

| Specific Student Expectations |
|--|
| TLW relate direct variation to linear functions (vocabulary, direct variation, $y = kx$). TLW compare the contrast with the slope of linear equation. TLW solve problems involving proportional change. TLW analyze tables to see if the rate of change is proportional. |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE, p. 158, Auditory Learning p. 159, Making Connections p. 225, Visual Learning | PH Ch.4, 5 and 11 |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 9; TAKS OBJ. 3 Fall 1998, Item #5 Spring 1999, Item #33 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Applications to real world situations. | A-1-2000 S. A. 4- Height versus Arm Span Alg. R. pgs 145-173; 184-200 NCTM: 1, 2, 4, 5 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.3.A **Grade Level:** Algebra I **Time Range:** _____

| Grade 7/8 | Algebra I | Algebra II |
|--|--|--|
| <p>7.4A Generate formulas involving conversions, perimeter, area, scaling, circumference, and volume.</p> <p>7.4B Graph data to demonstrate relationships</p> <p>7.5A Solve equations with models and use symbols to record</p> <p>7.5B Formulate problems from equations</p> <p>7.10B Find probability of compound events through experimentation</p> <p>8.4.B Graph data to demonstrate relationships.</p> <p>8.5.A Solve equations with models and use symbols to record.</p> <p>8.5.B Formulate problems from equations.</p> <p>8.11.B Make inferences & convincing arguments based on data.</p> | <p>The student analyzes situations involving linear functions and formulates linear equations or inequalities to solve problems.</p> | <p>b.3.A Formulate equations, inequalities or systems to solve problems modeled by functions.</p> <p>c.1.A Identify and sketch graphs of parent functions, including linear, quadratic, square root and exponential.</p> |

| Specific Student Expectations |
|---|
| <p>TLW translates word problems into linear equation or inequality.</p> <p>TLW will study linear equation graphically to make inferences or predictions about two relationships.</p> <p>TLW study data graphically given a table of values to make inferences about a linear equation.</p> |

| Instruction | |
|---|----------------------------------|
| Strategies | Resources |
| <p>PH-TE, p. 141, Kinesthetic Learning p. 164, Tactile Learning p. 176, Visual Learning</p> <p>Key words for all 4 operations should be recognized Ex: more than, quotient, less than, increased by, etc.</p> | <p>PH Ch. 1 - 6 GT I: 23</p> |

| Assessment | |
|---|--|
| Classroom | EOC/TAKS/Other Assessments |
| PH-TE, p. 142 Alternative Assessment | EOC – Obj. 2, 4 & 8; TAKS Obj. 4 Fall 1998, Item # 20 Spring 1999, Item # 2, 36, 40 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Include systems of eq./ inequalities involving Dec./fractions and rewrite w/o dec./fractions. Ex: $2.50x + 1.75y = 40.50$ $1.25x + 1.25y = 20.50$ Create a system of equations problem involving a real world situation. Solve and justify using various methods. | A-1-2000 3.3 Solving Linear Inequalities Alg. R pp. 145-173, 184-200 NCTM: 1, 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.3.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| 7.A Solve equations w/models and use symbols to record. 8.5.A Estimate, find, and justify solutions to application problems. | The student investigates methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, selects a method, and solves the equations and inequalities. | b.3.B Uses algebraic methods, graphs, tables, or matrices to solve systems. d.3.D Solves quadratic equations & inequalities. d.4.D Solves square root equations & inequalities. e.4 Solves rational equations & inequalities. f.4 Solves exponential and logarithmic equations & inequalities. |

| Specific Student Expectations |
|--|
| <p>TLW solve linear equations and inequalities using concrete models.</p> <p>TLW solve linear equations and inequalities using graphs.</p> <p>TLW solve linear equations and inequalities using the properties of equality.</p> |

| Instruction | |
|--|--|
| Strategies | Resources |
| PH-TE, p. 282, Visual Learning | PH Ch. 3, 4, 5 and 6 GT I:24, 25;GT II: 24 Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| PH-TE, p. 278 Alternative Assessment p. 283, Alternative Assessment | EOC – Obj. 2, 4 & 8; TAKS OBJ. 4 Fall 1998, #19, 26 Spring 1999, #34 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Emphasize use of rational numbers. Generate their own expressions and solve. Select most appropriate method and justify. | A-1 2000: 3.1 and 3.3 Solving Linear Inequalities 3.2 Stays the Same NCTM: 1, 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.3.C Grade Level: Algebra I Time Range: _____

| Grade 7/8 | Algebra I | Algebra II |
|--|--|--|
| <p>7.5A Solve equations with models and use symbols to record.</p> <p>8.12B Use and justify appropriate measures to describe a set of data.</p> <p>8.5.A Estimate, find, and justify solutions to application problems.</p> <p>8.13.B Recognize misuses of data analysis and evaluate predictions.</p> | <p>For given contexts, the student interprets and determines the reasonableness of solutions to linear equations and inequalities.</p> | <p>b.3.C Determines the reasonableness of solutions to systems of equations and inequalities.</p> <p>d.4.C Determine the reasonableness of solution to square root equations & inequalities.</p> <p>d.1.A Determine the reasonableness of solution to quadratic equations and inequalities.</p> <p>e.3 Determines the reasonableness of solutions to rational equations and inequalities.</p> <p>f.3 Determines the reasonableness of solutions to exponential and logarithmic equations and inequalities.</p> |

| Specific Student Expectations |
|--|
| <p>TLW check the solutions of linear equations and inequalities by substitution to determine if they are reasonable.</p> <p>TLW select from several graphs to find a reasonable answer to a linear equation or inequality and/or use calculator technology to help in the process.</p> |

| Instruction | |
|---|---|
| Strategies | Resources |
| <p>PH-TE, p. 216, Tactile Learning p. 216, Ex. 4 Identify slope and y-intercept. Tactile Learning: Divide students into pairs. Have each student use the slope formula to find each slope while the other student finds the slope by plotting the points on graph paper. Have students compare answers.</p> | <p>PH Ch. 3 – 6 GT I: 28, 30</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 8; TAKS Obj. 4 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>TI-83 calculator: Refer to table to find rate of change</p> | <p>A-1: 3.3 Solving Linear Inequalities AR: page 145 –162 NCTM: 1, 2, 3, 5, 6</p> |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|-------|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| b1(A) | The student describes independent and dependent quantities in functional relationships. | | _____ | | | | |
| b1(B) | The student gathers and records data, or uses data sets, to determine functional (systematic) relationships between quantities. | | _____ | | | | |
| b1(D) | The student represents relationships among quantities using concrete models, tables, graphs, and diagrams, verbal descriptions, and equations. | | _____ | | | | |
| b1(E) | The student interprets and makes inferences from functional relationships. | | _____ | | | | |
| b2(B) | For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. | | _____ | | | | |
| b2(D) | In solving problems the student collects and organizes data, makes and interprets scatterplots, and models, predicts, and makes decisions and critical judgments. | | _____ | | | | |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.A **Grade Level:** Algebra I **Time Range:** _____

| Grade 7/8 | Algebra I | Algebra II |
|--|---|---|
| 7.4A Generate formulas involving area, conversions, perimeter, circumference, volume, scaling. 7.4B Graph data to demonstrate demonstrate relationships. 8.4 Generate different models from the same data. | The student describes independent and dependent quantities in functional relationships. | b.1.A For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. |

| Specific Student Expectations |
|--|
| TLW describe the independent and dependent quantities using the correct terminology and notation. |

| Instruction | |
|--|--|
| Strategies | Resources |
| PH-TE, p. 69, Auditory Learning p. 323, Tactile Learning p. 446, Visual Learning | PH Ch. 2, 7, 9, and 11 GTI Activity 8 AI: S2-A4 ; ACE: Appendix D |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – OBJ. 1; TAKS: Obj. 1 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Terms used interchangeably. Domain/abscissa/input/independent Range/ordinate/output/dependent Given a graph; determine range of function Given the range of function, find the elements of the domain. | A-1: 1.1 Variables and Functions 1.2 Valentine Day Idea; 2.1 Identifying Patterns SA: Investigate Recursively & Perimeter of Rectangles AR – pp. 80-173, 184 – 200. NCTM: 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|---|--|
| <p>7.11A Select, use, and justify appropriate representations of collected data.</p> <p>8.13.A Evaluate methods of sampling.</p> <p>8.12.B Make predictions from scatterplots.</p> | <p>The student gathers and records data or uses data sets, to determine functional (systematic) relationships between quantities.</p> | <p>b.1.B In solving problems, the student collects data and records results, organizes the data, makes scatterplots, fits the curves to the appropriate parent function, interprets the results, and proceeds to model, predict, and make decisions and critical judgements.</p> |

| Specific Student Expectations |
|--|
| <p>TLW collect and record data in table form.</p> |

| Instruction | |
|---|---|
| Strategies | Resources |
| <p>PH-TE, p. 20, Kinesthetic Learning Set tables of data horizontally as well as vertically</p> | <p>PH Ch. 1 – 3, 5,6, 8 - 11 GTI Activity 8; AI: S2-A 15-20 ACE: Appendix D</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| <p>Project – Tongue Twister, PH p. 57</p> | <p>EOC – Obj. 9; TAKS: Obj. 1</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Data Collecting Project using CBR/CBL.</p> | <p>A-1: 1.1 Variables and Functions 1.2 Valentine Day Idea; 2.1 Identifying Patterns & Out for a Stretch SA: Investigate Recursively & Perimeter of Rectangles SA: Going to Great Depths; AR – pp. 80-173 and pp. 184-200 NCTM: 1, 2, 4, 5, 6</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.D Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|---|
| 7.4A Generate formulas involving conversions, perimeter, area, circumference, volume, scaling 8.4 Generate different models for the same data. | The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities. | b.3.B The student use algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities. d.4.B The student relates representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions. |

| Specific Student Expectations |
|---|
| TLW use one method of representation to convert to other methods of representation. |

| Instruction | |
|---|---|
| Strategies | Resources |
| PH-TE, p. 277 Auditory Learning p. 320 Auditory Learning | PH Ch. 1 - 11 GTI Activity 8, 18, 19, 20, 21 ACE: Appendix D, H |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 2; TAKS: Obj. 1 Spring 1999 #8, 12, 26 Fall 1998, #34 |
| Additional Support | |
| Pre-AP Enrichment | Other |
| Demonstrate data using 3 methods of representation. | A-1: I.(1 – 2) AR pages 80 – 173, 184 – 200 NCTM: 1, 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.E Grade Level: Algebra I Time Range:

| | | |
|---|---|--|
| Grade 7/8 | Algebra I | Algebra II |
| 7.4A Generate formulas involving conversions, perimeter, area, circumference, volume, scaling. 8.4 Generate different models for the same data. | The student interprets and makes inferences from functional relationships. | b.3.A The student analyzes situations and formulates systems of equations or inequalities in two or more unknowns to solve problems. |
| | Specific Student Expectations | |
| | <p>TLW interpret data using real-world situations. TLW make inferences from a given problem situation involving functional relationships.</p> | |
| Instruction | | |
| Strategies | Resources | |
| PH-TE, p.327, Kinesthetic Learning p. 329, Tactile Learning Have students create a table and construct a graph using data they have gathered. | PH Ch. 1 – 3, 5, 7 - 11 GT II: 9 ACE: Appendix D | |
| Assessment | | |
| Classroom | EOC/TAKS/Other Assessments | |
| | EOC – Obj. 8 & 9 ; TAKS: Obj. 1 Fall 1998, #24 | |
| Additional Support | | |
| Pre-AP Enrichment | Activities/Other | |
| Predict, make decisions, and critical judgements based on collected data. | A-1, p. 1-66; Developing Mathematical Models & Using Patterns to Identify Relationships. II-2; Int. relationship between data sets. AR, pp. 80 – 173, 184 – 200 NCTM: 1, 2, 4, 5, 6 | |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.2.B Grade Level: Algebra I Time Range:

| Grade <u>8</u> | Algebra I | Algebra II |
|--|---|---|
| 7.2 G Determine reasonableness of solutions. 8.2.C Evaluate solutions for reasonableness. | For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. | b.1.A For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. |

| Specific Student Expectations |
|--|
| <p>TLW identify the domain and range given an equation.</p> <p>TLW determine the reasonable domain and range in real-world situations.</p> |

| Instruction | |
|---|---|
| Strategies | Resources |
| PH-TE, p. 296, Visual/Auditory Learning p. 296, Ex. 1 Give a long list of examples and have students identify what represents domain and range. | PH Ch. 1, 2, 6 and 7 GT II: 10 ACE: Appendix D |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 1; TAKS: Obj. 2 Fall 1998 Test, Items 29, 31, 37 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Setting reasonable window (domain and range). Justify | A-1, pp. 41 – 62: Using Patterns to Identify Relationships AR, pp. 80-144 NCTM: 1, 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.2.D Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|--|---|
| 7.11 B Make inferences and convincing arguments based on data. 8.12.B Make predictions from scatterplots. | In solving problems, the student collects and organizes data, makes and interprets scatterplots, and models, predicts, and makes decisions and critical judgments. | b.1.B In solving problems, the student collects data and records results, organizes the data, makes scatterplots, fits the curves to the appropriate parent function, interprets the results, and proceeds to model, predict, and make decisions and critical judgements. |

| Specific Student Expectations |
|---|
| TLW solve problems using collected data. |
| TLW interpret data and make decisions based on constructed models. |

Instruction

| Strategies | Resources |
|---|---|
| PH-TE, p. 59, Kinesthetic Learning p. 12, Auditory Learning Use charts, tables, graphs, manipulatives, and calculators to discuss patterns, relationships, and reasonableness. Assesses students using multiple formats (student presentations, projects, observations, verbal statements, written responses). | PH Ch. 1 - 3, 5, 8 and 9 AI: S2-A23, 24 ACE: Appendix D |

Assessment

| Classroom | EOC/TAKS/Other Assessments |
|-----------|--|
| | EOC – Obj. 9; TAKS: Obj. 2 Spring 1999 Test, Item 6, 37 Fall 1998 Test, Item 14, 21 |

Additional Support

| Pre-AP Enrichment | Activities/Other |
|---|---|
| Create a problem situation; collect data & model through scatterplots. PH-TE, Technology, p. 240 | A-1, pp. 215-231 Going to Great Depths AR, pp. 80-144, 164 - 200 NCTM: 1, 2, 3, 5 |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|--|----------------|---|-------|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| b1(A) | The student describes independent and dependent quantities in functional relationships. | | | _____ | | | |
| b1(B) | The student gathers and records data, or uses data sets, to determine functional (systematic) relationships between quantities. | | | _____ | | | |
| b1(D) | The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, and equations and inequalities. | | | _____ | | | |
| b1(E) | The student interprets and makes inferences from functional relationships. | | | _____ | | | |
| b2(A) | The student identifies and sketches the general forms of linear ($y = x$) functions. | | | _____ | | | |
| b2(B) | For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. | | | _____ | | | |
| b2(C) | The student interprets situations in terms of given graphs or creates situations that fit given graphs. | | | _____ | | | |
| b2(D) | In solving problems, the student collects and organizes data, makes and interprets scatterplots, and models, predicts, and makes decisions and critical judgments. | | | _____ | | | |
| b3(B) | Given situations, the student looks for patterns and represents generalizations algebraically. | | | _____ | | | |
| c1(A) | The student determines whether or not given situations can be represented by linear functions. | | | _____ | | | |
| c1(B) | The student determines the domain and range values for which linear functions make sense for given situations. | | | _____ | | | |
| c1(C) | The student translates among and uses algebraic, tabular, graphical, or verbal descriptions of linear functions. | | | _____ | | | |
| c2(A) | The student develops the concept of slopes as rate of change and determines slopes from graphs, tables, and algebraic representations. | | | _____ | | | |
| c2(B) | The student interprets the meaning of slope and intercepts in situations using data, symbolic representations, or graphs. | | | _____ | | | |
| c2(C) | The student investigates, describes, and predicts the effects of change in m and b on the graph of $y=mx + b$. | | | _____ | | | |
| c2(D) | The student graphs and writes equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept. | | | _____ | | | |
| c2(E) | The student determines the intercepts of linear functions from graphs, tables, and algebraic representations. | | | _____ | | | |
| c2(F) | The student interprets and predicts the effects of changing slope and y-intercept in applied situations. | | | _____ | | | |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.A Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|---|---|
| 7.4A Generate formulas involving conversions, perimeter, circumference, area, volume, scaling. 7.4B Graph data to demonstrate relationships. 8.4 Generate different models from the same data. | The student describes independent and dependent quantities in functional relationships. | b.1.A For a variety of situations, the student identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations. |

| Specific Student Expectations |
|--|
| TLW describe the independent and dependent quantities using the correct terminology and notation. |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE, p. 85, Visual Learning Have students create a game where they match table values with a function and vice-versa | PH Ch. 2, 7 and 9 GTI Activity 8 AI: S2-A4 ACE: Appendix D |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – OBJ 1; TAKS: Obj. 1 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Analyze, compare, and contrast all the synonymous expressions (domain, range, independent, dependent, abscissa, ordinate, input, and output). | A-1, 1.1 (Variables and Functions) 1.2 (Valentine Day Idea); 2.1 (Identifying Patterns) AR, pp. 80 – 173, 184 – 200 NCTM: 2, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.D Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|---|
| 7.4A Generate formulas involving conversions, perimeter, area, circumference, volume, scaling. 7.4B Graph data to demonstrate relationships. 8.4 Generate different models for the same data. | The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities. | b.3.B The student use algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities. d.4.B The student relates representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions. |

| Specific Student Expectations |
|---|
| TLW use one method of representation to convert to other methods of representation. |

| Instruction | |
|--|---|
| Strategies | Resources |
| PH-TE, p. 320, Auditory Learning p. 320, Kinesthetic Learning Have students “match up” different forms of a relationship. Can be made into a game. | PH Ch. 1 - 10 GTI Activity 8, 18, 19, 20, 21 ACE: Appendix D, H |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 2; TAKS: Obj. 1 Spring 1999 #8, 12, 26 Fall 1998, #34 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Transfer from function rule to graph to table. | A-1, p. 1-66 AR, p. 80 – 173, 184 – 200 NCTM: 4, 5, 6, 10 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.1.E Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| 7.4A Generate formulas involving conversions, perimeter, area, circumference, volume, and scaling. 7.4B Graph data to demonstrate relationships. 8.4 Generate different models for the same data. | The student interprets and makes inferences from functional relationships. | b.3.A The student analyzes situations and formulates systems of equations or inequalities in two or more unknowns to solve problems. |

| Specific Student Expectations |
|--|
| TLW interpret data using real-world situations. |
| TLW make inferences from a given problem situation involving functional relationships. |

| Instruction | |
|--|---|
| Strategies | Resources |
| PH-TE, p. 327, Kinesthetic Learning p. 329, Tactile Learning Have students create a table and construct a graph using data they have gathered. | PH Ch. 1 – 3, 5, 7 - 10 GT II: 9 ACE: Appendix D |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 8 & 9; TAKS: Obj. 1 Fall 1998, #24 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| | A-1, 1.1 Variables and Functions; 1.2 Valentine Day Idea; 2.1 Identify Patterns AR, p. 80-173, 184 - 200 NCTM: 1, 2, 3, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.2.A Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| <p>7.7A Locate and name points using ordered pairs of integers on a coordinate plane.</p> <p>8.7.D Locate and name points using ordered pairs of rationals on a coordinate plane.</p> | <p>The student identifies and sketches the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions.</p> | <p>b.2.C The student connects the function notation of $y =$ and $f(x) =$.</p> <p>c.1.A The student identifies and sketches graphs of parent functions, including linear ($y = x$), quadratic ($y = x^2$), square root ($y = \sqrt{x}$), inverse ($y = 1/x$), exponential ($y = a^x$), and logarithmic ($y = \log_a x$) functions.</p> |

| Specific Student Expectations | |
|-------------------------------|---|
| TLW | identify the general form of linear and quadratic parent functions. |
| TLW | graph the function given the equation. |

| Instruction | |
|--|--|
| Strategies | Resources |
| <p>PH-TE, p. 92, Kinesthetic Learning p. 225 Visual Learning</p> <p>Use multiple strategies of students' choice. Use charts, tables, graphs, and manipulatives. Models instruction going from concrete to pictorial to abstract level.</p> | <p>PH Ch. 2, 5, 7, and 11 GT II: 13, 27 ACE: Appendix D</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 1; TAKS: Obj. 2</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| | <p>A-1, 1.1, p. 108-131, The Linear Parent Function. AR, p. 80- 144. NCTM: 1, 2, 5, 6, 8</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.2.D Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|---|--|
| <p>7.11B Make inferences and convincing arguments based on data.</p> <p>8.12.B Make predictions from scatterplots.</p> | <p>In solving problems, the student collects and organizes data, makes and interprets scatterplots, and models, predicts, and makes decisions and critical judgments.</p> | <p>b.1.B In solving problems, the student collects data and records results, organizes the data, makes scatterplots, fits the curves to the appropriate parent function, interprets the results, and proceeds to model, predict, and make decisions and critical judgements.</p> |

| Specific Student Expectations |
|---|
| <p>TLW solve problems using collected data.</p> <p>TLW interpret data and make decisions based on constructed models.</p> |

| Instruction | |
|--|---|
| Strategies | Resources |
| <p>PH-TE, p. 12, Auditory Learning p. 59, Kinesthetic Learning</p> <p>Use charts, tables, graphs, manipulatives, and calculators to discuss pattern, relationships, and reasonableness.</p> <p>Use multiple formats (student presentations, projects, observations, verbal statements, written responses).</p> | <p>PH Ch. 1 – 3, 5, 8 and 9 AI: S2-A23, 24 ACE: Appendix D</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 9; TAKS: Obj. 2 Spring 1999 Test, Item 6, 37 Fall 1998 Test, Item 14, 21</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Student creates own problem, models through graphs, tables & function rule & justify.</p> | <p>A-1, Have you lost your marbles? Going to great depth. AR, pp. 80-144, 164-200 NCTM: 1, 2, 4, 5, 6, 8, 10</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.3.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|---|
| 7.5A Solve equations with models and use symbols to record. 8.5B Use an algebraic expression to find any term in a sequence. | Given situations, the student looks for patterns and represents generalizations algebraically. | d.1.B The student relates representations of quadratic functions, such as algebraic, tabular, graphical, and verbal descriptions. |

| Specific Student Expectations |
|---|
| TLW evaluate given situations and determine pattern(s). TLW write algebraic expressions. |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE, p. 108, Tactile Learning p. 120, Visual/Auditory Learning | PH Ch. 1 - 10 ACE: Appendix D AI: S1-A6 Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 4, TAKS: Obj. 2 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Show patterns vertically, horizontally & as a function rule. | A-1, 1.2 (Valentine Day Idea); 2.1 (Identifying Patterns); (Show Me The Money); (Graphs & Tables); (Exponential Relationships). AR, pp. 80-144, 164 –173, 184 – 200. NCTM: 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # **c.1.A** **Grade Level:** **Algebra I** **Time Range:**

| Grade 7/8 | Algebra I | Algebra II |
|---|---|---|
| <p>7.11A Select, use and justify appropriate representations of collected data</p> <p>7.11B Make inferences and convincing arguments based on data</p> <p>8.12.B Make predictions from scatterplots</p> <p>8.12.C Gather information to make tables.</p> <p>8.13.B Discuss and understand positive, negative, and no correlation in scatterplots.</p> | <p>The student determines whether or not given situations can be represented by linear functions.</p> | <p>c.1A Identifies and sketches graphs of parent functions, including linear, quadratic, square root, exponential.</p> <p>e(6) Uses direct and inverse variation functions as models to make predictions in problem situations.</p> |
| Specific Student Expectations | | |
| <p>TLW analyze a graph to determine if the graph is linear.</p> <p>TLW analyze data in a table to determine if the table yields a linear function.</p> <p>TLW analyze a given equation to determine if the equation is linear.</p> | | |
| Instruction | | |
| Strategies | | Resources |
| <p>PH-TE, p. 74, Tactile Learning p. 75, Kinesthetic Learning Graphing calculator; linear regression</p> | | <p>PH Ch. 2 - 5 ACE: Appendix D</p> |
| Assessment | | |
| Classroom | | EOC/TAKS/Other Assessments |
| | | <p>EOC: Obj. 2, 3, and 4; TAKS: Obj. 3</p> |
| Additional Support | | |
| Pre-AP Enrichment | | Activities/Other |
| <p>Student should compare the change in independent variable to dependent variable.</p> | | <p>A-1, 4.1 (Bounce It); 2.1 (Out for a Stretch) AR, pp. 164 – 173, 184 – 200. NCTM: 1, 2, 5, 6</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.1.C Grade Level: Algebra I Time Range: _____

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| 7.5.B Formulate problems from equations 7.11.A Select, use and justify appropriate representations of connected data 7.11.B Make inferences and convincing arguments based on data 8.12.C Construct circle graphs, bar graphs, and histograms. 8.5 Generate different models for the same data. 8.12.B Make predictions from scatterplots. | The student translates among and uses algebraic, tabular, graphical, or verbal descriptions or linear functions. | b3(B) Use algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities. |

| Specific Student Expectations |
|--|
| TLW translate from a word problem into an equation. TLW translate the equation into a table. TLW translate the table into a graph. TLW translate from a given graph into an equation. TLW translate from a table into an equation. TLW translate from word problems into graphs |

| Instruction | |
|--|---|
| Strategies | Resources |
| PH-TE. p. 269, Visual Learning p. 271, Kinesthetic Learning Translate word problems into equation. Make table and graph. | PH Ch. 2, 3, 4, 5 and 6 ACE: Appendix D Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 3 & 4; TAKS Obj. 3 Fall 1998, Item #32, 36, 38, 39 Spring 1999, Item #17, 18 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Generate conclusions from tables. Write equations from standard form to slope-intercept form. | A-1; 2.1 (Out for A Stretch); 1.2(The y-intercept); Graphs and Tables. AR, pp.80-144. NCTM: 1, 2, 4, 5, 6, 8, 10 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.2.A Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| <p>7.11.B Make inferences and convincing arguments based on data.</p> <p>8.12.B Make predictions from scatterplots.</p> | <p>The student develops the concept of slope as rate of change and determines slopes from graphs, tables, and algebraic representations.</p> | <p>d.2.B Uses slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines, and special segments of triangles and other polygons.</p> |

| Specific Student Expectations |
|--|
| <p>TLW understands that slope is a rate of change.</p> <p>TLW find the slope from graphs.</p> <p>TLW find the slope from tables.</p> <p>TLW find the slope from algebraic relationships.</p> |

| Instruction | |
|--|---|
| Strategies | Resources |
| <p>PH-TE, p. 216, Tactile Learning p. 420, Auditory Learning p. 421, Visual Learning</p> <p>Have students come up with real-world examples illustrating slope (ex. Roof tops, staircases)</p> <p>Use a table to determine whether the relationship between sets of data is linear.</p> | <p>PH Ch. 5 and 9 GT II: 14 AI: S2-A5-9 ACE: Appendix D Resource pro and manipulative kit</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 2& 3; TAKS Obj. 3</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Interpret slope with descriptive language (positive, negative, increasing, decreasing) given graphs, tables, and function rule.</p> <p>Have students come up with real world examples illustrating slope—ex. Roof tops, stairs, etc.</p> | <p>A-1, 1.2 (The y-intercept); 1.3 (Exploring Rates of Change); 1.4 (Finite Changes). AR, pp. 80-144, 164 –173, 184-200. NCTM: 1, 2, 4, 5, 6, 8, 10</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.2.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|---|--|
| 7.7A Locate and name points using ordered pairs of integers on a coordinate plane 7.11B Make inferences & convincing arguments based on data 8.7.D Locate and name points using ordered pairs of rationals on a coordinate plane 8.12.B Making predictions from scatterplots. | The student interprets the meaning of slope and intercepts in situations using data, symbolic representations, or graphs. | c.6 Use direct and inverse variation models. b.3.A Formulate equations, d.3.A inequalities, or systems to solve problems modeled by functions. |

| Specific Student Expectations |
|--|
| <p>TLW analyze the rate of change between two relationships given a table.</p> <p>TLW determine the slope and y-intercept given the graph of line by using the definition of slope ($m = \text{rise/run}$).</p> <p>TLW determine the slopes of vertical and horizontal lines.</p> <p>TLW determine the slope given two points by using the</p> $m = \left(\frac{y_2 - y_1}{x_2 - x_1} \right)$ <p>TLW come up with the y-intercept given a point and the slope.</p> |

| Instruction | |
|--|---|
| Strategies | Resources |
| PH-TE, p. 231, Tactile Learning p. 231, Auditory Learning p. 231, Visual Learning | PH Ch. 5 AI: S2-A25, 26 ACE: Appendix D Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 2 & 3; TAKS Obj. |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| $\text{slope} = m = \frac{y_2 - y_1}{x_2 - x_1}; \frac{\Delta y}{\Delta x}; \frac{\text{rise}}{\text{run}}; \text{rate of change}$ | A-1, 1.3 (Exploring Rates of Change); 1.2 (The y-intercept); 1.4 (Finite Differences) NCTM: 1, 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.2.C Grade Level: Algebra I Time Range: _____

| Grade 7/8 | Algebra I | Algebra II |
|--|---|---|
| <p>7.11B Make inferences and convincing arguments based on data.</p> <p>8.12.B Make predictions from scatterplots.</p> | <p>The student investigates, describes, and predicts the effects of changes in m and b on the graph of $y = mx + b$.</p> | <p>c.1.B Extends parent functions with parameters such as m in $y = mx$ and describes parameter changes on the graph of parent functions.</p> <p>d.2.B Uses the parent function to investigate, describe, and predict the effects of changes in a, h, and k on the graphs of $y = a(x-h)^2 + k$ form of a function in applied and purely mathematical situations.</p> |

| Specific Student Expectations | |
|---|--|
| TLW understand that m (slope) will change the steepness of the line. | |
| TLW understand the b (y-intercept) will translate the line up or down. | |

| Instruction | |
|--|---|
| Strategies | Resources |
| <p>PH-TE, p. 227, Kinesthetic Learning p. 231, Tactile/Auditory/Visual Learning Have students translate the y-intercept and use the slope to draw the resulting line</p> | <p>PH Ch. 5 GT II: 15 AI: S2-A10, 11, 12 Resource pro and manipulative kit</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 1; TAKS – Obj. 3 Fall 1998, Item #3 Spring 1999, Item #7, 11</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Students generate equations given translations and different slopes.</p> | <p>NCTM: 2, 4, 5, 6</p> |

Mathematics Instructional Alignment Chart
Student Expectations

TEKS # c.2.D **Grade Level:** Algebra I **Time Range:**

| Grade 7/8 | Algebra I | Algebra II |
|--|---|---|
| 7.11.B Make inferences and convincing arguments based on data. | The student graphs and writes equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept. | d.1.C Determines a quadratic function from its root or a graph. |
| 8.12.B Make predictions from scatterplots. | | |

| Specific Student Expectations |
|--|
| <p>TLW graph and write equations of lines given two points. TLW graph and write equations of lines given a point and a slope. TLW graph and write equations of lines given a slope and y-intercept.</p> |

| Instruction | |
|--|--|
| Strategies | Resources |
| PH-TE, p. 231, Auditory Learning p. 237, Auditory Learning p. 269, Visual Learning Use floor tiles as coordinate plane and use students as points. Determine slope, y-intercept and write function. | PH Ch. 5 and 6 GT II: 17 AI: S2-A13, 21, 22 Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 2; TAKS: Obj. 3 Fall 1998, Item #36, 39, 40 Spring 1999, Item #20 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Utilize point-slope equation to generate standard form of linear equation. Emphasize rational values. | A-1, 1.3 (Exploring Rates of Change); 1.4 (Finite Differences) AR, pp. 80-144 NCTM: 1, 4, 5, 6, 8, 10 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.2.E Grade Level: Algebra I Time Range: _____

| Grade 7/8 | Algebra I | Algebra II |
|--|--|--|
| <p>7.7.A Locate and name points using ordered pairs of integers on a coordinate plane.</p> <p>8.7.D Locate and name points using ordered pairs of rationals on a coordinate plane.</p> | <p>The student determines the intercepts of linear functions from graphs, tables, and algebraic representations.</p> | <p>d.1.C Determines a quadratic function from its roots or graph. NOTE: First find the roots given a quadratic function.</p> |

| Specific Student Expectations |
|---|
| <p>TLW find the intercepts of linear functions from graphs.</p> <p>TLW find the intercepts of linear functions from tables.</p> <p>TLW find the intercepts of linear functions from algebraic representations.</p> |

| Instruction | |
|--|---|
| Strategies | Resources |
| <p>PH-TE, p. 232, Kinesthetic Learning p. 269, Visual Learning</p> | <p>PH Ch. 5 and 6 AI: S2-A14 Resource pro and manipulative kit</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 3 TAKS: OBJ. 3 Fall 1998, Item #35 Spring 1999, Item #14</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Identify intercepts as critical points.</p> | <p>AR, pp. 80-144 NCTM: 1, 2, 4, 5, 6, 8</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # c.2.F Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|---|---|
| <p>7.7.B Graph translations 7.9 Estimate measurements and solve problems with lengths, area, and volume 8.6.B Graph dilations, reflections and translations. 8.10.A Describe effect on perimeter and area when dimensions are changed. 8.6.B Describe effect on volume when dimensions are changed.</p> | <p>The student interprets and predicts the effects of changing slope and y-intercept in applied situations.</p> | <p>c.1.B Extends parent functions with parameters and describes parameter changes. d.2.B Investigate, describe, and predict effects of changes in a, h, and k on the graphs of $y = a(x - h)^2 + k$ form of a function. c.2.B Sketch graphs of conic sections by relating parameter changes in the equation to corresponding changes in the graph.</p> |
| Specific Student Expectations | | |
| <p>TLW analyze and describe effects caused by changed in parameters. TLW translate linear equations in order to find the new y-intercept. TLW predict the outcome of a graph when the slope or y-intercept changes.</p> | | |
| Instruction | | |
| Strategies | Resources | |
| <p>PH-TE, p. 301, Auditory Learning p. 225, Visual Learning p. 227, Kinesthetic Learning</p> | <p>PH Ch. 5 and 6 GT II: 16 Resource pro and manipulative kit</p> | |
| Assessment | | |
| Classroom | EOC/TAKS/Other Assessments | |
| | <p>EOC – Obj. 1; TAKS: Obj. 3</p> | |
| Additional Support | | |
| Pre-AP Enrichment | Activities/Other | |
| <p>Students are able to compare maximum and minimum values (justify).</p> | <p>AR, pp. 80 – 144. NCTM: 1, 2, 4, 5, 6, 8, 10</p> | |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|---|---|--------|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| d3(A) | The student uses patterns to generate the laws of exponents and applies them in problem-solving situations. | | | | — — | | |
| d3(C) | The student analyzes data and represents situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods. | | | | — — | | |
| D2(B) | The student uses the Pythagorean Theorem to solve real-life problems. | | | | — — | | |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.3.A Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|---|--|
| 7.2.F Select appropriate operations and justify selections. 7.2.G Determine reasonableness of solutions. 8.2.A Select and use appropriate operations and justify selection. 8.2.C Evaluate solutions for reasonableness. | The student uses patterns to generate laws of exponents and applies them in problem-solving situations. | f.3 For given contexts, the student determines the reasonable domain and range values of exponential and logarithmic functions, as well as interprets and determines the reasonableness of solutions to exponential and logarithmic equation and inequalities. |

| Specific Student Expectations |
|--|
| TLW demonstrate laws of exponents using patterns. |

| Instruction | |
|--|--|
| Strategies | Resources |
| PH-TE, p. 381, Kinesthetic Learning p. 386, Auditory Learning Use manipulatives and calculations to discuss patterns, relationships. Use correct mathematical language. | PH Ch. 8 GT I: 16 GT II: 12 ACE: 1-3, 1-4 Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| Consistently make statements and questions such as: What law did you use to simplify the statement? Is there another way of simplifying it? | EOC – Obj. 7; TAKS: Obj. 5 Spring 1999 Test, Item #32, 35 Fall 1998 Test, Item 17, 23, 28 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Work backwards to generate expressions involving exponents. Ex. $2^3 = 8$ or $8 = 2^3$ | NCTM: 1, 4, 5, 6, 8 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.3.C Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|---|--|
| 7.12.B Use and justify appropriate measures to describe a set of data 7.11.B Make inferences and convincing arguments based on data 8.12.A Select appropriate measure of central tendency to describe data. 8.12.B Make predictions from scatterplots. | The student analyzes data and represents situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods. | f.4 The student solves exponential and logarithmic equations and inequalities using graphs, tables, and algebraic methods. |

| Specific Student Expectations |
|--|
| TLW analyze situations involving exponential growth and decay using graphing calculators. TLW use a table on calculator and graph to see the difference of exponential, growth and decay. |

| Instruction | |
|--|---|
| Strategies | Resources |
| PH-TE, p. 369, Visual Learning p. 374, Kinesthetic Learning | PH Ch. 8 Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 7; TAKS: Obj. 5 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| | A-1, 3.1 (Exponential Relationship); Activity 3, (Radioactive Decay); 2.2 (Identifying More Patterns). AR, pp. 164 – 173, p. 184 – 200. NCTM: 1, 2, 4, 5, 6, 8, 10 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.2.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|--|--|
| 7.1.C Represent squares and square roots using geometric models. 7.6.B Use properties to classify shapes including triangles, quadrilaterals, pentagons, and circles. 8.7.B Use geometric concepts and properties to solve problems 8.9.A Use the Pythagorean Theorem | d.2.B Relate solutions to quadratic equations to the roots of their functions. | d.1.C Determines a quadratic function from its roots or graph. |
| Specific Student Expectations | | |
| TLW use quadratic equations to solve real-life problems. TLW identify rectangular areas as quadratic equations. | | |
| Instruction | | |
| Strategies | Resources | |
| PH-TE, p. 339, Visual Learning p. 344, Kinesthetic Learning | PH Ch. 7 and 10 | |
| Assessment | | |
| Classroom | EOC/TAKS/Other Assessments | |
| | EOC - Obj. 7; TAKS - Obj. 8 | |
| Additional Support | | |
| Pre-AP Enrichment | Activities/Other | |
| Apply Pythagorean Theorem using irrational numbers. | NCTM: 1, 2, 5, 6, 8, 10 | |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| c4(A) | The student analyzes situations and formulates systems of linear equations to solve problems. | | | | | | |
| c4(B) | The student solves systems of linear equations using concrete models, graphs, tables, and algebraic methods. | | | | | | |
| c4(C) | For given contexts, the student interprets and determines the reasonableness of solutions to systems of linear equations. | | | | | | |

Mathematics Instructional Alignment Chart Student Expectations

TEKS # c.4.A Grade Level: Algebra I Time Range: _____

| Grade 7/8 | Algebra I | Algebra II |
|---|--|---|
| <p>7.5.B Formulate problems from equations.</p> <p>8.5.A Estimate, find, and justify solutions to application problems.</p> | <p>The student analyzes situations and formulates systems to linear equations to solve problems.</p> | <p>b.3.A The student analyzes situations and formulates systems of equations or inequalities in two or more unknowns to solve problems.</p> |

| Specific Student Expectations |
|--|
| <p>TLW translate verbal expressions to algebraic expressions.</p> |

| Instruction | |
|--|--|
| Strategies | Resources |
| <p>PH-TE, p. 269, Visual Learning p. 271, Kinesthetic Learning</p> | <p>PH Ch. 6</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 4 and 8 TAKS - Obj. 4 Fall 1998, Item #2, 8, 12 Spring 1999, 33, 9, 24</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Choose the most appropriate method and justify.</p> | <p>A-1, 3.4 (Systems of Linear Equations and Inequalities. AR, pp. 145 – 162. NCTM: 1, 2, 4, 5, 6, 8, 10</p> |

Mathematics Instructional Alignment Chart
Student Expectations

TEKS # c.4.B

Grade Level: Algebra I

Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|--|---|
| 7.5.B Formulate problems from equations. | The student solves systems of linear equations using concrete models, graphs, tables, and algebraic methods. | b.3.B The student uses algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities. |
| 8.5.A Estimate, find, and justify solutions to application problems. | | |

| Specific Student Expectations |
|---|
| TLW use concrete models to demonstrate possible solutions. |
| TLW use graphing calculator to solve for point of intersection. |
| TLW use table on calculator to check on possible solutions. |
| TLW use algebraic methods:(substitution, linear combination, addition/subtraction) to solve systems of equations. |

| Instruction | |
|--|---|
| Strategies | Resources |
| PH-TE, p. 301, Kinesthetic Learning | PH Ch. 6 GT II AI: S2-A27, 28 ACE: Module 3 Activities/Other |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 4; TAKS - Obj. 4 Fall 1998, Item #11 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| In reference to real world applications have students justify meaning of intersection. | A-1, 3.4 (Systems of Linear Equations and Linear Inequalities). NCTM: 1, 2, 4, 5, 6, 8, 10 |

**ALGEBRA I
SCOPE AND SEQUENCE**

| TEKS | STUDENT EXPECTATIONS | GRADING PERIOD | | | | | |
|-------|---|----------------|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| b2(A) | The student identifies and sketches the general forms of quadratic ($y = x^2$) parent functions. | | | | | | |
| b4(A) | The student finds specific function values, simplifies polynomial expressions, transforms and solves equations, and factors as necessary in problem situations. | | | | | | |
| d1(A) | The student determines the domain and range values for which quadratic functions make sense for given situations. | | | | | | |
| d1(B) | The student investigates, describes, and predicts the effects of changes in a on the graph of $y = ax^2$. | | | | | | |
| d1(C) | The student investigates, describes, and predicts the effects of change in c on the graph of $y = x^2 + c$. | | | | | | |
| d1(D) | For problem situations, the student analyzes graphs of quadratic functions and draws conclusions. | | | | | | |
| d2(A) | The student solves quadratic equation using concrete models, tables, graphs, and algebraic methods. | | | | | | |
| d2(B) | The student relates the solutions of quadratic equations to the roots of their functions. | | | | | | |
| d3(B) | The student analyzes data and represents situations involving inverse variation using concrete models, tables, graphs, or algebraic methods. | | | | | | |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # b.2.A Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|--|--|
| <p>7.7.A Locate and name points using ordered pairs of integers on a coordinate plane.</p> <p>8.7.D Locate and name points using ordered pairs of rationals on a coordinate plane.</p> | <p>The student identifies and sketches the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions.</p> | <p>b.2.C The student connects the function notation of $y =$ and $f(x) =$.</p> <p>c.1.A The student identifies and sketches graphs of parent functions, including linear ($y = x$), quadratic ($y = x^2$), square root ($y = \sqrt{x}$), inverse ($y = 1/x$), exponential ($y = a^x$), and logarithmic ($y = \log_a x$) functions.</p> |

| Specific Student Expectations |
|--|
| <p>TLW identify the general form of linear and quadratic parent functions.</p> <p>TLW graph the function given the equation.</p> |

| Instruction | |
|--|---|
| Strategies | Resources |
| <p>PH-TE, p. 92, Kinesthetic Learning p. 225, Visual Learning Use multiple strategies of students choice. Use charts, tables, graphs, manipulatives. Models instruction going from concrete to pictorial to abstract level. Identify and sketch variations of the parent functions</p> | <p>PH Ch. 2, 5, and 7 GT II: 13, 27 ACE: Appendix D Resource pro and manipulative kit</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 1 TAKS: Obj. 2</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| | <p>A-1, 1.1 (The Linear Parent Function). AR, pp. 80 – 144. NCTM: 1, 2, 4, 5, 6</p> |

Mathematics Instructional Alignment Chart

Student Expectations

TEKS # b.4.A Grade Level: Algebra I Time Range: _____

| Grade 7/8 | Algebra I | Algebra II |
|--|---|---|
| <p>7.2.F Select appropriate operations and justify selection.</p> <p>8.2.A Select and use appropriate operations and justify selections.</p> | <p>The student finds specific function values, simplifies polynomial expression, transforms and solves equations, and factors as necessary in problem situations.</p> | <p>b.2.A The student uses tools including matrices, factoring, and properties of exponents to simplify expressions and transform and solve equations.</p> |

| Specific Student Expectations |
|--|
| <p>TLW solve functions with specific values. TLW simplify polynomials. TLW solve equations. TLW solve by factoring.</p> |

| Instruction | |
|---|--|
| Strategies | Resources |
| <p>PH-TE, p. 329, Kinesthetic/Auditory Learning</p> <p>Models instruction going from concrete to pictorial to abstract levels.</p> | <p>PH Ch. 3, 4, 5 and 10 GT I: 15, 30, 33, 35 GT II: 29 AI: S2-A29, 30, 31, 32, 33, 34 Resource pro and manipulative kit</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| <p>Use questions such as: How did you solve this problem? Explain your strategy. Explain how you found a solution in a different way. What are some patterns you noticed?</p> | <p>EOC – Obj. 6 TAKS: Obj. 2 Spring 1999 Test, Item 5, 15, 16, 29 Fall 1998 Test, Item, 1, 5, 6, 7</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Include rational numbers in polynomial expressions.</p> | <p>AR, pp. 80 – 173, 184 – 200. NCTM: 1, 2, 4, 5, 6, 8, 10</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.1.A Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| <p>7.5.A Solve equations with models and use symbols to record.</p> <p>8.4.A Estimate, find, and justify solutions to application problems.</p> | <p>The student determines the domain and range values for which quadratic functions make sense for given situations.</p> | <p>d.1.A For given contexts, the student determines the reasonable domain and range values of quadratic functions, as well as interprets and determines the reasonableness of solutions to quadratic equations and inequalities.</p> |

| Specific Student Expectations |
|--|
| <p>TLW determine the range from a table when domain is given.</p> <p>TLW given domain, find range on x, y table.</p> <p>TLW explain parameters for given real situations.</p> |

| Instruction | |
|--|--|
| Strategies | Resources |
| <p>PH-TE, p. 323, Tactile Learning p. 329, Visual/Tactile Learning Teacher demonstrates solving quadratic function using the graphing calculator, using table.</p> | <p>PH Ch. 7 GTII: 27 Resource pro and manipulative kit</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 1, 7 TAKS: Obj. 2 Spring 1999 Test, Item #32, 35 Fall 1998 Test, Item #17, 23, 28</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Find critical points (minimum, maximum values and intercepts).</p> | <p>NCTM: 1, 2, 4, 5, 6, 10</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.1.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| 7.7.b Graph translations. 8.6.b Graph dilations, reflections and translations. | The student investigates, describes, and predicts the effects of changes in a on the graph of $y = ax^2$. | d.2.B The student uses the parent function to investigate, describe, and predict the effects of changes in a, h, and k on the graphs of $y = a(x-h)^2 + k$ form of a function in applied and purely mathematical situations. |

| Specific Student Expectations |
|--|
| <p>TLW investigate the effect of having integers as coefficient of a in the parent equation of $y = ax^2$.</p> <p>TLW investigate the effect of having fractions as the coefficient of a in the parent equation of $y = ax^2$.</p> |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE, p. 351, Auditory Learning p. 318, Visual Learning | PH Ch. 7 GT II: 27 Resource pro and manipulative kit |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 1; TAKS - Obj. 5 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Explain verbally the changes in $y = ax^2$. | A-1, 1.2 (Transformations). NCTM: 1, 2, 4, 5, 6, 10 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.1.C Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|---|---|
| <p>7.7.b Graph translations.</p> <p>8.6.b Graph dilations, reflections and translations.</p> | <p>The student investigates, describes, and predicts the effects of changes in c on the graph of $y = x^2 + c$.</p> | <p>d.2.b The student uses the parent function to investigate, describe, and predict the effects of changes in a, h, and k on the graphs of $y = a(x-h)^2 + k$ form of a function in applied and purely mathematical situations.</p> |

| Specific Student Expectations |
|--|
| <p>TLW investigate and describe the changes in “c” on the graph if $y = x^2 + x$ by using a calculator.</p> |

| Instruction | |
|---|---|
| Strategies | Resources |
| <p>PH-TE, p. 323, Tactile Learning p. 339, Visual Learning Illustrations of graphs on overheads using different values of “c”.</p> | <p>PH Ch. 7 GT II: 27 Resource pro and manipulative kit</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| <p>Have students re-sketch a $y = x^2 + c$ equation starting with a new value of c and the corresponding graph using different c values.</p> | <p>EOC – Obj. 1; TAKS – Obj. 5</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| <p>Explain verbally the changes in $y = x^2 + c$</p> | <p>NCTM: 2, 4, 5, 6, 10</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.1.D Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|---|
| <p>7.5.A Solve equations with models and use symbols to record.</p> <p>8.5.A Estimate, find, and justify solutions to application problems.</p> | <p>For problem situations, the student analyzes graphs of quadratic functions and draws conclusions.</p> | <p>d.1.B The student relates representations of quadratic functions, such as algebraic, tabular, graphical, and verbal descriptions.</p> <p>d.3.A The student analyzes situations involving quadratic functions and formulates quadratic equations or inequalities to solve problems.</p> |

| Specific Student Expectations |
|--|
| <p>TLW analyze and graph quadratic functions to determine the maximum or minimum (vertex).</p> <p>TLW determine the number of solutions (roots) of a quadratic function by graphing.</p> |

| Instruction | |
|---|---|
| Strategies | Resources |
| <p>PH-TE, p. 91, Tactile Learning p. 322, Tactile Learning p. 499, Tactile Learning</p> | <p>PH Ch. 2, 7 and 10 GT II: 28</p> |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | <p>EOC – Obj. 9 TAKS: Obj. 5</p> |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| | <p>AR, pp. 164 – 173, 184 – 200 NCTM: 1, 2, 3, 5, 6, 10</p> |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.2.A Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|---|--|--|
| 7.11.B Making inferences and convincing arguments based on data. 7.4.A Generate formulas involving conversions, perimeter, circumference, area and volume and scaling. 8.12.B Make predictions from scatterplots. 8.4 Generate different models for the same data. | The student solves quadratic equations using concrete models, tables, graphs, and algebraic methods. | d.3.D The student solves quadratic equations and inequalities. |

| Specific Student Expectations | |
|---|--|
| TLW use algebra tiles to solve quadratic equation. TLW create and solve a quadratic equation from a table. TLW factor and solve a quadratic equation by algebraic methods. | |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE, p. 327, Kinesthetic Learning p. 339, Visual Learning The teacher uses examples from the newspaper or pictures of parabolas from magazines to write the quadratic equation. | PH Ch. 7, 9, 10 and 11 GT I: 31 |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 5 TAKS: Obj. 5 Spring 1999, Item #21, 25, 31, 19, 22 Fall 1998, Item #3, 4, 9, 10 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Quadratic formula and completing the square. | A-1, 2.2 (Identifying More Patterns); 1.1 (Quadratic Relationships) 2.2 (Quadratic Formula). NCTM: 2, 4, 5, 6, 10 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.2.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|---|--|
| 7.5.A Solve equations with models and use symbols to record. | The student relates the solutions of quadratic equations to the roots of their functions. | d.1.C The student determines a quadratic function from its roots or a graph. |
| 8.5.A Estimate, find, and justify solutions to application problems. | | |

| Specific Student Expectations |
|--|
| <p>TLW relate the solutions to the roots (zeros) or x-intercepts of a quadratic equation.</p> <p>TLW find and compare the roots of x-intercepts algebraically and graphically with calculator.</p> |

| Instruction | |
|---|--|
| Strategies | Resources |
| PH-TE, p. 491, Visual Learning p. 499, Tactile/Visual Learning | PH Ch. 7 and 10 |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – Obj. 5 TAKS: Obj. 5 Fall 1998, Item #9, 10 |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| Given the vertex & one root, student finds the other root. (line of symmetry, $x \neq 0$.) | A-1, 1.1 (Quadratic Relationships) NCTM: 2, 4, 5, 6 |

**Mathematics Instructional Alignment Chart
Student Expectations**

TEKS # d.3.B Grade Level: Algebra I Time Range:

| Grade 7/8 | Algebra I | Algebra II |
|--|--|--|
| 7.3.B Estimate and solve application problems involving proportional relationships. 8.3.A Compare and contrast proportional and non-proportional relationships. | The student analyzes data and represents situations involving inverse variation using concrete models, tables, graphs, or algebraic methods. | c.6 The student uses direct and inverse variation functions as models to make predictions in problem situations. |

| Specific Student Expectations |
|--|
| TLW interpret and analyze situations involving inverse variation using tables or graphs. |

| Instruction | |
|--|--|
| Strategies | Resources |
| PH-TE, p. 511, Visual /Tactile Learning p. 519, Tactile/Auditory Learning | PH Ch. 8 and 11 |
| Assessment | |
| Classroom | EOC/TAKS/Other Assessments |
| | EOC – not tested; TAKS –not tested |
| Additional Support | |
| Pre-AP Enrichment | Activities/Other |
| | AR, pp. 164 – 173, 184 – 200. NCTM: : 2, 3, 4, 5, 6, 10 |