Algebra I

Unit 1 – Connections to Algebra

Time: 15 days
Algebra I Objectives: 1, 2, 8 and 9

Objectives	Methods	Resources	Assessment
The student will: • Translate verbal expressions into mathematical expressions • Write expressions using exponents • Use the order of operations to evaluate expressions • Solve open sentences by performing arithmetic operations • Use tables to organize data • Use graphs to organize real-life data • Identify a function and make an input-output table for the function	• Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from <u>*Algebra With Pizzazz*</u> • Teacher-generated worksheet • Calculators	• Four quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test

Algebra I

Unit 2 – Properties of Real Numbers

Time: 17 days
Algebra I Objectives:
Curriculum Objectives: 1, 2, 8 and 9

Objectives	Methods	Resources	Assessment
The student will: • Graph and add integers on a number line • Add and subtract integers without using a number line • Compare rational numbers and write in increasing or decreasing order • Add and subtract rational numbers • Simplify expressions that contain rational numbers • Multiply and divide rational numbers • Organize data in a matrix • Add, subtract and multiply using matrices • Find the probability of an event • Find the odds of an event	• Problem solve steps for adding or subtracting integers • Observe and write the pattern for multiplying and dividing integers • Illustrate problems on the marker board • Do textbook exercises in class • Draw Venn diagrams to illustrate number relationships • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Number line on the wall and on the floor • Textbook: Algebra I Applications, Equations and Graphs, McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from _Algebra With Pizzazz_ • Teacher-generated worksheet • Calculators • Integer number line • Dice	• Four quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test

Algebra I

Unit 3 – Solving Linear Equations

Time: 14 days
Algebra I Objectives:
Curriculum Objectives: 1, 2, 3 and 9

Objectives	Methods	Resources	Assessment
The student will: • Solve equations with one step by using addition, subtraction, multiplication, or division • Solve equations involving more than one operation • Solve equations with the variable on both sides • Solve equations containing grouping symbols • Solve equations containing fractions or decimals • Solve equations containing more than one variable • Rewrite an equation in function form • Use ratios and rates to solve problems • Use percents to solve problems	• Write five steps for solving equations • Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs</u>, McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from _<u>Algebra With Pizzazz</u>_ • Teacher-generated worksheet • Calculators	• Four quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test

Algebra I

Unit 4 – Graphing Linear Equations and Functions

Time: 17 days
Algebra I Objectives:
Curriculum Objectives: 1, 2, 3, 5 and 9

Objectives	Methods	Resources	Assessment
The student will: • Plot points in a coordinate plane • Draw a scatter plot and make predictions • Graph a linear equation using a table or a list of values • Graph horizontal and vertical lines • Find the intercepts of the graph of a linear equation • Use intercepts to make a quick graph • Find the slope of a line using two points • Graph a linear equation in slope-intercept form • Identify when a relation is a function • Optional – write linear equations that represent direct variation	• Use the "T" model for quick intercepts • Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from <u>*Algebra With Pizzazz*</u> • Teacher-generated worksheet • Calculators • Individual dry erase boards and markers • Graph paper	• Three quizzes • Completion of homework • Selected graded worksheets • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test

Algebra I

Unit 5 – Writing Linear Equations

Time: 15 days
Algebra I Objectives:
Curriculum Objectives: 1, 2, 3, 5 and 9

Objectives	Methods	Resources	Assessment
The student will: • Use the slope-intercept form to write an equation of a line • Use slope and any point on a line to write a equation of the line • Write an equation of a line given two points on the line • Use point-slope form to write an equation of a line • Write a linear equation in standard form	• Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Number line on the wall • Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from *<u>Algebra With Pizzazz</u>* • Teacher-generated worksheet • Calculators • Individual dry erase boards and markers • Graph paper	• Two quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Final test

Algebra I

Unit 6 – Solving and Graphing Linear Inequalities

Time: 11 days
Algebra I Objectives:
Curriculum Objectives: 1, 3, 5, 8 and 9

Objectives	Methods	Resources	Assessment
The student will: • Graph linear inequalities in one variable • Solve one-step linear inequalities • Solve multi-step linear inequalities • Write, solve and graph compound inequalities • Solve absolute-value equations and inequalities • Graph a linear inequality in two variables • Make and use a stem-and-leaf plot to put data in order • Find the mean, median and mode of data • Draw a box-and-whisker plot	• Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from <u>*Algebra With Pizzazz*</u> • Teacher-generated worksheet • Calculators	• Four quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test

Algebra I

Unit 7 – Systems of Linear Equations and Inequalities

Time: 13 days
Algebra I Objectives:
Curriculum Objectives: 1, 3, 5, 6 and 9

Objectives	Methods	Resources	Assessment
The student will: • Solve a system of linear equations by graphing • Use substitution to solve a linear system • Use linear combinations to solve a system of linear equations • Identify linear systems as having one solution, no solution or infinitely many solutions • Solve a system of linear inequalities by graphing	• Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from *<u>Algebra With Pizzazz</u>* • Teacher-generated worksheet • Calculators • Graph paper • Colored pencils	• Four quizzes • Completion of homework • Selected graded homework • Packet of puzzle worksheets • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test

Algebra I

Unit 8 – Exponents and Exponential Functions

Time: 11 days
Algebra I Objectives:
Curriculum Objectives: 2 and 9

Objectives	Methods	Resources	Assessment
The student will: • Use properties of exponents to multiply exponential expressions • Evaluate powers that have zero and negative exponents • Use the division properties of exponents to evaluate powers and simplify expressions • Use scientific notation to represent numbers • Optional-write and use models for exponential growth • Optional-write and use models for exponential decay	• Illustrate why an exponent of zero is one and why negative exponents make a fraction by using division • Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from _Algebra With Pizzazz_ • Teacher-generated worksheet • Calculators	• Three quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test

Algebra I

Unit 9 – Quadratic Equations and Functions

Time: 11 days
Algebra I Objectives:
Curriculum Objectives: 3, 4, 5, 7 and 9

Objectives	Methods	Resources	Assessment
The student will: • Evaluate and approximate square roots • Solve a quadratic equation by finding square roots • Use properties of radicals to simplify radicals • Sketch the graph of a quadratic function • Solve a quadratic equation graphically • Use the quadratic formula to solve a quadratic equation • Optional-use the discriminant to find the number of solutions of a quadratic equation • Optional-sketch the graph of a quadratic inequality	• Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Overhead projector and graphing transparencies • Practice worksheets from McDougal Littell Algebra I resource boo Worksheets from _Algebra With Pizzazz_ • Teacher-generated worksheet • Calculators • Graph paper	• Two quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test • Optional extra credit graphing project

Algebra I

Unit 10 – Polynomials and Factoring

Time: 21 days
Algebra I Objectives:
Curriculum Objectives: 3, 4, 5 and 9

Objectives	Methods	Resources	Assessment
The student will: • Add and subtract polynomials • Multiply two polynomials • Use special product patterns for the product of a sum and a difference and for the square of a binomial • Solve a polynomial equation in factored form • Factor a quadratic expression of the form x^2+bx+c • Factor a quadratic expression of the form ax^2+bx+c • Solve quadratic equations by factoring • Use special product patterns to factor quadratic polynomials • Use the distributive property to factor a polynomial	• Teach the ARCH method for factoring trinomials • Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from <u>*Algebra With Pizzazz*</u> • Teacher-generated worksheet • Calculators	• Four quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Mid-chapter test • Final test • Optional extra credit graphing project

Algebra I

Unit 11 – Rational Equations and Functions

Time: 16 days
Algebra I Objectives:
Curriculum Objectives: 3, 4, 6 and 9

Objectives	Methods	Resources	Assessment
The student will: • Solve proportions • Use equations to solve percent problems • Simplify a rational expression • Multiply and divide rational expressions • Add and subtract rational expressions that have like and unlike denominators • Divide a polynomial by a monomial or by a binomial factor • Use polynomial long division • Solve rational equations • Optional-use direct and inverse variation	• Illustrate problems on the marker board • Do textbook exercises in class • Work with partners on problem-solving activities • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from *<u>Algebra With Pizzazz</u>* • Teacher-generated worksheet • Calculators	• Two quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Final test

Algebra I

Unit 12 – Radicals and Connections to Geometry

Time: Optional
Algebra I Objectives:
Curriculum Objectives: 7 and 9

Objectives	Methods	Resources	Assessment
The student will: • Evaluate and graph a function involving square roots • Add, subtract, multiply and divide radical expressions • Solve a radical equation • Solve a quadratic equation by completing the square • Use the Pythagorean theorem and its converse • Find the distance between two points in a coordinate plane • Find the midpoint between two points in a coordinate plane • Use the sine, cosine and tangent of an angle	• Illustrate problems on the marker board • Do textbook exercises in class • Have students work and explain problems on the marker board • Five-Minute Check covering previous topics	• Textbook: <u>Algebra I Applications, Equations and Graphs,</u> McDougal Littell • Practice worksheets from McDougal Littell Algebra I resource book • Worksheets from <u>*Algebra With Pizzazz*</u> • Teacher-generated worksheet • Calculators	• Two quizzes • Completion of homework • Selected graded homework • Participation in class activities • Answering questions during class work • Five-Minute Checks • Final test