<table>
<thead>
<tr>
<th>SB Activity</th>
<th>Video(s)</th>
</tr>
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</table>
| **Activity 1**  
*Investigating Patterns*  
1-1 Learning Targets:  
- Identify patterns in data.  
- Use tables, graphs, and expressions to model situations.  
- Use expressions to make predictions.  
1-2 Learning Targets:  
- Use patterns to write expressions.  
- Use tables, graphs, and expressions to model situations.  
**Algebraic Expressions**  
- Treating units algebraically and dimensional analysis  
- Writing simple algebraic expressions  
- Writing algebraic expressions  
- Writing algebraic expressions word problem  
- Evaluating an expression example  
- Evaluating an expression using substitution  
- Expression terms, factors, and coefficients |
| **Activity 2**  
*Solving Equations*  
2-1 Learning Targets:  
- Use the algebraic method to solve an equation.  
- Write and solve an equation to model a real-world situation.  
2-2 Learning Targets:  
- Write and solve an equation to model a real-world situation.  
- Interpret parts of an expression in terms of its context.  
2-3 Learning Targets:  
- Solve complex equations with variables on both sides and justify each step in the solution process.  
- Write and solve an equation to model a real-world situation.  
2-4 Learning Targets:  
- Identify equations that have no solution.  
- Identify equations that have infinitely many solutions.  
**The “Why” of Algebra: Equation Basics**  
- Why we do the same thing to both sides: Simple equations  
- Why we do the same thing to both sides: Multi-step equations  
- Representing a relationship with a simple equation  
- One-step equation intuition  
**Simple Equations**  
- Simple equations of the form $ax = b$  
- Simple equations of the form $x/a = b$  
- Simple equations of the form $x + a = b$  
- Simple equations: examples involving a variety of forms  
**Equations with Variable on Both Sides**  
- Solving two-step equations  
- Example: two-step equations  
- Adding and subtracting from both sides of an equation  
- Dividing from both sides of an equation  
- Example: two-step equation with numerator $x$ |
many solutions.

2-5 Learning Targets:
- Solve literal equations for a specified variable.
- Use a formula that has been solved for a specified variable to determine an unknown quantity.

### More Complex Equations

<table>
<thead>
<tr>
<th>Topics</th>
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<tbody>
<tr>
<td>Solving a more complicated equation</td>
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<tr>
<td>Variables on both sides</td>
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<tr>
<td>Example 1: Variables on both sides</td>
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<td>Example 2: Variables on both sides</td>
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<tr>
<td>Solving equations with the distributive property</td>
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<td>Solving equations with the distributive property 2</td>
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### Equations with No Solutions or Infinitely Many Solutions

<table>
<thead>
<tr>
<th>Topics</th>
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<tbody>
<tr>
<td>Equation special cases</td>
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<tr>
<td>Number of solutions to linear equations</td>
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<tr>
<td>Number of solutions to linear equations ex 2</td>
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<tr>
<td>Number of solutions to linear equations ex 3</td>
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<tr>
<td>Rearrange formulas to isolate specific variables</td>
</tr>
</tbody>
</table>

### Solving Literal Equations for a Variable

<table>
<thead>
<tr>
<th>Topics</th>
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<tbody>
<tr>
<td>Solving for a variable</td>
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<tr>
<td>Solving for a variable 2</td>
</tr>
<tr>
<td>Example: Solving for a variable</td>
</tr>
</tbody>
</table>

### Activity 3

#### Solving Inequalities

3-1 Learning Targets:
- Understand what is meant by a solution of an inequality.
- Graph solutions of inequalities on a number line.

3-2 Learning Targets:
- Write inequalities to represent real-world situations.
- Solve multi-step inequalities.

3-3 Learning Targets:
- Graph compound inequalities.
- Solve compound inequalities.

### One-Step Inequalities

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<thead>
<tr>
<th>Topics</th>
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<tbody>
<tr>
<td>Constructing and solving a one-step inequality</td>
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<tr>
<td>One-step inequality involving addition</td>
</tr>
<tr>
<td>Inequalities using addition and subtraction</td>
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<tr>
<td>Multiplying and dividing with inequalities</td>
</tr>
<tr>
<td>Multiplying and dividing with inequalities example</td>
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</tbody>
</table>

### Multi-Step Inequalities

<table>
<thead>
<tr>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructing and solving a two-step inequality</td>
</tr>
<tr>
<td>Constructing, solving a two-step inequality example</td>
</tr>
<tr>
<td>Solving a two-step inequality</td>
</tr>
<tr>
<td>Multi-step inequalities</td>
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<tr>
<td>Multi-step inequalities 2</td>
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<tr>
<td>Multi-step inequalities 3</td>
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</tbody>
</table>

### Compound Inequalities

<table>
<thead>
<tr>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compound inequalities</td>
</tr>
<tr>
<td>Compound inequalities 2</td>
</tr>
<tr>
<td>Compound inequalities 3</td>
</tr>
<tr>
<td>Compound inequalities 4</td>
</tr>
</tbody>
</table>
### Activity 4
**Absolute Value Equations and Inequalities**

4-1 Learning Targets:
- Understand what is meant by a solution of an absolute value equation.
- Solve absolute value equations.

4-2 Learning Targets:
- Solve absolute value inequalities.
- Graph solutions of absolute value inequalities.

### Absolute Value Equations
- Absolute value equations
- Absolute value equations
- Absolute value equations 1
- Absolute value equations example 1
- Absolute value equation example 2
- Absolute value equation example
- Absolute value equation with no solution

### Absolute Value Inequalities
- Absolute value inequalities
- Absolute value inequalities example 1
- Absolute inequalities 2
- Absolute value inequalities example 3

### Activity 5
**Functions and Function Notation**

5-1 Learning Targets:
- Represent relations and functions using tables, diagrams, and graphs.
- Identify relations that are functions.

5-2 Learning Targets:
- Describe the domain and range of a function.
- Find input-output pairs for a function.

5-3 Learning Targets:
- Use and interpret function notation.
- Evaluate a function for specific values of the domain.

### Relations and Functions
- What is a function?
- Relations and functions
- Recognizing functions (example 1)

### Domain and Range
- Domain and range of a relation
- Domain and range of a function
- Domain and range 1

### Function Notation
- Evaluating with function notation
- Understanding function notation (example 1)
- Understanding function notation (example 2)
- Understanding function notation (example 3)

### Activity 6
**Graphs of Functions**
### Activity 7
**Graphs of Functions**

#### 7-1 Learning Targets:
- Graph a function given a table.
- Write an equation for a function given a table or graph.

#### 7-2 Learning Targets:
- Graph a function describing a real-world situation and identify and interpret key features of the graph.

#### 7-3 Learning Targets:
- Given a verbal description of a function, make a table and a graph of the function.
- Graph a function and identify and interpret key features of the graph.

### Activity 8
**Transformations of Functions**

#### 8-1 Learning Targets:
- Identify the effect on the graph of replacing \( f(x) \) by \( f(x) + k \).
- Identify the transformation used to produce one graph from another.

### Activity 9
**Rates of Change**

#### 9-1 Learning Targets:
- **Slope**
  - Slope of a line
  - Slope of a line 2
- Determine the slope of a line from a graph.
- Develop and use the formula for slope.

9-2 Learning Targets:
- Calculate and interpret the rate of change for a function.
- Understand the connection between rate of change and slope.

9-3 Learning Targets:
- Show that a linear function has a constant rate of change.
- Understand when the slope of a line is positive, negative, zero, or undefined.
- Identify functions that do not have a constant rate of change and understand that these functions are not linear.

**Activity 10**
**Linear Models**
10-1 Learning Targets:
- Write and graph direct variation.
- Identify the constant of variation.
10-2 Learning Targets:
- Write and graph indirect variations.
- Distinguish between direct and indirect variation.
10-3 Learning Targets:
- Write, graph, and analyze a linear model for a real-world situation.
- Interpret aspects of a model in terms of the real-world situation.
10-4 Learning Targets:
- Write the inverse function for a linear function.
- Determine the domain and range of an inverse function.

**Variation**
- Direct and inverse variation
- Recognizing direct and inverse variation
- Proportionality constant for direct variation
- Direct variation 1
- Direct variation application

**Inverse Functions**
- Introduction to function inverses
- Function inverse example 1
- Function inverses example 2
- Function inverses example 3

**Activity 11**
**Arithmetic Sequences**
### Arithmetic Sequences

**11-1 Learning Targets:**
- Identify sequences that are arithmetic sequences.
- Use the common difference to determine a specified term of an arithmetic sequence.

**11-2 Learning Targets:**
- Develop an explicit formula for the nth term of an arithmetic sequence.
- Use an explicit formula to find any term of an arithmetic sequence.
- Write a formula for an arithmetic sequence given two terms or a graph.

**11-3 Learning Targets:**
- Use function notation to write a general formula for the nth term of an arithmetic sequence.
- Find any term of an arithmetic sequence written as a function.

**11-4 Learning Targets:**
- Write a recursive formula for a given arithmetic sequence.
- Use a recursive formula to find the terms of an arithmetic sequence.

### Activity 12

**Forms of Linear Functions**

**12-1 Learning Targets:**
- Write the equation of a line in slope-intercept form.

### Slope-Intercept Form

- Constructing linear equations to solve word problems
- Graphing a line in slope-intercept form
- Converting to slope-intercept form
- Multiple examples of constructing linear equations in...
• Use slope-intercept form to solve problems.

12-2 Learning Targets:
• Write the equation of a line in point-slope form.
• Use point-slope form to solve problems.

12-3 Learning Targets:
• Write the equation of a line in standard form.
• Use the standard form of a linear equation to solve problems.

12-4 Learning Targets:
• Describe the relationship among the slopes of parallel lines and perpendicular lines.
• Write an equation of a line that contains a given point and is parallel or perpendicular to a given line.

Activity 13
Equations from Data
13-1 Learning Targets:
• Use collected data to make a scatter plot.
• Determine the equation of a trend line.

13-2 Learning Targets:
• Use a linear model to make predictions.
• Use technology to perform a linear regression.

13-3 Learning Targets:
• Use technology to perform quadratic and exponential regressions, and then make predictions.
- Compare and contrast linear, quadratic, and exponential regressions.

## Activity 14
**Piecewise-Defined Linear Functions**

### 14-1 Learning Targets
- Use function notation and interpret statements that use function notation in terms of a context.
- Calculate the rate of change of a linear function presented in multiple representation.

### 14-2 Learning Targets
- Write linear equations in two variables given a table of values, a graph, or a verbal description.
- Determine the domain and range of a linear function, determine their reasonableness, and represent them using inequalities.

### 14-3 Learning Targets
- Evaluate a function at specific inputs within the function’s domain.
- Graph piecewise-defined functions.

## Activity 15
**Comparing Equations**

### 15-1 Learning Targets:
- Write a linear equation given a graph or a table.
- Analyze key features of a function given its graph.

### 15-2 Learning Targets:
- Graph and analyze functions on the same coordinate plane.
- Write inequalities to represent real-world situations.

### 15-3 Learning Targets:
- Write a linear equation given a verbal description.
- Graph and analyze functions on the same coordinate plane.

## Activity 16
**Graphing Linear Inequalities**

## Writing and Graphing Equations
- Exploring linear relationships
- Linear equation word problem
- Graphs of linear equations
- Interpreting linear graphs
- Interpreting a graph exercise example
- Application problem with graph
### Inequalities in Two Variables

**16-1 Learning Targets:**
- Write linear inequalities in two variables.
- Read and interpret the graph of the solutions of a linear inequality in two variables.

**16-2 Learning Targets:**
- Graph on a coordinate plane the solutions of a linear inequality in two variables.
- Interpret the graph of the solutions of a linear inequality in two variables.

### Activity 17

**Solving Systems of Linear Equations**

**17-1 Learning Targets:**
- Solve a system of linear equations by graphing.
- Interpret the solution of a system of linear equations.

**17-2 Learning Targets:**
- Solve a system of linear equations using a table or the substitution method.
- Interpret the solution of a system of linear equations.

**17-3 Learning Targets:**
- Use the elimination method to solve a system of linear equations.
- Write a system of linear equations to model a situation.

**17-4 Learning Targets:**
- Explain when a system of linear equations has no solution.
- Explain when a system of linear equations has infinitely many solutions.

**17-5 Learning Targets:**
- Determine the number of solutions of a system of equations.
- Classify a system of linear equations as independent or dependent and as consistent or inconsistent.

### Solving Systems by Graphing

**17-1 Learning Targets:**
- Solve a system of linear equations by graphing.
- Interpret the solution of a system of linear equations.

**17-2 Learning Targets:**
- Solve a system of linear equations using a table or the substitution method.
- Interpret the solution of a system of linear equations.

**17-3 Learning Targets:**
- Use the elimination method to solve a system of linear equations.
- Write a system of linear equations to model a situation.

**17-4 Learning Targets:**
- Explain when a system of linear equations has no solution.
- Explain when a system of linear equations has infinitely many solutions.

**17-5 Learning Targets:**
- Determine the number of solutions of a system of equations.
- Classify a system of linear equations as independent or dependent and as consistent or inconsistent.
### Activity 18

**Solving Systems of Linear Inequalities**

18-1 Learning Targets:
- Determine whether an ordered pair is a solution of a system of linear inequalities.
- Graph the solutions of a system of linear inequalities.

18-2 Learning Targets:
- Identify solutions to systems of linear inequalities when the solution region is determined by parallel lines.
- Interpret solutions of systems of linear inequalities.

### Activity 19

**Exponent Rules**

19-1 Learning Targets:
- Develop basic exponent properties.
- Simplify expressions involving exponents.

19-2 Learning Targets:
- Understand what is meant by negative and zero powers.
- Simplify expressions involving exponents.

19-3 Learning Targets:
- Simplify expressions involving exponents.

---

### Unit 4: Exponents, Radicals, and Polynomials

#### Basic Exponent Properties

- Exponent properties 1
- Exponent properties 2

#### Negative and Zero Powers

- Introduction to negative exponents
- Thinking more about negative exponents
- More negative exponent intuition

#### Additional Properties of Exponents

- Products and exponents raised to an exponent properties
- Negative and positive exponents
- Exponent properties 3
- Exponent properties 4
- Exponent properties 5
- Exponent properties 6
### Activity 20
**Operations with Radicals**

20-1 Learning Targets:
- Write and simplify radical expressions.
- Understand what is meant by a rational exponent.

20-2 Learning Targets:
- Add radical expressions.
- Subtract radical expressions.

20-3 Learning Targets:
- Multiply and divide radical expressions.
- Rationalize the denominator of a radical expression.

### Operations with Radicals

- Radical equivalent to rational exponents
- Radical equivalent to rational exponents 2
- Multiply and simplify a radical expression 1
- Simplifying square roots
- Radical expressions with higher roots
- Subtracting and simplifying radicals
- Simplifying cube roots

### Activity 21
**Geometric Sequences**

21-1 Learning Targets:
- Identify geometric sequences and the common ratio in a geometric sequence.
- Distinguish between arithmetic and geometric sequences.

21-2 Learning Targets:
- Write a recursive formula for a geometric sequence.
- Write an explicit formula for a geometric sequence.
- Use a formula to find a given term of a geometric sequence.

### Geometric Sequences

- Geometric sequences introduction

### Activity 22
**Exponential Functions**

22-1 Learning Targets:
- Understand the definition of an exponential function.
- Graph and analyze exponential growth functions.

22-2 Learning Targets:
- Describe characteristics of exponential decay functions.
- Graph and analyze exponential decay functions.

22-3 Learning Targets:
- Describe key features of graphs of exponential functions.

### Exponential Functions

- Graphing exponential functions
- Exponential growth functions
- Understanding linear and exponential models
- Constructing linear and exponential functions from data
• Compare graphs of exponential and linear functions.

### Activity 23
**Modeling with Exponential Functions**

- **23-1 Learning Targets:**
  - Create an exponential function to model compound interest.

- **23-2 Learning Targets:**
  - Create an exponential function to fit population data.
  - Interpret values in an exponential function.

### Examples of Exponential Functions
- Introduction to compound interest
- Exponential growth and decay word problems
- Decay of cesium 137 example
- Modeling ticket fines with exponential function

### Activity 24
**Adding and Subtracting Polynomials**

- **24-1 Learning Targets:**
  - Identify parts of a polynomial.
  - Identify the degree of a polynomial.

- **24-2 Learning Targets:**
  - Use algebra tiles to add polynomials.
  - Add polynomials algebraically.

- **24-3 Learning Targets:**
  - Subtract polynomials algebraically.

### Adding and Subtracting Polynomials
- Terms coefficients and exponents in a polynomial
- Adding polynomials
- Polynomials 2
- Example: Adding polynomials with multiple variables
- Subtracting polynomials
- Subtracting polynomials with multiple variables
- Addition and subtraction of polynomials
- Adding and subtracting polynomials 1
- Adding and subtracting polynomials 2
- Adding and subtracting polynomials 3

### Activity 25
**Multiplying Polynomials**

- **25-1 Learning Targets:**
  - Use a graphic organizer to multiply expressions.
  - Use the Distributive Property to multiply expressions.

- **25-2 Learning Targets:**
  - Multiply binomials.
  - Find special products of binomials.

- **25-3 Learning Targets:**
  - Use a graphic organizer to multiply polynomials.
  - Use the Distributive Property to multiply polynomials.

### Multiplying Polynomials
- Multiplying binomials and polynomials
- Multiplying binomials word problems
- FOIL for multiplying binomials
- FOIL method for multiplying binomials example 2

### Special Products of Binomials
- Square a binomial
- Squaring a binomial
- Squaring a binomial example 2
- Special products of binomials
- Multiplying binomials to get difference of squares

### Activity 26
**Factoring by Greatest Common Factor**
### Factoring

**26-1 Learning Targets:**
- Identify the GCF of the terms in a polynomial.
- Factor the GCF from a polynomial.

**26-2 Learning Targets:**
- Factor a perfect square trinomial.
- Factor a difference of two squares.

### Activity 27

**Factoring Trinomials**

**27-1 Learning Targets:**
- Use algebra tiles to factor trinomials of the form \(x^2 + bx + c\).
- Factor trinomials of the form \(x^2 + bx + c\).

**27-2 Learning Targets:**
- Factor trinomials of the form \(ax^2 + bx + c\) when the GCF is 1.
- Factor trinomials of the form \(ax^2 + bx + c\) when the GCF is not 1.

### Activity 28

**Simplifying Rational Expressions**

**28-1 Learning Targets:**
- Simplify a rational expression by dividing a polynomial by a monomial.
- Simplify a rational expression by dividing out common factors.

**28-2 Learning Targets:**
- Divide a polynomial of degree one or two by a polynomial of degree one or two.
- Express the remainder of polynomial division as a rational expression.

**28-3 Learning Targets:**
- Multiply rational expressions.
- Divide rational expressions.

**28-4 Learning Targets:**
- Identify the least common multiple (LCM) of algebraic expressions.
- Add and subtract rational expressions.

### Simplifying Rational Expressions

**Simplifying rational expressions introduction**
- Simplifying rational expressions 1
- Simplifying rational expressions 2
- Simplifying rational expressions 3

### Multiplying & Dividing Rational Expressions

**Multiplying and simplifying rational expressions**
- Multiplying and dividing rational expressions 1
- Multiplying and dividing rational expressions 2
- Multiplying and dividing rational expressions 3

### Adding & Subtracting Rational Expressions

**Adding and subtracting rational expressions**
- Adding and subtracting rational expressions 2
- Adding and subtracting rational expressions 3
- Subtracting rational expressions
- Simplifying first for subtracting rational expressions
### Unit 5: Quadratic Functions

#### Activity 29
*Introduction to Quadratic Functions*

**29-1 Learning Targets:**
- Model a real-world situation with a quadratic function.
- Identify quadratic functions.
- Write a quadratic function in standard form.

**29-2 Learning Targets:**
- Graph a quadratic function.
- Interpret key features of the graph of a quadratic function.

#### Graphing Parabolas
- Graphing a parabola with a table of values
- Graphing a parabola by finding the roots and vertex
- Graphing a parabola using roots and vertex
- Graphing a parabola in vertex form

#### Vertex and Axis of Symmetry
- Parabola vertex and axis of symmetry
- Finding the vertex of a parabola example
- Multiple examples graphing parabolas using roots and vertices

#### Activity 30
*Graphing Quadratic Functions*

**30-1 Learning Targets:**
- Graph translations of the quadratic parent function.
- Identify and distinguish among transformations.

**30-2 Learning Targets:**
- Graph vertical stretches and shrinks of the quadratic parent function.
- Identify and distinguish among transformations.

**30-3 Learning Targets:**
- Graph reflections of the quadratic parent function.
- Identify and distinguish among transformations.
- Compare functions represented in different ways.

#### Activity 31
*Solving Quadratic Equations by Graphing and Factoring*

**31-1 Learning Targets:**
- Use a graph to solve a quadratic equation.
- Use factoring to solve a quadratic equation.
- Describe the connection between the zeros of a quadratic function and the x-
intercepts of the function's graph.

31-2 Learning Targets:
- Identify the axis of symmetry of the graph of a quadratic function.
- Identify the vertex of the graph of a quadratic function.

31-3 Learning Targets:
- Use the axis of symmetry, the vertex, and the zeros to graph a quadratic function.
- Interpret the graph of a quadratic function.

### Activity 32
**Algebraic Methods of Solving Quadratic Equations**

32-1 Learning Targets:
- Solve quadratic equations by the square root method.
- Provide examples of quadratic equations having a given number of real solutions.

32-2 Learning Targets:
- Solve quadratic equations by completing the square.
- Complete the square to analyze a quadratic function.

32-3 Learning Targets:
- Derive the quadratic formula.
- Solve quadratic equations using the quadratic formula.

32-4 Learning Targets:
- Choose a method to solve a quadratic equation.
- Use the discriminant to determine the number of real solutions of a quadratic equation.

32-5 Learning Targets:
- Use the imaginary unit i to write complex numbers.
- Solve a quadratic equation that has complex solutions.

### The Square Root Method
Solving quadratic equations by square roots
- Example: Solving simple quadratic

### Completing the Square
Solving quadratic equations by completing the square
- Example 1: Completing the square
- Example 2: Completing the square
- Example 3: Completing the square

### The Quadratic Formula
How to use the quadratic formula
- Example: Quadratics in standard form
- Example 1: Using the quadratic formula
- Example 2: Using the quadratic formula
- Example 3: Using the quadratic formula
- Example 4: Applying the quadratic formula
- Example 5: Using the quadratic formula

### Choosing a Method and Using the Discriminant
Discriminant of quadratic equations
- Discriminant for types of solutions for a quadratic

### Complex Solutions
Example: Complex roots for a quadratic

### Activity 33
**Fitting Data with Quadratic and Exponential Functions**
### Applying Quadratic Equations

**33-1 Learning Targets:**
- Write a quadratic function to fit data.
- Use a quadratic model to solve problems.

**33-2 Learning Targets:**
- Solve quadratic equations.
- Interpret the solutions of a quadratic equation in a real-world context.

### Activity 34

**Modeling with Functions**

**34-1 Learning Targets:**
- Construct linear, quadratic, and exponential models for data.
- Graph and interpret linear, quadratic, and exponential functions.

**34-2 Learning Targets:**
- Identify characteristics of linear, quadratic, and exponential functions.
- Compare linear, quadratic, and exponential functions.

**34-3 Learning Targets:**
- Compare piecewise-defined, linear, quadratic, and exponential functions.
- Write a verbal description that matches a given graph.

### Activity 35

**Systems of Equations**

**35-1 Learning Targets:**
- Write a function to model a real-world situation.
- Solve a system of equations by graphing.

**35-2 Learning Targets:**
- Write a system of equations to model a real-world situation.
- Solve a system of equations algebraically.

### Unit 6: Probability and Statistics

**Activity 36**

**Measures of Center and Spread**

**36-1 Learning Targets:**
- Interpret differences in center and

---

**Comparing models to fit data**

**Comparing exponential and quadratic models**

**Comparing models to fit data**

**Comparing exponential and quadratic models**

**Comparing exponential and quadratic models**

**Constructing linear and exponential functions from data**

**Constructing linear and exponential functions from graph**

**Systems of nonlinear equations 1**

**Systems of nonlinear equations 2**

**Systems of nonlinear equations 3**

**Non-linear systems of equations 1**

**Non-linear systems of equations 2**

**Non-linear systems of equations 3**

**Statistics intro: Mean, median and mode**

**Finding mean, median and mode**

**Exploring the mean and median**
spread of data in context.

- Compare center and spread of two or more data sets.
- Determine the mean absolute deviation of a set of data.

36-2 Learning Targets:

- Interpret differences in center and spread of data in context.
- Compare center and spread of two or more data sets.
- Determine the mean absolute deviation of a set of data.

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<th>Box and Whisker</th>
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<td><em>Box and whisker plot</em></td>
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<tr>
<td>37-1 Learning Targets:</td>
<td><em>Constructing a box and whisker plot</em></td>
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<tr>
<td>• Construct representations of univariate data in a real-world context.</td>
<td><em>Finding the range and mid-range</em></td>
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<tr>
<td>• Describe characteristics of a data distribution, such as center, shape, and spread, using graphs and numerical summaries.</td>
<td><em>Introduction to the normal distribution</em></td>
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<tr>
<td>• Compare distributions, commenting on similarities and differences among them.</td>
<td></td>
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<td>37-2 Learning Targets:</td>
<td></td>
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<tr>
<td>• Use modified box plots to summarize data in a way that shows outliers.</td>
<td></td>
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<tr>
<td>• Compare distributions, commenting on similarities and differences among them.</td>
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<td><em>Constructing a scatter plot</em></td>
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<td>38-1 Learning Targets:</td>
<td><em>Correlation and causality</em></td>
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<tr>
<td>• Describe a linear relationship between two numerical variables in terms of direction and strength.</td>
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</tr>
<tr>
<td>• Use the correlation coefficient to describe the strength and direction of a linear relationship between two numerical variables.</td>
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<tr>
<td>38-2 Learning Targets:</td>
<td></td>
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<tr>
<td>• Calculate correlation.</td>
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<tr>
<td>• Distinguish between correlation and causation.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity 39</th>
<th>Line of Best-fit</th>
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</thead>
<tbody>
<tr>
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</table>
**The Best-Fit Line**

39-1 Learning Targets:
- Describe the linear relationship between two numerical variables using the best-fit line.
- Use the equation of the best-fit line to make predictions and compare the predictions to actual values.

39-2 Learning Targets:
- Use technology to determine the equation of the best-fit line.
- Describe the linear relationship between two numerical variables using the best-fit line.
- Use residuals to investigate whether a given line is an appropriate model of the relationship between numerical variables.

39-3 Learning Targets:
- Interpret the slope of the best-fit line in the context of the data.
- Distinguish between scatter plots that show a linear relationship and those where the relationship is not linear.

39-4 Learning Targets:
- Create a residual plot given a set of data and the equation of the best-fit line.
- Use residuals to investigate whether a line is an appropriate description of the relationship between numerical variables.

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**Activity 40**

**Bivariate Data**

40-1 Learning Targets:
- Summarize bivariate categorical data in a two-way frequency table.
- Interpret frequencies and relative frequencies in two-way tables.

40-2 Learning Targets:
- Interpret frequencies and relative frequencies in two-way tables.
- Recognize and describe patterns of association in two-way tables.

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**Two-way Frequency Tables**

- Two-way frequency tables and Venn diagrams
- Two-way relative frequency tables
- Interpreting two way tables

**Categorical Data**

- Analyzing trends in categorical data