

Connections to the Common Core State Standards

Lesson	Content Standards Addressed: Expressions and Equations (EE), Functions (F), Statistics and Probability (SP)	Mathematical Practices (MP) Implied
Patterns and T-Charts: The Rocket Pattern	6.EE.2A. Write, read, and evaluate expressions in which letters stand for numbers. A. Write expressions that record operations with numbers and with letters standing for numbers. B. Evaluate expressions at specific values of their variables. 6.EE.A.4. Identify when two expressions are equivalent. 6.EE.C.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another.	MP1. Make sense of problems and persevere in solving them. MP3. Construct viable arguments and critique the reasoning of others.
Functions and Graphing: Guess My Rule	6.EE.1. Write and evaluate numerical expressions involving whole-number exponents. 6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers. A. Write expressions that record operations with numbers and with letters standing for numbers. B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient). C. Evaluate expressions at specific values of their variables. 6.EE.A.4. Identify when two expressions are equivalent. 6.EE.B.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics.
Functions and Graphing: Graphing on the Coordinate Plane	8.FA.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics.
Surprising Squares	6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers. A. Write expressions that record operations with numbers and with letters standing for numbers. B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient). C. Evaluate expressions at specific values of their variables. 6.EE.A.3. Apply the properties of operations to generate equivalent expressions. 6.EE.A.4. Identify when two expressions are equivalent. 7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	MP1. Make sense of problems and persevere in solving them. MP2. Reason abstractly and quantitatively. MP3. Construct viable arguments and critique the reasoning of others. MP4. Model with mathematics.

	A. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers.	
Personalized Patterns	<p>6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).</p> <p>C. Evaluate expressions at specific values of their variables.</p> <p>6.EE.A.3. Apply the properties of operations to generate equivalent expressions.</p> <p>6.EE.A.4. Identify when two expressions are equivalent.</p> <p>6.EE.C.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p> <p>7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities</p> <p>A. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers.</p> <p>8.FA.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p>	<p>MP1. Make sense of problems and persevere in solving them.</p> <p>MP2. Reason abstractly and quantitatively.</p> <p>MP3. Construct viable arguments and critique the reasoning of others.</p> <p>MP4. Model with mathematics.</p>
Go Figure!	<p>6.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).</p> <p>C. Evaluate expressions at specific values of their variables.</p> <p>6.EE.A.3. Apply the properties of operations to generate equivalent expressions.</p> <p>6.EE.A.4. Identify when two expressions are equivalent.</p> <p>6.EE.B.5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.</p> <p>6.EE.B.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.</p>	<p>MP1. Make sense of problems and persevere in solving them.</p> <p>MP2. Reason abstractly and quantitatively.</p> <p>MP3. Construct viable arguments and critique the reasoning of others.</p> <p>MP4. Model with mathematics.</p> <p>MP7. Look for and make use of structure.</p>

Lesson	Content Standards Addressed: Expressions and Equations (EE), Functions (F), Statistics and Probability (SP)	Mathematical Practices (MP) Implied
	<p>6.EE.B.7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.</p> <p>7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>A. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q and r are specific rational numbers.</p>	
Bulging Backpacks	<p>6.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).</p> <p>C. Evaluate expressions at specific values of their variables.</p> <p>6.EE.A.3. Apply the properties of operations to generate equivalent expressions.</p> <p>6.EE.A.4. Identify when two expressions are equivalent.</p> <p>6.EE.B.5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.</p> <p>6.EE.B.7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.</p> <p>6.EE.C.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p> <p>6.SP.A.1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.</p> <p>6.SP.A.2. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.</p> <p>8.SP.A.1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.</p>	<p>MP1. Make sense of problems and persevere in solving them.</p> <p>MP2. Reason abstractly and quantitatively.</p> <p>MP3. Construct viable arguments and critique the reasoning of others.</p> <p>MP4. Model with mathematics.</p> <p>MP5. Use appropriate tools strategically.</p> <p>MP6. Attend to precision.</p>

<p>Who Finishes When?</p>	<p>6.EE.B.5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.</p> <p>6.EE.B.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.</p> <p>6.EE.B.7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.</p> <p>6.EE.C.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.</p> <p>7.RP.A.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</p> <p>7.RP.A.2. Recognize and represent proportional relationships between quantities.</p> <p style="padding-left: 20px;">C. Represent proportional relationships by equations.</p> <p>7.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems.</p> <p>7.EE.A.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.</p> <p>8.EE.B.5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.</p> <p>8.EE.C.8. Analyze and solve pairs of simultaneous linear equations.</p> <p style="padding-left: 20px;">A. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.</p> <p>8.FA.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p> <p>8.FA.2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</p> <p>8.FB.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</p> <p>8.FB.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.</p>	<p>MP1. Make sense of problems and persevere in solving them.</p> <p>MP2. Reason abstractly and quantitatively.</p> <p>MP3. Construct viable arguments and critique the reasoning of others.</p> <p>MP4. Model with mathematics.</p> <p>MP5. Use appropriate tools strategically.</p> <p>MP6. Attend to precision.</p>
---------------------------	---	--

Lesson	Content Standards Addressed: Expressions and Equations (EE), Functions (F), Statistics and Probability (SP)	Mathematical Practices (MP) Implied
Stretching Slinkies	<p>6.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).</p> <p>C. Evaluate expressions at specific values of their variables.</p> <p>6.EE.B.7. Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.</p> <p>7.RP.A.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</p> <p>7.EE.B.3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p> <p>7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>A. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p> <p>8.EE.C.7. Solve linear equations in one variable.</p> <p>B. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.</p> <p>8.F.A.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p> <p>8.F.A.2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</p> <p>8.F.B.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</p>	<p>MP1. Make sense of problems and persevere in solving them.</p> <p>MP2. Reason abstractly and quantitatively.</p> <p>MP3. Construct viable arguments and critique the reasoning of others.</p> <p>MP4. Model with mathematics.</p> <p>MP5. Use appropriate tools strategically.</p> <p>MP6. Attend to precision.</p> <p>MP7. Look for and make use of structure.</p>

	<p>8.SP.A.2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.</p> <p>8.SP.A.3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.</p>	
Condo Challenge	<p>6.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).</p> <p>C. Evaluate expressions at specific values of their variables.</p> <p>6.EE.A.3. Apply the properties of operations to generate equivalent expressions.</p> <p>6.EE.B.6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.</p> <p>7.RP.A.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</p> <p>7.EE.A.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7.EE.A.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.</p> <p>7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>A. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q and r are specific rational numbers.</p> <p>8.F.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p>	<p>MP1. Make sense of problems and persevere in solving them.</p> <p>MP2. Reason abstractly and quantitatively.</p> <p>MP3. Construct viable arguments and critique the reasoning of others.</p> <p>MP4. Model with mathematics.</p> <p>MP7. Look for and make use of structure.</p>

Lesson	Content Standards Addressed: Expressions and Equations (EE), Functions (F), Statistics and Probability (SP)	Mathematical Practices (MP) Implied
The Window Problem	<p>6.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient).</p> <p>C. Evaluate expressions at specific values of their variables.</p> <p>6.EE.A.3. Apply the properties of operations to generate equivalent expressions.</p> <p>6.EE.A.4. Identify when two expressions are equivalent.</p> <p>7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>A. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers.</p> <p>8.F.A.1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.</p> <p>8.F.A.2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</p> <p>8.F.A.3. Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.</p> <p>8.F.B.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.</p> <p>8.F.B.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear).</p>	<p>MP1. Make sense of problems and persevere in solving them.</p> <p>MP2. Reason abstractly and quantitatively.</p> <p>MP3. Construct viable arguments and critique the reasoning of others.</p> <p>MP4. Model with mathematics.</p>