EE Expressions and Equations

- **6.EE.A Apply and extend previous understandings of arithmetic to algebraic expressions.**
  - **6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.**
    - Write multiplication expressions using exponents (6-D.1)
    - Evaluate exponents (6-D.2)
    - Write powers of ten with exponents (6-D.3)
    - Find the missing exponent or base (6-D.4)
    - Exponents with decimal bases (6-D.5)
    - Exponents with fractional bases (6-D.6)
  - **6.EE.A.2 Write, read, and evaluate expressions in which letters stand for numbers.**
    - **6.EE.A.2.a Write expressions that record operations with numbers and with letters standing for numbers.**
      - Write variable expressions: one operation (6-Y.1)
      - Write variable expressions: two operations (6-Y.2)
    - **6.EE.A.2.b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, and coefficient); view one or more parts of an expression as a single entity.**
      - Sort factors of numerical expressions (6-E.13)
      - Identify terms and coefficients (6-Y.8)
      - Sort factors of variable expressions (6-Y.9)
    - **6.EE.A.2.c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).**
      - Evaluate numerical expressions one step at a time (6-O.)
      - Evaluate numerical expressions involving whole numbers (6-O.3)
      - Identify mistakes involving the order of operations (6-O.4)
      - Evaluate numerical expressions involving decimals (6-O.7)
      - Evaluate numerical expressions involving fractions (6-O.10)
      - Convert between Celsius and Fahrenheit (6-T.10)
      - Evaluate variable expressions with whole numbers (6-Y.4)
      - Evaluate multi-variable expressions (6-Y.5)
      - Evaluate variable expressions with decimals, fractions, and mixed numbers (6-Y.6)
      - Evaluate variable expressions: word problems (6-Y.7)
  - **6.EE.A.3 Apply the properties of operations to generate equivalent expressions.**
    - Multiply using the distributive property (6-Y.13)
    - Factor using the distributive property (6-Y.14)
    - Write equivalent expressions using properties (6-Y.16)

- o **6.EE.A.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).**
  - Identify equivalent expressions using strip models (6-Y.10)
  - Identify equivalent expressions I (6-Y.18)
  - Identify equivalent expressions II (6-Y.19)
- **6.EE.B Reason about and solve one-variable equations and inequalities.**
  - o **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.**
    - Does x satisfy an equation? (6-Z.1)
    - Which x satisfies an equation? (6-Z.2)
    - Solutions to inequalities (6-AA.1)
  - o **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.**
    - Write variable expressions: word problems (6-Y.3)
  - o **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.**
    - Model and solve equations using algebra tiles (6-Z.5)
    - Write and solve equations that represent diagrams (6-Z.6)
    - Solve one-step addition and subtraction equations with whole numbers (6-Z.7)
    - Solve one-step multiplication and division equations with whole numbers (6-Z.8)
    - Solve one-step equations with whole numbers (6-Z.9)
    - Solve one-step addition and subtraction equations with decimals, fractions, and mixed numbers (6-Z.10)
    - Solve one-step multiplication and division equations with decimals, fractions, and whole numbers (6-Z.11)
    - Solve one-step addition and subtraction equations: word problems (6-Z.12)
    - Solve one-step multiplication and division equations: word problems (6-Z.13)
    - Write a one-step equation: word problems (6-Z.14)
    - Solve one-step equations: word problems (6-Z.15)
  - o **6.EE.B.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.**
    - Graph inequalities on number lines (6-AA.2)
    - Write inequalities from number lines (6-AA.3)
    - Write and graph inequalities: word problems (6-AA.)
    - One-step inequalities: word problems (6-AA.6)
    - Solve and graph one-step addition and subtraction inequalities (6)
    - Solve and graph one-step multiplication and division inequalities with positive numbers (6)
    - Solve and graph one-step multiplication and division inequalities with rational numbers (6)

- **6.EE.C Represent and analyze quantitative relationships between dependent and independent variables.**
    - **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.**
        - Identify independent and dependent variables in tables and graphs (6-BB.2)
        - Write an equation from a graph using a table (6-BB.3)
        - Identify independent and dependent variables: word problems (6-BB.4)
        - Find a value using two-variable equations (6-BB.5)
        - Find a value using two-variable equations: word problems (6-BB.6)
        - Solve word problems by finding two-variable equations (6-BB.7)
        - Complete a table for a two-variable relationship (6-BB.8)
        - Write a two-variable equation from a table (6-BB.9)
        - Write a two-variable equation (6-BB.10)
        - Identify the graph of an equation (6-BB.11)
        - Complete a table and graph a two-variable equation (6-BB.12)
        - Graph a two-variable equation (6-BB.13)
        - Interpret a graph: word problems (6-BB.14)