Unit 2a-Numeric and Algebraic Expressions

Content Area: **Math**
Course(s): **Math 6**
Time Period: **MP1-2**
Length: **Weeks 9-10 and 1-2 Envision Mathematics Topic 3**
Status: **Published**

Essential Questions

- What are expressions and how can they be written and evaluated?

Big Ideas

- Understand and represent exponents.
- Find greatest common factor or least common multiple.
- Write and evaluate numerical and algebraic expressions.
- Generate equivalent expressions and simplify algebraic expressions.

CSDT Technology Integration

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.

8.1.8.NI.3: Explain how network security depends on a combination of hardware, software, and practices that control access to data and systems.

Activity:

Tech-Desmos-Equivalent Expressions-Students sort cards to strengthen their understanding of equivalent expressions. In particular, this activity uses visual representations of algebraic expressions to help students see that expressions are equivalent when they correctly count the same thing.

Enduring Understandings

Expressions and Equations

6.EE.2 [M] Write, read, and evaluate expressions in which letters stand for numbers.

6.EE.2a [M] Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as 5 – y.

6.EE.2b 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. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.

6.EE.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.

6.EE.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). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.

6.EE.5 [M] 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.

6.EE.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.

6.EE.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. Students may reason and solve one-variable equations and inequalities. Sample question, If the temperature at sea level is 20℃, what is the temperature at 100 m above sea level? Clarification statements: As altitude increases, temperature decreases. With every 100 meters, the temperature drops by an average of 1℃. Students may reason and solve one-variable equations and inequalities. Sample question, If the temperature at sea level is 20℃, what is the temperature at 100 m above sea level? Clarification statements: As altitude increases, temperature decreases. With every 100 meters, the temperature drops by an average of 1℃.

Mathematical Pracatices Focus

1. Make sense of problems and persevere in solving them. Lesson 3,4,6,7 and page 157

2. Reason abstractly and quantitatively. Lesson 1,4, and page 157

3. Construct viable arguments and critique the reasoning of others. Lesson 1,2,3,5,6,7, and page 157

4. Model with mathematics. Lesson 3,4,5, and page 157

5. Use appropriate tools strategically. and page 157

6. Attend to precision. Lesson 3,7

7. Look for and make use of structure. Lesson 1,2,3,4,5,6,7 and page 157

8. Look for and express regularity in repeated reasoning. Lesson 1,2,6 and page 157