Grade: 6 FCPS 2025-2026 Math Grade 6 Topic 3

6th Grade Topic 3: Numeric and Algebraic Expressions	Estimate Time Frame: 25 days
Essential Standards: 6.EE.2, 6.EE.3 Supporting Standards: 6.NS.4, 6.EE.1, 6.EE.4 Assessment Resource: enVision Topic 3 and Formative Assessment Lesson (FAL): Laws of Arithmetic	

FCPS Supporting Links	Additional Supporting Links
Pacing Guide 6th Grade Topic 3 Standards Resource with Sample Formative Assessments enVision 6th Grade Topic 3 Standards Crosswalk Resource FCPS P-12 Mathematics Guidance Document FCPS Achievement & Trauma-Informed Strategies in the Classroom	Kentucky Academic Standards KSA Blueprint Target of the Standards - conceptual, procedural & application Three-Reads Routine Notice and Wonder Routine **MILC Resources Topic 3: Numeric and Algebraic Expressions** ***enVision Teacher Guide: page 116A to 116D for specific Topic 3 Focus-Coherence-Rigor***

Big Ideas
Apply and extend previous understandings of arithmetic to algebraic expressions.

Essential Questions	Common Preconceptions/Misconceptions
What are expressions, and how can they be evaluated?	When using the distributive property, some students may multiply the first term in the parentheses but forget to do the same to the second term. Using Algeblocks or Algebra Tiles for a 15-minute mini-lesson is helpful in modeling the distributive property. **Essential skills to clarity:** • Variables can be used as unique unknown values or as quantities that vary. • Exponential notation is a way to express repeated products of the same number. • Algebraic expressions may be used to represent and generalize mathematical problems, and real-life situations. • Properties of numbers can be used to simplify and evaluate expressions.

	• Algebraic properties can create equivalent expressions.	
Standards for Mathematical Practices	**Kentucky Interdisciplinary Literacy Practices (KILP)**	
MP.1. Make sense of problems and persevere in solving them. **MP.2. Reason abstractly and quantitatively.** **MP.3. Construct viable arguments and critique the reasoning of others.** **MP.4. Model with mathematics.** MP.5. Use appropriate tools strategically. MP.6. Attend to precision. **MP.7. Look for and make use of structure.** **MP.8. Look for and express regularity in repeated reasoning.** ***enVision Teacher Guide: page 116E for specific Topic 3 Math Practice suggestions***	1. Recognize that text is anything that communicates a message. 2. Employ, develop, and refine schema to understand and create text. 3. View literacy experiences as transactional, interdisciplinary and transformational. 4. Utilize receptive and expressive language arts to better understand self, others, and the world. **5. Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.** **6. Collaborate with others to create new meaning.** **7. Utilize digital resources to learn and share with others.** **8. Engage in specialized, discipline-specific literacy practices.** **9. Apply high level cognitive processes to think deeply and critically about text.** 10. Develop a literacy identity that promotes lifelong learning. *Incorporating texts into math instruction fosters interdisciplinary learning for a more engaging educational experience.*	
Essential Standards	**Sample Learning Intentions & Success Criteria**	**HQIR/Resource Considerations**
Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.		
KY.6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers. ☐**Conceptual** ☐**Procedural** ❑ Application a. Write expressions that record operations with numbers and with letters standing for numbers. ☐**Conceptual** ☐**Procedural** ❑ Application	We are learning to write and read algebraic expressions. • I can use variables and operations to write an algebraic expression to represent a given situation. • I can identify and read the parts of an expression, including sum, difference, term, product, factor, coefficient, or quotient. • I can identify terms with grouping symbols	• Topic 3 Lesson 3-1 • Topic 3 Lesson 3-3 • Topic 3 Lesson 3-4 • Topic 3 Lesson 3-5 • 3-Act Task Topic 3: The Field Trip • Brainingcamp Task (Lesson 3-3) "How Can I Rewrite and Expression?" • Brainingcamp Task

Clarifications: Express the calculation “y less than 5” as 5 – y. b. Identify parts of an expression using mathematical terms (sums, term, product, factor, quotient, coefficient); view one or more parts of an expression in a single entity. ☐ **Conceptual** ☐ **Procedural** ❑ Application Clarifications: 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. c. Evaluate expressions for specific values of their variables, including values that are non-negative rational numbers. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). ❑Conceptual ☐ **Procedural** ❑ Application Clarifications: Use the formulas $V = s^3$ and $SA = 6s^2$ to find the volume and surface area of a cube with sides of length s = 1/2 meter. Coherence KY.5.OA.2→KY.6.EE.2 **MP.1, MP.3, MP.4, KILP.1, KILP.2, KILP.9** *Supporting Standard: KY.6.EE.1 & KY.6.EE.4*	as a single term and more than one term. We are learning to evaluate algebraic expressions. • I can evaluate an algebraic expression by substituting the variable with a number. • I can evaluate an algebraic expression with non-negative rational numbers. • I can apply the order of operations when evaluating algebraic expressions, including whole number exponents. • I can evaluate expressions from formulas used in real-world problems.	(Lesson 3-4) “Algebraic Expression?” • Brainingcamp Task (Lesson 3-5) “Triangle and Hexagon Trains” • enVision Language Support Handbook • Formative Assessment Lesson (FAL): Laws of Arithmetic
KY.6.EE.3 Apply the properties of operations to generate	We are learning to generate equivalent	• Topic 3 Lesson 3-2

equivalent expressions. ☐ **Conceptual** ☐ **Procedural** ❑ Application Clarifications: Using Associative, Commutative and Distributive properties to generate equivalent expressions. Coherence KY.5.OA.2→KY.6.EE.3→KY.7.EE.1 **MP.7, MP.8, KILP.6, KILP.7** *Supporting Standards: KY.6.NS.4 & KY.6.EE.4*	expressions using the properties of operations.. • I can use the associative property to write equivalent expressions**.** • I can use the commutative property to write equivalent expressions. • I can use the distributive property to write equivalent expressions. • I can combine like terms to write equivalent expressions.	• Topic 3: Let's Investigate! Dance Numbers (replaces examples 2 and 4 from lesson 3-2) • Lesson 3-6 • Topic 3: Let's Investigate! Equali-tile (replaces examples 1 and 2 from lesson 3-6) • Lesson 3-7 • Brainingcamp Task (Lesson 3-2) "Factor or Multiple?" • Brainingcamp Task (Lesson 3-2) "Distributive Property" • Brainingcamp Task (Lesson 3-6) "Equivalent Expressions?" • Brainingcamp Task (Lesson 3-7) "Algebraic Expressions Simplified?" • enVision Language Support Handbook

Attending to the Standards for Mathematical Practice

Students connect symbols to their numerical referents. They understand exponential notation as repeated multiplication of the base number. Students realize 3^2 is represented as 3 × 3, with a product of 9 and explain how 3^2 differs from 3 × 2, where the product is 6. Students determine the meaning of a variable within a real-life context (MP.2). Students look for structure in expressions by deconstructing them into a sequence of operations. They make use of structure to interpret an expression's meaning in terms of the quantities represented by the variables. In addition, students make use of structure by creating equivalent expressions using properties. For example, students write $6x$ as $x + x + x + x + x + x$, $4x + 2x$, $3(2x)$, or other equivalent expressions (MP.7). Students look for regularity in a repeated calculation and express it with a general formula (MP.8). Students work with variable expressions while focusing more on the patterns that develop than the actual numbers that the variable represents. For example, students move from an expression such as 3 + 3 + 3 + 3 = 4 · 3 to the general

form $m + m + m + m = 4 \cdot m$, or $4m$. Similarly, students move from expressions such as $5 \cdot 5 \cdot 5 \cdot 5 = 5^4$ to the general form $m \cdot m \cdot m \cdot m = m^4$. These are especially important when moving from the general form back to a specific value for the variable (MP.6).

Supporting Standards

KY.6.EE.1 Write and evaluate numerical expressions involving whole-number exponents. **MP.2, MP.6**
Interpret an exponent of size n as a repetitive multiplication expression of the base multiplied by itself n times; use the standard order of operations using exponents to evaluate numerical expressions. **Coherence KY.5.NBT.2→KY.6.EE.1→KY.8.EE.1**

Conceptual **Procedural** ❑ Application

KY.6.EE.4 Identify when two expressions are equivalent when the two expressions name the same number regardless of which value is substituted into them. **MP.2, MP.3, MP.7**

Conceptual ❑ Procedural ❑ Application

KY.6.NS.4 Use the distributive property to express a sum of two whole numbers 1 – 100 with a common factor as a multiple of a sum of two whole numbers with no common factor. **MP.8, Coherence KY.4.OA.4→KY.6.NS.4**

❑ Conceptual **Procedural** ❑ Application

Vocabulary

algebraic expression - A type of math expression that has at least one variable and at least one operation.
base - The number in a power that is repeatedly multiplied.
coefficient - A constant that multiplies a variable.
composite number - A number that has more than two factors.
equivalent expressions - Have the same value.
evaluate - To find the value.
exponent - Tells how many times the base is used as a factor.
expression - a finite combination of symbols well-formed according to the rules applicable in the context at the end.
formula - A rule that uses symbols to relate two or more quantities.
greatest common factor (GCF) - The greatest number that is a factor of two or more numbers.
least common multiple (LCM) - The least multiple, not including 0, common to both numbers.
like terms - Terms that have the same variable part or constants.

numerical expression - A mathematical phrase that includes numbers and at least one operation.
power - A number that can be written using exponents.
simplify - Use properties of operations to write equivalent expressions that have no like terms and no parentheses.
substitution - To evaluate an algebraic expression, replace the variable with a number.
term - Each part of an expression that is separated by a plus sign or a minus sign.
variable - a letter used to represent a number value in an expression or an equation. EX: "x" in x+2=4

*****Disclaimer: Success Criteria is the evidence students must produce to demonstrate learning. This example is not comprehensive.
** Mathematical Practices (A.MP.1- 8) should be evidenced at some point throughout each unit, depending on the explored tasks. It is important to note that MP. 2 should support learning in every lesson.
******* Modeling Standards: Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (★). The star symbol sometimes appears on the heading for a group of standards; in that case, it should be understood to apply to *all* standards in that group.