Grade: 7   FCPS 2025-2026 Math Grade 7 Topic 4

7th Grade Topic 4 : Generate Equivalent Expressions	Estimate Time Frame: 15 days

Essential Standards: 7.EE.1, 7.EE.2
Supporting Standards: 7.NS.3

Assessment Resource: enVision Topic 4

FCPS Supporting Links	Additional Supporting Links
Pacing Guide	Kentucky Academic Standards
7th Grade Topic 4 Standards Resource with Sample	KSA Blueprint
Formative Assessments	Target of the Standards – conceptual, procedural & application
enVision 7th Grade Topic 4 Standards Crosswalk Resource	Three-Reads Routine
FCPS P-12 Mathematics Guidance Document	Notice and Wonder Routine
FCPS Achievement & Trauma-Informed Strategies in the Classroom	**MILC Resources Topic 4: Generate Equivalent Expressions**
	enVision Teacher Guide: page 190A to 190D for specific Topic 4 Focus-Coherence-Rigor

Big Ideas

Use properties of operations to generate equivalent expressions.
Solve real-life and mathematical problems using numerical and algebraic expressions.

Essential Questions	Common Preconceptions/Misconceptions
How can properties of operations help to generate equivalent expressions used in solving problems? When and how are equations applied to real-world situations? What are some possible real-life situations to which there may be more than one solution?	Students apply the properties of rational numbers in order to solve expressions. Students must be precise when defining a variable. It can be helpful for students to use letters closely representing what the variables stand for when assigning variable names. Students must be sure of the order of operations. When students work with several steps in an expression, sometimes they forget about the order of

	operations such as in the example: 7+2(3x - 5) + 2x. Students may want to add the 7 + 2 first or only multiply the 2 by the 3x and not the -5. A quick review of the order of operations can help.
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 190E for specific Topic 4 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: Use properties of operations to generate equivalent expressions.		
KY.7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. ☐ Conceptual ☐ Procedural ❏ Application	We are learning to generate equivalent expressions. ● I can use the Distributive Property and area models to expand expressions. ● I can use the Distributive Property and area models to factor expressions. ● I can use the Commutative and Associative properties to add expressions.	● ❗Optional: Topic 4 Lesson 4-1 (review of 6th grade) ● Brainingcamp Task (lesson 4-1) "Patio Extension" ● Topic 4 Lesson 4-2 ● Topic 4: Let's Investigate!

Clarifications: Students demonstrate understanding of applying the order of operations to an expression involving multiple operations, including using the distributive property and variables in the expression. Students apply the properties of commutative, associative and distributive fluently. CoherenceKY.6.EE.3 → KY.7.EE.1 → KY.8.EE.7 **MP.2, MP.3, KILP.6, KILP.8** *Supporting Standard: KY.7.NS.3*	● I can apply my understanding of adding and subtracting rational numbers to the constants and coefficients when combining like terms. ● I can combine like terms and apply the properties of operations to subtract expressions.	Name Game (before lesson 4-3) ● Brainingcamp Task (Lesson 4-2) "A Number Trick" ● Brainingcamp Task (Lesson 4-2) "Pool Patio" ● Topic 4 Lesson 4-3 ● Topic 4: Let's Investigate! Expandable (before lesson 4-4) ● Topic 4 Lesson 4-4 ● Brainingcamp Task (Lesson 4-4) "Manipulating Expressions" ● Topic 4 Lesson 4-5 ● Brainingcamp Task (Lesson 4-5) "Factor Find" ● 3-Act Math Topic 4: I've Got You Covered ● Topic 4 Lesson 4-6 ● Topic 4 Lesson 4-7 ● Brainingcamp Task (Lesson 4-7) "Adding to Subtract" ● enVision Language Support Handbook
KY.7.EE.2 Understand that rewriting an expression in different forms in a problem context can clarify the problem and how the quantities in it are related. ☐ Conceptual ❑ Procedural ❑ Application	We are learning how rewriting expressions of a real-world scenario clarify the problem and understand how the quantities are related. ● I can write an expression to represent a real-world situation. ● I can write equivalent expressions by	● Topic 4 Lesson 4-8 ● enVision Language Support Handbook

Clarifications: Students apply mathematical properties in order to rewrite expressions and clarify the relationship of quantities in a problem.

For Example: If Tom and Jim both get paid a wage of $11 per hour, but Tom was paid an additional $55 for overtime, the expression $11(T + J) + 55$ may be more clearly interpreted as $11T + 55 + 11J$ for purposes of understanding Tom's pay separated from Jim's pay.

Coherence KY.6.EE.4 → KY.7.EE.2 → KY.8.EE.8c

MP.7, MP.8, KILP.1, KILP.4, KILP.9

Supporting Standard: KY.7.NS.3

combining like terms, using the Distributive Property, and applying properties of operations.
- I can use equivalent expressions to determine relationships between quantities and interpret information in real-world problems.
- I can tell how the rewritten expressions helps clarify the context of the problem.

Attending to the Standards for Mathematical Practice

Students who fluently use the strategies of the properties of rational numbers to reason through the standard order of operations by applying these properties in a structured way. Students recognize the repeated use of the distributive property as they write equivalent expressions (MP.7). When given an example problem involving multiple operations containing a mistake, students answer the question "Where did the mistake occur and how do I know?" (MP.3). Students bring mathematical context to real-life situations by understanding multiple representations of quantities may exist. For example, adding 5% to quantity a leads to an expression of $a + .05a = 1.05a$, which clarifies the problem. Students access previous knowledge of working with percents to use the same structure to see equivalent expressions exist, even when taken out of the context of the real-world situation (MP.7). Students extend this reasoning to understand other situations (MP.8).

Supporting Standards

KY.7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers. **MP.1, MP.2, MP.5** Emphasis is on **applying** mathematical operations to rational numbers that occur in real real-world context.

❑ Conceptual   ☐ Procedural   ☐ Application

Vocabulary
coefficient – A constant that multiplies a variable.
constant – A value that does not change.
distributive property of multiplication over addition – a(b + c) = a * b + a * c
evaluate – To calculate the value of. Evaluate x^2 + 5 when x = 3; Answer 3^2 + 5 = 9 + 5 = 14.
expression – A finite combination of symbols that are well-formed according to the rules applicable in the context.
like terms – Terms whose variables (such as x or y) with any exponents (such as the 2 in the x^2) are the same.
term – A single number or a variable, or numbers and variables multiplied together. A term is typically separated by addition/subtraction.
unlike terms – When the variables and/or their exponents are different (2x, $2x^2$, 2y, 2xy are all unlike terms).
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.