Grade: 6   FCPS 2025-2026 Math Grade 6 Topic 4

6th Grade Topic 4 : Represent and Solve Equations and Inequalities	Estimate Time Frame: 20 days

Essential Standards: 6.EE.5, 6.EE.6, 6.EE.7, 6.EE.8
Supporting Standards: 6.EE.4, 6.EE.9

Assessment Resource: enVision Topic 4 and Formative Assessment Lesson (FAL): Solving Linear Equations in One Variable

FCPS Supporting Links	Additional Supporting Links
Pacing Guide	Kentucky Academic Standards
6th Grade Topic 4 Standards Resource with Sample	KSA Blueprint
Formative Assessments	Target of the Standards – conceptual, procedural & application
enVision 6th 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: Represent and Solve Equations and Inequalities** *enVision Teacher Guide: page 178A to 178D for specific Topic 4 Focus-Coherence-Rigor*

Big Ideas

Reason about and solve one-variable equations and inequalities.

Essential Questions	Common Preconceptions/Misconceptions
What procedures can be used to write and solve equations and inequalities? How can I write an equation to express the relationship between one quantity in terms of another quantity? How can I analyze the relationship between two quantities using tables and graphs? How can I interpret graphical and numerical data in tables in terms of the relationship between two quantities?	Many students have difficulty understanding that an inequality can have more than one solution. The best way to work on this concept is to use real-world examples familiar to students. **Essential skills to clarity:** ● Two equivalent expressions form an equation. ● Graphs can be used to represent all of the possible solutions to a given situation. ● Many problems encountered in everyday life can be solved using

proportions, equations, or inequalities.
- An inequality can have more than one solution.

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 178E 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: Reason about and solve one-variable equations and inequalities.		
KY.6.EE.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. ☐**Conceptual** ☐**Procedural** ☐ Application	We are learning to use substitution to determine the solution to an equation. - I can substitute a given number into an equation to see if it makes the statement true. - I can tell which numbers in a specified set make an equation true. We are learning to use substitution to solve inequalities.	- Topic 4 Lesson 4-1 - Brainingcamp Task (Lesson 4-1) "What Value Makes an Equation True?" - enVision Language Support Handbook - Desmos: Expressions

Clarifications: From a set of numbers, substitute values to choose which satisfies a given equation or inequality. An equation or inequality with no solutions from the list may be described as having no solutions or an empty set of solutions, given the possible values. Coherence KY.6.EE.5→KY.8.EE.8 **MP.1, MP.2, MP.7, KILP.6, KILP.8**	● I can substitute a given number into an inequality to see if the statement is true. ● I can tell which numbers in a specified set make an inequality true.	● Formative Assessment Lesson (FAL): Solving Linear Equations in One Variable (even if you do not use the entire FAL, the card sort is recommended!)
KY.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. ☐ **Conceptual** ☐ **Procedural** ☐ **Application** **Clarifications:** Represent an unknown quantity in a real-world context appropriately with a variable and write an expression to show this. Coherence KY.6.EE.6→KY.7.EE.4 **MP.2, MP.6, KILP.2, KILP.3** *Supporting Standards: KY.6.EE.4 & KY.6.EE.9*	We are learning to write algebraic expressions. ● I can understand that a variable represents an unknown number. ● I can identify a variable to represent an unknown quantity in a real-world situation. ● I can use variables and operations to write an algebraic expression to represent a given situation.	● Topic 4 Lesson 4-2 ● Topic 4: Let's Investigate! Operation Equation (replaces Lesson 4-2) ● Topic 4 Lesson 4-3 ● Topic 4 Lesson 4-4 ● Topic 4 Lesson 4-5 ● Topic 4: Let's Investigate! The Write Way (replaces Lesson 4-5) ● Topic 4 Lesson 4-8 ● Topic 4 Lesson 4-9 ● Topic 4 Lesson 4-10 ● Brainingcamp Task (Lesson 4-8) "What are Variables?" ● Brainingcamp Task (Lesson 4-10) "What is the Relationship?" ● enVision Language Support Handbook
KY.6.EE.7 Solve real-world and mathematical problems by writing and solving equations of form $x + p = q$ and $px = q$	We are learning how to use properties of equality to solve equations represented by	● Topic 4 Lesson 4-2 ● Topic 4: Let's Investigate!

for cases in which p, q, and x are all nonnegative rational numbers**.** ☐**Conceptual** ☐**Procedural** ☐**Application** **Clarifications:** Emphasis is on understanding equations can be solved by using subtraction as an opposite operation of addition and division as an opposite operation of multiplication. Additionally, emphasis is on the importance of keeping the equations balanced when solving. Coherence KY.6.EE.7→KY.7.EE.4 **MP.1, MP.2, MP.3, MP.4, KILP.1, KILP.2**	mathematical or real-world situations. ● I can explain inverse operations. ● I can understand how inverse operations are used to balance equations when solving. ● I can write and solve addition and subtraction equations. ● I can write and solve multiplication and division equations. ● I can write and solve equations with non-negative rational numbers.	Operation Equation (replaces Lesson 4-2) ● Topic 4 Lesson 4-3 ● Topic 4 Lesson 4-4 ● Topic 4 Lesson 4-5 ● Topic 4: Let's Investigate! The Write Way (replaces Lesson 4-5) ● Brainingcamp Task (Lesson 4-2) "Balance Two Sides" ● Brainingcamp Task (Lesson 4-4) "One-Step Equations" ● enVision Language Support Handbook
KY.6.EE.8 Write an inequality of the form $x > c$, $x < c$, $x \geq c$, or $x \leq c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of these forms have infinitely many solutions; represent solutions of such inequalities on vertical and horizontal number lines. ☐**Conceptual** ☐**Procedural** ☐ Application **Clarifications:** Emphasis is on students understanding the phrases "more than", "less than", "at least," and "at most" represent constraints and conditions and are therefore associated with the operators listed in real-world problems. Students also understand an inequality does not yield a specific value, but rather an infinite range of values. Students also appropriately represent solutions to inequalities using both open and closed circles, along with direction, on vertical and horizontal number lines.	We are learning to write inequalities from mathematical or real-world problems. ● I can understand the phrases more than, less than, at least, and at most. ● I can write inequalities using the symboles >, <, ≥, ≤. We are learning to represent solutions of inequalities. ● I can represent inequality solutions on vertical and horizontal number lines. ● I can represent inequality solutions using open and closed circles, along with direction. ● I can explain what the solution of an inequality means on a number line.	● Topic 4 Lesson 4-6 ● Topic 4 Lesson 4-7 ● 3-Act Math Topic 4: Checking a Bag ● Brainingcamp Task (Lesson 4-6) "How to Write an Inequality?" ● Brainingcamp Task (Lesson 4-7) "What are the Solutions?" ● enVision Language Support Handbook

Grade: 6   FCPS 2025-2026 Math Grade 6 Topic 4

Coherence KY.6.EE.8→KY.7.EE.4 **MP.3, MP.7, KILP.1, KILP.2**		

Students have previously explored the concept of equality. In grade 6, students explore equations as one expression being set equal to a specific value. A solution is a value of the variable that makes the equation true and students may use various processes to identify such values that, when substituted for the variable, will make the equation true (MP.2). This reasoning is also applied when recognizing solutions for inequalities, such that students realize the value of a variable is one that would make the inequality statement true. Students use manipulatives and pictures (e.g., tape-like diagrams) to represent the equations and their solution strategies. When writing equations, students learn to be precise in their definition of a variable (MP.6), for example, writing "n equals John's age in years" as opposed to writing "n is John". Students use tables and graphs to compare different expressions or equations to make decisions in real-world scenarios. These models also create structure as students gain knowledge in writing expressions and equations (MP.7).

Supporting Standards

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.EE.9 Use variables to represent two quantities in a real-world problem that changes in relationship to one another;

☑**Conceptual**   ☑**Procedural**   ❏ Application

a. Appropriately recognize one quantity as the dependent variable and the other as the independent variable.

☑**Conceptual**   ❏ Procedural   ❏ Application

b. 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.

☑**Conceptual**   ☑**Procedural**   ❏ Application

c. Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the question. **MP.3, MP.4, MP.7**

☐**Conceptual**   ☐**Procedural**   ❏ Application

Considerations:
- Students understand in real-world problems, one quantity dependently changes relative to another independent quantity at a constant rate; understand, at times, the quantities given may not have a clear independent/dependent relationship.
- To help students with confusion about what a graph represents, have them explain in their own words what the graph means.

Coherence KY.5.OA.3→KY.6.EE.9→KY.8.EE.5

Vocabulary

coordinate – One or more numbers that uniquely determine the position of a point or other geometric element on a line, graph, or map.
dependent – Variable dependent on another variable: the independent variable.
equation – An equation is a mathematical sentence that includes an equals sign to compare two expressions.
independent – A variable that stands alone and isn't changed by the other variables you are trying to measure
inequality - A mathematical sentence that contains $<, >, \leq, \geq, \neq$.
inverse relationship - Pairs of operations that "undo" each other.
table – An organization of data into rows and columns

*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.