Grade: 7   FCPS 2025-2026 Math Grade 7 Topic 3

7th Grade Topic 3 : Understand and Use Percents to Analyze and Solve Percent Problems	Estimate Time Frame: 22 days

Essential Standards: 7.RP.3
Supporting Standards: 7.RP.1, 7.NS.3

Assessment Resource: enVision Topic 3 and Formative Assessment Lesson **(FAL)**: [Increasing and Decreasing Quantities by a Percent](#)

FCPS Supporting Links	Additional Supporting Links
[Pacing Guide](#) [7th Grade Topic 3 Standards Resource with Sample Formative Assessments](#) [enVision 7th 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 6: Understand and Use Percent](#)** *enVision Teacher Guide: page 340A to 340D for specific 6th Grade Topic 6 Focus-Coherence-Rigor* **[MILC Resources Topic 3: Understand and Use Percents to Analyze and Solve Problems](#)** *enVision Teacher Guide: page 136A to 136D for specific 7th Grade Topic 3 Focus-Coherence-Rigor*

Big Ideas
Analyze percent relationships and use them to solve real-world and mathematical problems.

Essential Questions	Common Preconceptions/Misconceptions
How can percentages show proportional relationships	It is common for students to have difficulty in scaffolding from simple

between quantities and be used to solve problems? How can you determine the correct operation to use to solve problems? How do models help solve math problems? How does the ongoing use of fractions and decimals apply to real-life situations?	problems to more complex, multi-step problems; assistance in this regard is given by the use of estimation strategies to benchmark their work and lend confidence to more accurate solutions.

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 340E for specific 6th GradeTopic 6 Math Practice suggestions* *enVision Teacher Guide: page 136E for specific 7th GradeTopic 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: Compute fluently with multi-digit numbers and find common factors and multiples.		
KY.7.RP.3 Use percents to solve mathematical and real-world problems. ❑ Conceptual ❑ Procedural ❑ Application	We are learning to solve mathematical and real-world problems using percents. ● I can convert between a decimal, fraction, and percent. ● I can write a percent as a rate per 100.	❗ Begin in 6th Grade Book ● ❗ 6th Grade Book Topic 6 Lesson 6-1 ● Brainingcamp Task (Lesson 6-1) "What is a

a. Find a percent of a quantity as a rate per 100; solve problems involving finding the whole, a part and a percent, given two of these.

❏ Conceptual   ☐ Procedural   ☐ Application

Clarifications: For example, 30% of a quantity means 30/100 times the quantity.

- I can find the whole when given the part and percent.
- I can find the part when given the whole and percent.
- I can find the percent when given the part and whole.

Percent?"
- ❗6th Grade Book Topic 6 Lesson 6-2
- ❗ 6th Grade Book 6th Grade Book Topic 6: Let's Investigate! Straight From the Headlines (replaces lesson 6-2)
- Brainingcamp Task (Lesson 6-2) "Writing Fractions, Decimals, and Percents"
- ❗6th Grade Book Topic 6 Lesson 6-3
- ❗6th Grade Book Topic 6 Lesson 6-4
- ❗6th Grade Book Topic 6 Lesson 6-5
- ❗ 6th Grade Book Topic 6: Let's Investigate! Per Sense (replaces lesson 6-5)
- Brainingcamp Task (Lesson 6-5) "How Many Points Were Scored?"
- ❗6th Grade Book Topic 6 Lesson 6-6
- Brainingcamp Task (Lesson 6-6) "How Many Shots Were Taken?"
- Brainingcamp Task (Lesson 6-6) "Rectangle Riddle"
- ❗6th Grade Book **3-Act Math** Topic 6: Ace the Test

		● enVision Language Support Handbook
KY.7.RP.3 Use percents to solve mathematical and real-world problems. ❑ Conceptual ☐ Procedural ☐ Application b. Use proportional relationships to solve multistep ratio and percent problems. ❑ Conceptual ☐ Procedural ☐ Application Clarifications: Could include but are not limited to simple interest, tax, markups and markdowns, gratuities and commissions, percent increase and decrease, and percent error. Coherence KY.6.RP.3c → KY.7.RP.3 **MP.2, MP. 5, MP.6, KILP.1, KILP.4, KILP.6** *Supporting Standards: KY.7.RP.1 & KY.7.NS.3*	We are learning to use proportional relationships to solve multistep ratio and percent problems. ● I can represent and solve percent problems using proportional relationships. ● I can solve problems involving tax. ● I can solve problems involving markups and markdowns. ● I can solve problems involving gratuities and commissions. ● I can solve problems involving percent change (increase or decrease). ● I can solve problems involving percent error. ● I can solve simple interest problems.	***Return to 7th Grade Book*** ● Topic 3 Lesson 3-1 ● Topic 3: Let's Investigate! Tip-Top Tippers (replaces examples 1 and 2 from lesson 3-1) ● Topic 3 Lesson 3-2 ● Brainingcamp Task (Lesson 3-2) "After-School Activity" ● Topic 3 Lesson 3-3 ● Topic 3 Lesson 3-4 ● Topic 3: Let's Investigate! Solving for Screen Time (replaces examples 1 and 2 from lesson 3-4) ● Topic 3 Lesson 3-5 ● Topic 3 Lesson 3-6 ● enVision Language Support Handbook ● Formative Assessment Lesson (FAL): Increasing and Decreasing Quantities by a Percent

Attending to the Standards for Mathematical Practice

One special proportional relationship in common usage involves percents. Students may think about "percent" as "part of 100" and solve a proportional relationship for any missing part of the relationship between a number, a part of that number and the associated percentage

(MP.5). Students reason about when their resulting solutions make sense, as when the resulting solution is greater than 100% or, when speaking about percent increase, decrease and error, when their resulting solution may be a negative value (MP.6).

Supporting Standards

KY.7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. **MP.2, MP.6**
❑ Conceptual   ☐ Procedural   ❑ Application

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 world context.
❑ Conceptual   ☐ Procedural   ☐ Application

Vocabulary

interest rate – a percent used to calculate interest on the principal.
markdown – the decrease from the original price of an item to its sale price.
markup – the amount of increase from the cost of an item to its selling price.
percent – is a rate in which the first term is compared to 100. The number of hundredths that represents the part of the whole.
percent change - describes how much a quantity has changed relative to its original amount.
percent equation - The percent is a constant of proportionality that relates a part to a whole: part = percent · whole
percent error - describes the accuracy of a measured or estimated value compared to an actual value.
percent markdown - the markdown as a percent decrease of the original price.
percent markup - the markup as a percent increase from the original cost.
principal - the initial amount.
simple interest - interest that is applied to the initial amount only.

*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.