Grade: 6 FCPS 2025-2026 Math Grade 6 Topic 5

6th Grade Topic 5: Understand and Use Ratio and Rate	Estimate Time Frame: 22 days
Essential Standards: 6.RP.1, 6.RP.2, 6.RP.3 Assessment Resource: enVision Topic 5 and Formative Assessment Lesson (FAL): Using Proportional Reasoning	

FCPS Supporting Links	Additional Supporting Links
Pacing Guide 6th Grade Topic 5 Standards Resource with Sample Formative Assessments enVision 6th Grade Topic 5 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 5: Understand and Use Ratio and Rate** ***enVision Teacher Guide: page 260A to 260D for specific Topic 5 Focus-Coherence-Rigor***

Big Ideas
Understand ratio concepts and use ratio reasoning to solve problems.

Essential Questions	Common Preconceptions/Misconceptions
What are ratios and rates? How can you use ratios and rates to describe quantities and solve problems? How are ratios used to compare two quantities or values? How do we use ratios and unit rates in the real world to solve problems? How can I model and represent ratios and rates? How do we use ratio reasoning to convert measurement units?	When asked to write the ratio, some students may confuse the order of the quantities. For example, when asked to write the ratio of boys to girls in the sentence, "*There are 14 girls and 18 boys in our math class.*" Instead of writing 18:14, some students may write 14:18. To address this common misconception, ask students to label the quantities they are comparing (i.e., 14 **girls**/18 **boys**). Students often confuse the terms *ratio, rate,* and *unit rate*. Create an activity (vocabulary, foldable, etc.) to help students with these confusing terms.

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 260E for specific Topic 5 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: Understanding ratio concepts and use ratio reasoning to solve problems.		
KY.6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. ☐ **Conceptual** ☐ **Procedural** ❑ Application **Clarifications:** Students use the concept of ratios as a comparison between related quantities; students also express these relationships in equivalent ratios in the lowest terms, where appropriate. Coherence KY.5.NF.5→KY.6.RP.1 **MP.2, MP.6, KILP.1, KILP.2, KILP.6**	We are learning to use ratios to describe the relationship between two quantities. ● I can write ratios three ways: as a fraction, ___:___, and ___ to ____. ● I can use bar diagrams and double-number lines to model ratio relationships. ● I can write equivalent ratios in lowest terms.	● Topic 5 Lesson 5-1 ● Brainingcamp Task (Lesson 5-1) "What is a Ratio?" ● enVision Language Support Handbook

KY.6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. ☒ **Conceptual** ☒ **Procedural** ❑ Application Clarifications: Students find the missing values in a table, assuming the values in the table represent a proportional relationship; students plot the values from a table on a coordinate plane, with appropriate labels and scales; Students compare the ratios of tables, answering, which has a greater/less rate. Coherence KY.6.RP.3→KY.7.RP.2 **MP.1, MP.4, MP.7, KILP.1, KILP.3, KILP.9**	We are learning to use ratio tables and graphs to solve problems. • I can make a table of equivalent ratios. • I can use the values in a ratio table to write ordered pairs. • I can plot the ordered pairs on a coordinate plane. • I can find missing values in a table. • I can use ratio tables to compare ratios and to solve problems.	• Topic 5 Lesson 5-2 • Topic 5 Lesson 5-3 • Topic 5: Let's Investigate! Playing Fair (replaces examples 1 and 2 in Lesson 5-4) • Lesson 5-4 • Brainingcamp Task (Lesson 5-2) "What is an Equivalent Ratio?" • Brainingcamp Task (Lesson 5-2) "Snakes and Lizards" • Brainingcamp Task (Lesson 5-3) "How can Ratios be Compared?" • Brainingcamp Task (Lesson 5-4) "How are Equivalent Ratios Displayed in a Graph or a Table?" • enVision Language Support Handbook
KY.6.RP.2 Understand the concept of a unit rate a/b associated with a ratio a:b with B ≠ 0 and use rate language in the context of a ratio relationship. ☒ **Conceptual** ❑ Procedural ❑ Application **Clarifications:** Expectations for unit rates in grade 6 are limited to non-complex fractions; additionally, students reduce ratios of two whole numbers to a unit rate involving a fraction and a denominator of 1. Students describe real-life contexts using ratio language. Coherence KY.5.NF.3→KY.6.RP.2→KY.7.RP.1	We are learning to understand rates and unit rates. • I can use rates to describe ratios in which the terms have different units.	• Topic 5 Lesson 5-5 • Brainingcamp Task (Lesson 5-5) "What is a Rate? What is a Unit Rate?" • enVision Language Support Handbook • Formative Assessment Lesson (FAL): Using Proportional Reasoning

MP.2, MP.6, KILP.1, KILP.2, KILP.6		
KY.6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems. ☐ **Conceptual** ☐ **Procedural** ☐ **Application** b. Solve rate problems, including those involving unit pricing and constant speed. ❑ Conceptual ❑ Procedural ☐ **Application** **Clarifications:** Students find the missing values in a table, assuming the values in the table represent a proportional relationship; students plot the values from a table on a coordinate plane, with appropriate labels and scales; Students compare the ratios of tables, answering, which has a greater/less rate. c. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. ☐ **Conceptual** ☐ **Procedural** ❑ Application **Clarifications:** Students find a unit rate from a given situation and reason to apply it to a future scenario. Coherence KY.6.RP.3→KY.7.RP.2 **MP.1, MP.4, MP.7, KILP.1, KILP.3, KILP.9**	We are learning to use unit rates to solve problems involving constant speed and unit price. • I can use ratio reasoning to compare unit rates and solve problems. • I can determine the unit rate, then complete a table of equivalent rates to solve problems. • I can use the equation: *distance = rate x time* to solve unit rate problems. We are learning to use ratios to convert units of measurement. • I can identify the conversion factor and use it to find equivalent rates to convert units of length, capacity, and weight.	• Topic 5 Lesson 5-6 • Topic 5: Let's Investigate! Rate That Scooter (replaces Lesson 5-6) • Topic 5 Lesson 5-7 • 3-Act Math Topic 5: Get in line • Topic 5 Lesson 5-8 • Topic 5 Lesson 5-9 • Brainingcamp Task (Lesson 5-6) "How are Unit Rates Compared?" • Brainingcamp Task (Lesson 5-6) "Wheat or White?" • enVision Language Support Handbook

Attending to the Standards for Mathematical Practice

As students solve similar problems, they develop their skills in several mathematical practice standards, reasoning abstractly and quantitatively (MP.2), abstracting information from the problem, creating a mathematical representation of the problem and correctly working with both part-part and part-whole situations. Students attend to precision (MP.6) as they properly use ratio notation, symbolism and label quantities. Representing ratios in various ways help students see the additive and multiplicative structure of ratios (MP.7). Students

model with mathematics (MP.4) when they solve real-world and mathematical problems using ratio and rate reasoning, especially when they make use of various representations in the modeling process.

Supporting Standards

N/A

Vocabulary

constant speed - The speed stays the same over time.
conversion factor - A rate that compares equivalent measures.
equivalent ratios - Express the same relationship; ex: 2/3 is equivalent to 4/6
rate - A ratio that compares different units.
ratio - A pair of numbers that compares different types of units.
unit price - The cost for one unit of a given item.
unit rate - The cost for one unit of a given item; a rate simplified to have the denominator of 1.

*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.