Unit 3a Understand and Use Ratio and Rates

Content Area: **Math**
Course(s): **Math 6**
Time Period: **Marking Period 2**
Length: **MP2 WK 10 MP3 WK1-5 Envision Mathematics**
Status: **Published**

Essential Questions

- How do you evaluate expressions and solve equations with fractions?

Big Ideas

- Write ratios to represent the relationships between quantities.
- Make tables of equivalent ratios and graph the pairs of values on a coordinate plane.
- Use ratio tables, equivalent ratios and double number lines to solve problems involving rate.
- Find unit rates and use them to convert customary and metric units.

CSDT Technology Integration

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.

8.1.8.NI.3: Explain how network security depends on a combination of hardware, software, and practices that control access to data and systems.

Activity:

Khan Academy could be used as reinforcement or a flipped classroom method. For ratios and proportions students are learning the material and strategies. Khan academy allows students to work at their own pace through the video and pause and rewind to make sure they understand. They are also given practice problems to check for understanding, for each topic under the Proportional Relations chapter. As students take the quizzes they are either advised to advance or rewatch the lesson. After all lessons are watched/reviewed, there is a unit test for students to take. Student's scores can be tracked through the class account and it drives instruction based on which topic students are struggling with.

Enduring Understandings

The Number System

6.RP.1 [M] Understand the concept of ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”

6.RP.2 [M] 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. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar.” “We paid $75 for 15 hamburgers, whis is a rate of $5 per hamburger.” Clarification: Expectations for unit rates in this grade are limited to non-complex fractions.

6.RP.3 [M] Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

6.RP.3a [M] 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.

6.RP.3b [M] Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them. Lesson 1, 5,6,8,10, and page 311

2. Reason abstractly and quantitatively. Lesson 1,2,3,5,6,7,8,9,10, and page and page 311

3. Construct viable arguments and critique the reasoning of others. Lesson 1,2,4,5,8,9, 10, and page 311

4. Model with mathematics. Lesson 1,3,4,7,8, and page 311

5. Use appropriate tools strategically. Lesson 2, and page 311

6. Attend to precision. Lesson 6,9

7. Look for and make use of structure. Lesson 2,3,4,7,9 and page 311

8. Look for and express regularity in repeated reasoning. Lesson 2,5,7,9,10 and page 311