GRADE 7 — Ratio and Proportional Relationships

Student Learning Objective: Students analyze proportional relationships and use them to solve real-world and mathematical problems.

ABOVE STANDARD · 2640+

Students are likely engaging the following skills:

- Find the unit rate from an equation, table, or diagram.
- Given multiple tables, identify all tables.
- Solve multi-step percent problems that compare different real-world scenarios.
- Identify the unit rate, of a proportional relationship, between two rational number quantities.

Educator-Recommended Digital Library Resources include:

Percent Change
An introductory lesson for percent increase and decrease. Teachers can differentiate by having students determine the original price when given percent of change.

Find the Constant of Proportionality in a Table, Graph and Equation
A resource that engages students in a real life task applying the constant of proportionality in a table, graph and equation. Students or instructors can create their own problems using rational numbers to meet higher level achievement.

Exploring ratio and proportional relationships with the Orange Juice Problem
A lesson where students calculate the best tasting formula for orange juice. The use of rational numbers will provide the differentiation between this resource and lower achievement level resources.

AT/NEAR STANDARD · 2494–2640

Students are likely engaging the following skills:

- Look at a table with whole numbers and find the unit rate.
- Identify proportional relationship (discern between correct / incorrect) in equation format.
- Solve one-step percent problems in familiar context.
- Determine unit rate when given fractional rates or when given larger numbers.

Educator-Recommended Digital Library Resources include:

Ratios and Proportions in 6th Grade Math
A resource that provides the opportunity for students to make connections between graph, table, equation and the scenario. This on grade level unit begins with reviewing the concepts of ratio, rate and unit rate.

Perfect Purple Paint II
A resource in which students use ratio and proportional reasoning to mix paint to find the "perfect purple". This activity can easily be differentiated for below or above grade level by adjusting the ratio.

Introducing Percentage of Change through the "Biggest Loser"
A resource that introduces the idea of increase and decrease percentages. The activity could be used at a lower achievement level if the original weight (or number of blocks) was 100 pounds.

BELOW STANDARD · <2494

Students are likely engaging the following skills:

- Look at a table or graph with whole numbers and find the unit rate.
- Identify proportional relationship when a straight line passes through the origin.
- Solve one-step percent problems.
- Determine unit rate when values in a table or graph are whole numbers.

Educator-Recommended Digital Library Resources include:

Find the Constant of Proportionality in a Table, Graph and Equation
A resource that introduces the rate of proportionality using familiar scenarios. The lesson supports students in this achievement level by beginning with simple ratios.

Perfect Purple Paint I
A resource in which students use ratio and proportional reasoning to mix paint to find the "perfect purple". The unit begins with ratios that support students at this achievement level.

Using Unit Rate to Compare Quantities
A resource that uses unit fractions in real world scenarios. The resource supports students at this achievement level by using visuals such as tape diagrams and tables to make comparisons.

Digital Library resources are meant to be used in conjunction with an educator's curriculum, and can serve as a jumping off point for instruction. Educators are encouraged to adapt the resources to best fit their students' needs.