 **GRADE 7** Ratio and Proportional Relationships

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

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| **ABOVE STANDARD**  |
| *Students are working to solidify the following skills:* | *Educator-recommended next-steps and Digital Library resources* |
| * Solve multi-step percent problems that compare different real-world scenarios
* Identify the unit rate, of a proportional relationship, between two rational number quantities
* Given multiple tables, identify all tables
* Find the unit rate from an equation, table, or diagram
 | Instructional next-steps include, helping students to:* Engage in real-life tasks applying the constant of proportionality. Digital Library Example: [**Find the Constant of Proportionality in a Table, Graph and Equation**](https://www.smarterbalancedlibrary.org/content/find-constant-proportionality-table-graph-and-equation)
* Reason proportionally in a realistic context. Digital Library Example: [**Exploring ratio and proportional relationships with the Orange Juice Problem**](https://www.smarterbalancedlibrary.org/content/exploring-ratio-and-proportional-relationships-orange-juice-problem)
* Determine percent increase and decrease. Digital Library Example: **[Percent Change](#Number3" \o "This is an introductory lesson for percent increase and decrease. Teachers can differentiate by having students determine the original price when given percent of change.)**
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| **AT/NEAR STANDARD**  |
| *Students are working to solidify the following skills:* | *Educator-recommended next-steps and Digital Library resources* |
| * Solve one-step percent problems in familiar context
* Determine unit rate when given fractional rates or when given larger numbers.
* Look at a table with whole numbers and find the unit rate.
* Identify proportional relationship in equation format (discern between correct / incorrect).
 | Instructional next-steps include, helping students to:* Make connections between a graph, table, equation, and a scenario. Digital Library example: **[Ratios and Proportions in 6](#Number4" \o "This resource 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.)[th](#Number4" \o "This resource 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.) [Grade Math](#Number4" \o "This resource 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.)**
* Practice applying the ideas of increasing and decreasing percentages. Digital Library example: **[Introducing Percentage of Change through the “Biggest Loser”](#Number6" \o "This resource 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.)**
* Use ratio and proportional reasoning in a real-world context. Digital Library example: **[Perfect Purple Paint II](#Number5" \o "This is 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. )**
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| **BELOW STANDARD**  |
| *Students are working to solidify the following skills:* | *Educator-recommended next-steps and Digital Library resources* |
| * Solve one-step percent problems.
* Determine unit rate when values in a table or graph are whole numbers.
* 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.

  | Instructional next-steps include, helping students to:* Use ratio and proportional reasoning in a real-world context. Digital Library example: **[Perfect Purple Paint I](#Number8" \o "This is 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. )**
* Understand unit rate when associated with a ratio using visuals such as tape diagrams and tables. Digital Library example: **[Using Unit Rate to Compare Quantities](#Number9" \o "This is 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.)**
* Develop understanding of the rate of proportionality using familiar scenarios. Digital Library example: **[Find the Constant of Proportionality in a Table, Graph and Equation](#Number7" \o "This is a resource that introduces the rate of proportionality using familiar scenarios. The lesson supports students in this achievement level by beginning with simple ratios.)**
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