

Domain**Ratios & Proportional Thinking****RP****Grade 6**Understand ratio concepts and use ratio reasoning to solve problems.

Standard 1 CC.6.RP.1 Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a 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."

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Standard 2 CC.6.RP.2 Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$ (b not equal to zero), 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, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger." (Expectations for unit rates in this grade are limited to non-complex fractions.)

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Standard 3 CC.6.RP.3 Understand ratio concepts and use ratio reasoning to solve problems. 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.

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Standard 3a CC.6.RP.3a 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.

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Standard 3b CC.6.RP.3b 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?

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Standard 3c CC.6.RP.3c Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole given a part and the percent.

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Standard 3d CC.6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.



- Grade 7 *Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Standard 1 CC.7.RP.1 Analyze proportional relationships and use them to solve real-world and mathematical problems. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $(\frac{1}{2})/(\frac{1}{4})$ miles per hour, equivalently 2 miles per hour.
- Grade 7 *Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Standard 2 CC.7.RP.2 Analyze proportional relationships and use them to solve real-world and mathematical problems. Recognize and represent proportional relationships between quantities.
- Grade 7 *Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Standard 2a CC.7.RP.2a Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- Grade 7 *Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Standard 2b CC.7.RP.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- Grade 7 *Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Standard 2c CC.7.RP.2c Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p , the relationship between the total cost and the number of items can be expressed as $t = pn$.
- Grade 7 *Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Standard 2d CC.7.RP.2d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.
- Grade 7 *Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Standard 3 CC.7.RP.3 Analyze proportional relationships and use them to solve real-world and mathematical problems. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.