

## **Ratios and Proportional Relationship CCS – Grade 6**

**6.RP.A.1:** 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."

**6.RP.A.2:** Understand the concept of a unit rate  $a/b$  associated with a ratio  $a:b$  with  $b \neq 0$ , and use rate language in the context of a ratio relationship.

**6.RP.A.3:** 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.A.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.

**6.RP.A.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?

**6.RP.A.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.

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

## **Ratios and Proportional Relationship CCS – Grade 7**

**7. RP.A.1:** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.

**7. RP.A.2:** Recognize and represent proportional relationships between quantities.

**7.RP.A.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.

**7.RP.A.2b:** Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

**7. RP.A.2c:** Represent proportional relationships by equations.

**7.RP.A.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.

**7. RP.A.3:** Use proportional relationships to solve multistep ratio and percent problems.