# 6th Grade - Unit 3: Math - Ratios and Proportions

Content Area: **Mathematics**
Course(s): **Math 6, Generic Course**
Time Period: **Generic Time Period**
Length: **25 days**
Status: **Published**

## Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

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|---|---|
| MA.6.RP | Ratios and Proportional Relationships |
| MA.6.RP.A | Understand ratio concepts and use ratio reasoning to solve problems. |
| MA.6.RP.A.1 | Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. |
| MA.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. |
| MA.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. |
| MA.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. |
| MA.6.RP.A.3b | Solve unit rate problems including those involving unit pricing and constant speed. |
| MA.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. |
| MA.6.RP.A.3d | Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. |

## Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How can a percent be estimated and found?
- How can customary and metric measurements be converted to other units?
- What are ratios and rates and how are they used in solving problems?
- What is the meaning of percent?
- What procedures can be used to solve proportions?

## Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- A part of a whole, or a part of a set can be represented by a fraction, a decimal, and a percent.

Fractions, percents, and decimals are equivalent expressions

- A percent is a special kind of ratio that compares a number to 100.
- A ratio is a special relationship between two quantities where for every x units of one quantity there are y units of another quantity.
- Equivalent ratios enable you to convert between units by multiplying or dividing.
- Proportions are equations formed by two ratios. Equal ratios can be found by multiplying both terms by the same nonzero number.

## Content

Students will be able to:

- write ratios and rates to compare real-world quantities
- find and use unit rates and unit costs
- use equivalent ratios to convert from one unit of measure to another
- model and write percents using equivalent ratios
- convert percents to decimals to fractions and vice versa
- use percents to find part of a whole
- solve problems involving finding the whole, given a part and the percent

Vocabulary:

- ratio
- rate
- unit rate
- unit cost
- equivalent ratio
- percent
- tape diagram
- double number line

## Assessments

## Resources

- Pearson Math Course 1 textbook and online resources
- Teacher made flip-charts
- Web-based activities (mathplayground.com) (coolmath.com)
- Teacher made worksheets/assessments
- mad minutes
- NJCTL.org (PMI math)

- Pizzazz series of worksheets