

Summary clip for Ratio and Proportion

A proportion is a relationship of equality between two ratios. Research on students' understanding of ratio and proportion suggests that developing a conceptual understanding of ratio relationships includes the following:

- Learning to attend to two quantities simultaneously
- Forming a multiplicative comparison of two quantities; for example, comparing a 25-inch rope to a 10-inch rope by understanding that the first rope is 2.5 times as long as the second
- Forming a composed unit, such as a 3:2 unit to describe a class that has 3 girls for every 2 boys, and iterating (repeating) and partitioning (breaking into equal-size parts) the unit
- Creating a family of equivalent ratios by iterating and partitioning or by using multiplication and division

Studies have found that a strong foundation in proportional reasoning can support students' understanding of linear functions and graphs, linear equations in the form $y = mx$ and $y = mx + b$, and measurement situations. Teachers can promote students' proportional reasoning capacities by balancing skills and concepts and by delaying the instruction of the cross-multiplication algorithm until students have already gained experience with forming ratios and understanding proportions as an equivalence of ratios.

Based on *Teaching Ratio and Proportion in the Middle Grades*

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