

*The Common Denominator*  
*A Family Math Newsletter*  
*Mathematics 6 GT Unit 9: Patterns Leading to Division*

Unit at a Glance:

Suggested Length of Unit: 14 days (45 minutes), 7 days (90 minutes)

- Integer Division
- The Rate Model for Division
- Division of Fractions
- Division with Negative Numbers
- Division in Equations and Inequalities
- The Ratio-Comparison Model for Division
- Proportions
- Proportional Thinking
- Proportions in Similar Figures

Resources

- Textbook Resource: Viktora, Steven S, et al. Transition Mathematics. Wright Group/McGraw-Hill, 2008, pp. 552-613.
- Homework Help/Online book (teacher-provided code needed): [Online Textbook Portal](#)

Exploring Chapter 9

Division, the last of the four traditional fundamental operations of arithmetic to be studied in this book, is by no means the least important. Rate and ratio comparison, the two principal uses of division, have applications throughout mathematics. Proportions, which can be viewed as arising from equal quotients, are also of fundamental significance.

Because the hand calculation of answers to division problems is more difficult than for addition, subtraction, and multiplication, most students in the past spent a great deal of time learning *how* to divide but not *when* to divide. Even if they studied the division of decimals or fractions, they may not be able to give an example of dividing one such number by another.

This chapter can be split roughly into two parts. Lessons 9-1 through 9-6 deal with division, and Lessons 9-7 through 9-9 deal with proportions. The chapter begins by distinguishing two types of division: division (which yields an integer quotient and a positive integer remainder) and real number division (which yields a single number written as a decimal or fraction).

The next three lessons deal with the Rate Model for Division and its applications. In Lesson 9-2, rates are calculated in which the divisor and dividend are either whole numbers or decimals. In Lesson 9-3 and 9-4, this model is used with fractions and negative numbers.

Lesson 9-5 introduces the Division Property of Equality as a method for solving equations of the form  $ax = b$  and the Division Property of Inequality to solve inequalities. In Lesson 9-6, the Ratio Comparison Model is discussed.

The first of three lessons on proportions, Lesson 9-7, introduces proportions and solves them using the Multiplication Property of Equality and the Means-Extremes Property. Intuitive ways of solving proportions are discussed in Lesson 9-8, and applications of proportions in similar figures are in Lesson 9-9.

Quote

“Sometimes the questions are complicated and the answers are simple.” -Dr. Seuss