

Ratio Chains

Purpose

Students will learn to represent comparisons of numbers as ratios by creating paper chains and dividing counters into groups.

Materials

For the teacher: chalk, chalkboard, 6 red paper strips, 8 blue paper strips, tape or stapler

For each student: 12 red paper strips, 12 blue paper strips, tape or stapler, 24 buttons (or similar counters)

Activity

A. Pre-Activity Preparation

1. Cut red and blue paper strips to be used as links for a chain to represent ratios.
2. Determine a variety of ratios that can be made using a total of 12 red and 12 blue links for the students to create ratio chains.

B. Introduction

1. Draw three circles and four squares on the chalkboard.
2. Ask students what fraction of the shapes on the chalkboard are circles. [$\frac{3}{7}$]
3. Tell students they will be learning a new way to compare quantities (or numbers). Explain that a ratio compares the number or size of one item to the number or size of another related item.
4. Write “circles:squares” on the chalkboard. Tell students that this ratio compares circles to squares. Show students how to replace the words “circles” and “squares” with the actual number of each shape to create the ratio “3:4.”
5. Tell students that the correct way to read the ratio is to say that the number of circles to squares is “3 to 4.”
6. Discuss how the ratio is related to the fraction.
7. Discuss other quantities that are often represented as ratios, such as miles per hour, free throws hit to free throws missed, probabilities, etc.

(continued)

EXTENDING
THE

ACTIVITY



Divide students into groups and have them create a simple recipe (e.g., a party mix) using ratios such as the number of cups of pretzels to cups of cereal is represented by the ratio 1:2.

INCORPORATING

TECHNOLOGY



Have students visit www.aaamath.com/g62a-ratios.html. Have them explore the various pages on this site. Instruct them to click on the “Play” button at the top of the page to play a variety of interactive games that develop their ratio skills.

Standards Links
6.2.2, 6.2.6, 6.6.6, 6.7.1

Activity (continued)


C. Student Activity

1. Tell students that they will be using links of a paper chain to represent different ratios and comparing them to the fractions that are associated with them.
2. Hand the paper strips and stapler or tape to each student.
3. Tell students that you will demonstrate how to create a chain with the same ratio of red to blue links as the ratio of circles to squares on the chalk board. Write “red:blue” on the chalkboard and emphasize the importance of the order of the ratio. Create a chain with three red links and four blue links.
4. Add three more red links and four more blue links to the chain and ask students the ratio of the red:blue links. Tell students that the ratio can still be written as “3:4” because for every three red links there are exactly four blue links. Demonstrate by counting off in groups of three red links and four blue links.
5. Have students create chains to represent the ratios that you determined. After each chain is created, discuss how the ratio of red:blue compares to the fraction that represents the number of red links and the fraction that represents the number of blue links.
6. Give the students 24 buttons.
7. Tell students that they will be dividing the 24 buttons into two groups to represent ratios. Tell them that they should use all of the buttons to represent each ratio.
8. Tell them to divide the buttons into two groups to represent the ratio 1:3. Discuss the strategies used in dividing the buttons.
9. Repeat step 8 using the ratios 1:1, 2:4, 5:3, 7:5, and 1:2.


Classroom Assessment


Basic Concepts and Processes


When the students have completed the activity, ask the following questions:

 How many total links would you need to represent a ratio of 4:7?

 How did you determine your answer?

 Could the ratio 4:7 be represented with another total number of links?

 How would you determine another total number of links that could represent the ratio 4:7?

 What strategies did you use to divide the buttons into groups to represent the given ratios?