Ratios

By: Lori McDonald
Elementary school teacher; Ed.D. in School Leadership/Administration

**Math
Grades 6–8**

Introduction

This is an introductory lesson on ratios. It is important that students gain an understanding of the word ratio through consistent use of the word and examples by the teacher.

Learning Objectives

- The learner will understand that a ratio is an ordered pair of numbers.
- The learner will understand that the order of numbers in the pair is important.
- The learner will understand real-world situations to match a given ratio.

Materials Needed

- *Lucky Charms cereal*

Procedure

Warm-up- Show students a box of Lucky Charms cereal. Tell students the exact number (have them counted ahead of time) of pieces in the cereal box. Ask students to write down how many marshmallows and oat pieces they think there are in the box. Reveal the amount of each and see which student came the closest. Give a prize to the student with the closest guess.

1. Start with the number of marshmallows and oat pieces and explain to the students how this is a ratio.
   For example: There are 256 marshmallows to 2,485 oat pieces.

2. Explain that there are 3 different ways to write a ratio:

   - **As a fraction - 256 marshmallows/2,485 oats**

   - **The word "to" - 256 marshmallows to 2,485 oats**

   - **A colon - 256 marshmallows : 2,485 oats**

3. Give each student a handful of cereal from the box. Have each student count their pieces and write the ratio of marshmallows to oats in the 3 different ways. Call on various students to share their answers.

4. Next, work through some examples together.
   For example:

   - **What is the ratio of boys to girls in the class?**

Lesson Plan

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- **What is the ratio of desks to tables in this room?**

Also, show some pictures to determine ratio.

Example: (using animal pictures – real or animated)

- **What is the ratio of clown fish to sharks?**
- **What is the ratio of lions to zebras?**

Work through these examples together, making sure to emphasize the order in which is the question is asked is the order the ratio should be presented in. Also, display all three ways to write each ratio, calling on students to demonstrate their knowledge when appropriate.

5. Guided practice – give students the following problems

- **Susie has 4 shirts and 1 hat. Write the ratio of Susie's shirts to hats in 3 different ways.**
- **Mike has 1 apple and 3 bananas in his lunchbox. Write the ratio of apples to bananas 3 different ways.**
- **Max has 5 dogs and 2 cats. Write the ratio of cats to dogs 3 different ways.**

Challenge: The debate team has 3 times as many girls as boys. Write the ratio of girls to boys 3 different ways.

Monitor as students work. Then demonstrate the answers (or have students do so when appropriate) on the board/projector to each of the questions.

Evaluation

As a formative assessment, have students complete the following questions as an exit ticket.

- **For every 5 cups of flour in the recipe, there are 2 cups of milk. Write the ratio of flour to milk in 3 different ways.**
- **Ellie made 3 times as many goals as Livy. What is the ratio of Ellie's goals to Livy's goals? Write the ratio in 3 different ways.**