



## LIFE SKILLS EDUCATION

### The Ratios for a Healthy Lifestyle

**Subject / Skill(s):** Math / Staying Healthy

**Grade(s):** 6

**Standards Addressed:**

- Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”
- 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. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is  $3/4$  cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”
- 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.
  - 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.
  - 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.
  - Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
- Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for  $(2/3) \div (3/4)$  and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that  $(2/3) \div (3/4) = 8/9$  because  $3/4$  of  $8/9$  is  $2/3$ . (In general,  $(a/b) \div (c/d) = ad/bc$ .) How much chocolate will each person get if 3 people share  $1/2$  lb of chocolate equally? How many  $3/4$ -cup servings are in  $2/3$  of a cup of yogurt? How wide is a rectangular strip of land with length  $3/4$  mi and area  $1/2$  square mi?

**Objective:** *To understand ratio concepts and use ratio reasoning to solve problems. To apply and extend previous understandings of multiplication and division to divide fractions by fractions. To recognize that sleep, diet, and exercise affect a person’s effort to achieve a goal. To discuss how a balanced diet affects a person’s health and well-being. To create weekly plans for eating well, sleeping regularly, and exercising.*

**Estimated Total Time:** 75 minutes

**Materials Needed:**

- One copy each of the “Getting Ahead (A)” and “Getting Ahead (B)” activity sheets (#4 and #5) cut into squares, for a total of 32 squares (Part I)
- A cap, hat, or small basket to hold the squares (Part I)
- One copy of the “My Plate” activity sheet (#6) for each student (Part II)

# Leader's Guide

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## Starter (5 minutes)

1. Give students the following scenario:
  - a. *Sammy bought a car. It's an expensive car, very well made, a top-of-the-line machine. Sammy says that the car runs so well that it doesn't need any care. He never washes it, doesn't add oil, and tries to drive it everywhere without adding any gas. When he does add gas, he buys the cheapest brand, so the car runs well for a few miles, but over time, the gunk from the cheap gas starts to build up in the engine.*
2. Ask, "What do you think will happen to the car?" (*It will break down.*) Say, "A car is a machine, and without proper care, the machine breaks down. What do you think happens when the machine is well taken care of?" (*It runs well.*)
3. Tell students that the human body runs exactly the same way. If you take good care of it, it will run very well for a long time. If not, it breaks down. Explain that in today's session, students will learn how to keep their bodies running well.

## Getting Ahead (30 minutes)

1. **Students play a quick game that emphasizes the importance of healthy living.**
  - a. Before class, cut the two "Getting Ahead" activity sheets (#4 and #5) into individual squares. Place all the squares into a cap or basket and mix them up. If you have more than 32 students, ask some students to assist you by distributing and collecting squares, or by working together as an observation team. Observation teams can track progress, keep time, and generally act as referees. Walk from one wall of your classroom to the opposite wall, counting your steps to determine how many it takes to cross the room. Decide on which side of the room you wish to have students line up. Explain that the goal of the game is for students to reach the wall on the other side of the room.
  - b. Tell students to line up against one wall of the classroom. Have them pick a square from the cap or basket, read the square aloud, and take the number of steps indicated. Once each student has drawn and read a square, give the following directions:
    - i. Raise your hand if you had a square that said you ate cookies or a candy bar, or that you drank soda or coffee. All those with their hands up must now take five steps backward.
    - ii. Raise your hand if you had a square that said you stayed up late—regardless of the reason. All those with their hands up must now take three steps backward. Invite students to pick another square.
    - iii. When the squares are gone, collect them in the cap and continue the game. After all students have had a second turn, repeat the directions for taking steps backward. Continue in this manner until some or most students have reached the other side of the room.
2. **Students make observations about the game.**
  - a. Ask questions such as the following to help students generate observations about the game:
    - i. What types of things helped people cross the room quickly? (They were helped by eating good food, getting a full night's sleep, and getting some exercise.)
    - ii. What types of things slowed people down? (They were slowed down by eating cookies and candy, drinking soda and coffee, staying up late, and sitting around watching TV.)
    - iii. Why do you think these behaviors might keep people from getting ahead in real life?
  - b. Explain that foods high in sugar (such as cookies, candy, and soda) or caffeine (such as soda and coffee) give a burst of energy, which the body quickly uses up. When this happens, the person feels a drop in energy—he or she actually ends up feeling tired and lethargic.
  - c. Ask students to give examples of how sleep and exercise might affect a person's level of energy, mood, and performance. Explain that eating and sleeping well, along with physical activity, are the factors that enable people to look and feel their best, because these things create energy.

## Creating Energy (15 minutes)

1. **Students analyze the benefits of a balanced diet.**
  - a. Introduce the concept of a balanced diet by asking questions such as the following:
    - i. Does the food you eat affect your energy level and your ability to do things well? (*Yes.*)
    - ii. What does it mean to have a balanced diet? (*A balanced diet means eating different kinds of foods in proper quantities.*)
    - iii. What are some benefits of eating a balanced diet? (*Eating a balanced diet allows you to think better; gives your body the nutrients it needs to work and grow, so that your brain can do its job; helps you to look your best; keeps your skin healthy; and makes your hair and bones stronger.*)

## 2. Students learn about important food groups.

- a. Distribute copies of the “MyPlate” activity sheet (#6). Ask volunteers to explain why they think this chart is in the shape of a plate. (Students should mention that the design shows them what their own meals should look like.) Then, briefly discuss each section of the chart:
  - i. Grains: Breads, cereals, rice, and pasta are foods that are high in proteins and carbohydrates. Proteins and carbohydrates are important for creating energy. Half of the grains we eat should be whole (e.g., whole-grain bread).
  - ii. Fruits and Vegetables: Vegetables and fruits are high in vitamins and nutrients. They help the body fight infections and disease. Fruits are also a source of sugar, which gives the body energy when eaten in small amounts. Notice how much space these two sections take up. This means that half of your plate should be filled with fruits and vegetables.
  - iii. Protein: Meats, poultry, fish, beans, eggs, and nuts are important sources of proteins, which are considered the building blocks of the body.
  - iv. Dairy: The small blue cup above the plate represents fat-free and low-fat dairy products—like yogurt, milk, and cheese—which are high in vitamins and an important nutrient called calcium. Calcium helps bones, teeth, and nails grow strong. We should have at least one cup of dairy with each meal. People who are lactose intolerant can have lactose-free dairy or calcium fortified soy milk.
  - v. Note that foods high in sugar and fat aren't on the plate. It is important to eat these foods sparingly, because they slow the body down. Sugary foods include soda and candy. Foods that are high in fats and oils include potato chips, french fries, hamburgers, and fried chicken. Eating too many of these kinds of foods can affect your skin and your body in unhealthy ways. Point out that the purpose of the “MyPlate” chart is to show what kinds of foods people should eat and—most importantly—in what amounts. Following this chart ensures a balanced diet.

## 3. Students reflect on the foods they eat.

- a. Ask students to list on a sheet of paper what they ate yesterday for breakfast, lunch, and dinner. They should also list snacks they may have eaten. Ask students to compare their lists of foods with those listed on the “MyPlate” chart, and to place a check mark in each category for each food they ate from that category.
- b. Have students analyze their check marks and determine from which food groups they ate too much and from which they need to eat more. Encourage them to make notes in each section of the “MyPlate” chart. Tell students to save their activity sheets for use in the next class.

## Create a Pie Chart / Word Problem (20 minutes)

1. Students create a pie chart using their calculations of their percentages of their daily intake of each food group.
  - a. Using the information below, calculate the daily percentage of each food group. Round to the nearest integer. Create a pie chart using each food group and display the percentages of each group.
    - i. Grains: 5 ounces (example:  $\frac{1}{2}$  cup cooked rice or pasta is considered 1 ounce)
    - ii. Fruits: 2 cups
    - iii. Vegetables: 2  $\frac{1}{2}$  cups
    - iv. Dairy: 3 cups
    - v. Protein: 5 ounces (example:  $\frac{1}{4}$  cup cooked beans is considered 1 ounce)
    - vi. Answers:
      - Total cups – 11  $\frac{1}{4}$  cups
      - Grains 2  $\frac{1}{2}$  cups 22%
      - Fruits 2 cups 18%
      - Vegetables 2  $\frac{1}{2}$  cups 22%
      - Dairy 3 cups 27%
      - Protein 1  $\frac{1}{4}$  cups 11%
  - b. Using the information from students’ MyPlate diagram (Part 2 Creating Energy), have students estimate the number of cups they ate for each food group. Students will calculate the daily percentage of each food group. Compare their percentages to the daily percentage found in step 1.
  - c. Sample Extension Problems:
    - i. How many  $\frac{3}{4}$  cup servings are in  $\frac{2}{3}$  cup of yogurt?
    - ii. If 4 people are sharing 3 lbs. of tomatoes, how many lbs. will each person receive?
    - iii. A recipe has a ratio of 3 cups of flour to 4 cups of sugar, what is the ratio of flour to sugar?
    - iv. You are preparing pasta salad for an unknown group of people. Below is the ratio amount of olive oil for a variety of servings of pasta salad. Find the pattern and fill in the missing information. Plot your data on a coordinate plane.

Cups of Olive Oil	Servings
1/2	4
1	
	12
	16
2 1/2	
3	24

### **Conclusion (5 minutes)**

Ask students how comparing their personal daily food group intake percentages with the recommended daily food intake percentages has altered their understanding of nutrition. Have students describe how to live a healthy lifestyle. Elicit from students the following key points that were taught in this lesson:

- When you are healthy, you look, feel, think, and do your best.
- The food you eat affects your energy level and your health.
- Exercise increases your energy, strengthens your body, and relieves stress.

### **Assessment:**

1. List three reasons why it is a good idea to avoid eating foods with too much caffeine or sugar.
2. What are the five food groups? What does each food group give the body?
3. What does it mean to have a balanced diet? Why is it important to have a balanced diet?