Unit 5, Lesson 17

More Perimeter Problems

Let's solve problems about the perimeter of various shapes.

Warm-up

True or False: Fractions and Whole Numbers

Decide if each statement is true or false. Be prepared to explain your reasoning.

- $\frac{8}{12} + \frac{3}{12} + \frac{9}{12} + \frac{4}{12} = 2$

- $\frac{20}{4} + \frac{10}{4} + \frac{6}{4} = 8$

- $2 = \frac{59}{100} + \frac{41}{100} + \frac{89}{100} + \frac{11}{100}$

- $2 = \frac{3}{8} + \frac{3}{8} + \frac{12}{8}$

Activity 1

Along the Walls in Tiny Steps

A rectangular room has a perimeter of 39 feet and a length of $10\frac{1}{2}$ feet.

1. What is the width of the room in feet? Explain or show your reasoning.

2. An ant walked along two walls of the room, always in a straight line. It started in one corner and ended up in a corner opposite of where it started. How many inches did it travel? Explain or show your reasoning.

Activity 2

Unknown Measurements

Your teacher has posted six quadrilaterals around the room. Each one has an unknown side length or an unknown perimeter.

1. Choose two diagrams—one with an unknown side length and another with an unknown perimeter. Make sure all six shapes will be visited by at least one person in your group

   Find the unknown values. Show your reasoning and remember to include the units.

2. Discuss your responses with your group until everyone agrees on the unknown measurements for all six figures.
3. Answer one of the following questions. Explain or show your reasoning.
   a. The perimeter of B is how many times the perimeter of D?

   b. The perimeter of one figure is 1,000 times that of another figure. Which are the two figures?

   c. The perimeter of F is how many times the perimeter of B?

Section C Summary

We solved problems and puzzles by converting units of measurement—gallons, quarts, cups, pounds, ounces, yards, feet, and inches—and by comparing measurements in different units. We saw that the problems could be solved in different ways**.**

For example, if Priya threw a disc 16 yards and this is 4 times as far as the distance Jada threw in feet, how far did Jada throw the disc?

- One way to solve this problem is by finding $16 \div 4$, which is Jada's throw distance in yards ($16 \div 4 = 4$), and then by multiplying the result to convert the yards to feet ($4 \times 3 = 12$, so 4 yards is 12 feet).
- Another way is first to convert the 16 yards to feet ($16 \times 3 = 48$, so 16 yards is 48 feet), and then to divide the result by 4 to find Jada's throw distance ($48 \div 4 = 12$).

In the last two lessons, we solved multiplication and comparison problems that involve the perimeter of rectangles and some other quadrilaterals.