Lesson 16: Compare Perimeters of Rectangles

- Let’s solve problems about rectangles of different sizes.

Warm-up: Number Talk: Two and Four Times a Fraction

Find the value of each expression mentally.

- $2 \times \frac{3}{2}$
- $4 \times \frac{3}{4}$
- $4 \times \frac{9}{4}$
- $\left(2 \times \frac{3}{4}\right) + \left(2 \times \frac{9}{4}\right)$

16.1: Pipe-cleaner Perimeters

How many different rectangles can be made using the entire length of one 12-inch pipe cleaner?

1. Record as many pairs of side lengths as you can think of. Be prepared to explain your reasoning.

length (inches)	width (inches)

2. Which pair represent the side lengths of a square?

16.2: Perimeter Predictions

1. Your teacher will assign a pair of side lengths to you. Use a pipe cleaner to build a rectangle with those side lengths.

   What is the perimeter of your rectangle?

2. Two 12-inch pipe cleaners are joined (with no overlaps) to make a longer stick and then used to build a square.

   a. What is the side length of this square? What is its perimeter?

   b. How do the side length and perimeter of this square compare to those of the first square?

3. Several pipe cleaners are joined (with no overlaps) to build a square with a perimeter of 60 inches.

   a. How many pipe cleaners are used? Explain or show how you know.

   b. What is the side length of the square?

   c. How do the side length and perimeter compare to those of the first square?

16.3: Gridded Rectangles

1. Draw the following rectangles on centimeter grid paper. Label each rectangle. Record the side lengths and the perimeter of each.

    - Rectangle A has a perimeter of 16 centimeters.
    - Rectangle B has side lengths that are 3 times the side lengths of rectangle A.
    - Rectangle C has side lengths that are $\frac{1}{2}$ of the side lengths of B.

rectangle	length (cm)	width (cm)	perimeter (cm)
A			16
B			
C			

2. Rectangle D has a perimeter of 96 centimeters.

    The perimeter of D is:

    - __________ times the perimeter of A
    - __________ times the perimeter of B
    - __________ times the perimeter of C