



Measuring Perimeter with Rulers

Overview:

Students will learn how to measure the perimeter of different rectangular objects using a ruler. This skill will be critical for future lessons in the garden. This lesson can be used to reteach elementary school math.

Objectives:

At the end of the lesson students will be able to:

-  Write the formula for determining the perimeter of something.
($P = l + l + w + w$); ($P = 2l + 2w$); or ($P = 2(l+w)$)
-  Know the difference between the length and width of a rectangle or square.
-  Measure rectangular objects using rulers.
-  Solve real world and mathematical problems involving perimeters.

Materials:

-  Enough rulers for each student
-  Handout: “Measuring with Rulers”
-  Rectangular objects to measure

On the Board:

-  Vocabulary
-  Student Reflection Questions

Suggested Snack:

-  See our Healthy Snack Database for ideas.

Preparation:

-  Prior to the lesson, review the handout.
-  Set various rectangular objects on tables for students to measure.

Vocabulary:

- | | | |
|---|---|---|
|  perimeter |  width (shorter side of a rectangle) |  foot |
|  length (longer side of a rectangle) |  inch |  ruler |

Learning Activities:

- I. Presentation: Using a Ruler (10 min.)
 - A. Tell students that today’s lesson will involve using a ruler to measure the perimeter of different items.

- B. Draw a large rectangle on the board. Ask students to turn and talk and tell another student what the perimeter is. Then ask a student to come up and describe/point out what the perimeter is and explain how to calculate it.
- Define *perimeter*: the continuous line forming the boundary of a closed, two-dimensional geometric figure.
 - Ask students, “What is the formula for perimeter of a rectangle?” Share your answer with a partner. Ask a student to come up and write the formula for the perimeter of a rectangle on the board:
 - $P = l + l + w + w$; $P = 2l + 2w$
 - Perimeter (ft) = 2 x (length + width)
- C. Distribute Handout: “Measuring with Rulers” and a ruler to each student. Have students complete Question #1 based on the presentation.
2. Handout Activity (20 min.)
- A. Draw a diagram of a ruler on the board so that it is easy to see by all the students. Describe all the components of the ruler, including:
- Units (feet and inches. How many inches are in one foot?)
 - Show them which line indicates a foot. Show them which line indicates an inch.
 - Show them millimeter and centimeters. Ask how many millimeters are in a centimeter?
- B. On each student table or desk, lay out different rectangular items like binders, brochures, books, etc. Have students measure 5 different items and record data on Question #2 of their handout.
- C. Have students complete Question #3 of their handouts in pairs.
- D. Bring the class back together and ask each pair to share their findings.
3. Snack (5 min.)
4. Have students answer the reflection questions in their garden journals. (5 min.)

Student Reflection Questions:

1. Did you have any difficulty measuring the items? If yes, why?
2. Describe another instance, outside your math class, where you would need to measure the perimeter of something in order to accomplish a task.

Assessment Questions:

1. How many formulas can you write for determining the perimeter of a two-dimensional rectangle or square? ($P = 2(l + w) = l + l + w + w = 2l + 2w$)
2. You have a rectangular garden bed that is 9 ft long by 5 ft wide. What is the perimeter? (28 ft.)

Standards:

CCSS: Mathematics Review

CCSS.MATH.CONTENT.2.MD.A.1

Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

CCSS.MATH.CONTENT.3.MD.D.8

Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

6th Grade

(Perimeter is a scaffold to this standard.)

CCSS.Math.Content.6.G.A.2

Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l w h$ and $V = b h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

(When writing the formulas for perimeter.)

CCSS.Math.Content.6.EE.A.2.a

Write expressions that record operations with numbers and with letters standing for numbers.