

Title: BeeBot Perimeter Lesson

Grade 3:

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Goal: To measure and calculate the perimeter of a square and a rectangle, through programming a BeeBot to follow the path of each quadrilateral.

Objectives:

1. The students will learn, through trial and error, how to program the BeeBot to move around the quadrilaterals effectively.
2. The students will observe that the BeeBot moves a certain length each time before it stops. They may realize that in order to program the BeeBot effectively, they have to plan the length of each distance. To do this, the arrows to move forward may have to be pressed more than once before the BeeBot travels the full length of each side side.
3. The student will realize that the lengths can be measured by a ruler, and that the BeeBot moves the same distance each time.
4. The students will use strips of paper, and then rulers to measure each side of the quadrilaterals.
5. The students will discover the similarities in distance of both sets of parallel lines in each quadrilateral.
6. Students will learn the meaning of the words quadrilateral, and parallel, and perimeter.

Materials:

1. Masking tape

2. BeeBots
3. Strips of paper measured and cut to 5 inch lengths.
4. Rulers

Procedure:

Step 1. Measure two pieces of tape, and tape to the floor in the shape of an L. One will be 5 inches, and the other will be 10 inches.

Step 2. Have the class meet in a group. Tell them that they are going to figure out how to make the BeeBot trace the L on the floor. Tell them how to turn it on, but nothing more. Assign partners.

Step 3. After the students program the BeeBots to trace the L, meet again as a class to discuss what worked, both in programming, and in working with their partner. Keep a list of programming strategies, and strategies for working with a partner.

Step 4. The students would have programmed the BeeBot to move twice to cover the distance of the longer side of the L. Give the students the premeasured strips of paper, and ask them to measure what would be a square, or a rectangle. They will realize that the lengths of the sides will only make a rectangle.

Step 5. Have students measure each side with a ruler, and discuss what makes a quadrilateral, a rectangle. They will realize that there are 2 parallel sides of a longer length, and two parallel sides of a shorter length.

Step 6: The student may then program their BeeBot to travel the perimeter of their rectangle, and calculate the perimeter.

Step 6: meet with the class to discuss how to measure and find the perimeter of a rectangle

Assessment:

The teacher will observe the BeeBot as it moves the perimeter of the rectangle. The teacher may also ask each pair what parallel means. The students will find the perimeter of rectangles and squares on a worksheet at their seats. The measurement of each side will be written for them to calculate.