

Developing an Understanding for Square Root

Part I

- Create square on the geoboard.
- Find the area of the square.
- Find the length of one side of the square.
- Collect this data in a chart.

Area	Length of side	Square Root Statement

- Write a statement similar to The square root of 9 is 3 or $3 = \sqrt{9}$ for each square you created.

- Create a square on the geoboard that you believe holds 2 square units.
 - How do you know your shape is a square?
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- How do you know that your square has an area of 2?
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- If the square has an area of 2 how long is its side? Write a square root statement similar to the statements you completed in the last chart.
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- Use a piece of paper to compare a segment that equals 1 unit with the length of the side. What is your conclusion?
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- Circumscribe the square with a square that has vertical and horizontal sides.
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- Compare the area of the two shapes and the lengths of their sides.
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- Record the data in a chart on the next page.
 - On a geoboard create a squares with area of 4, 16, 36, 64, and 100.
 - Create an inscribed figure inside each square that connects the center peg or midpoint of each side.
 - Convince yourself and your group that each inscribed figure is a square.
 - Determine the area, the exact length, and an approximate length of each side of the inscribed square.
 - Record the data in the chart on the next page.

Area of large square	Length of the side of the large square	Area of small square	Length of the side of the small square	Approx. length of the side of the small square

Describe what you have learned about square root from the chart and the building the squares.