Area of a Square

Area of a Square

Click here to download lesson.

Summary	Students will develop a quadratic equation to represent the area of a square.
Goals	1. Students will use the concept of area to represent a simple squared function. 2. Students will graph area of a square as a function of side length.
Materials	Handouts
Duration	45 minutes
Keywords	Production of Equations Production of Graphs Quadratic Functions

Activity Plan:

1. Use handout to review area of a square.

2. Consider area of a square as a function of side length. Return to class discussion of area of a square (Handout Page 1):

    How do we calculate the area of a square or rectangle?

3. Introduce the side measure of a square as a variable, x. (Handout Page 2)

    Given the side measure, how can we write the expression for area?

    If students only use $x*x$ or $(x)(x)$, introduce x^2 notation.

4. Have students construct a table where they can work out the area based on the side length.

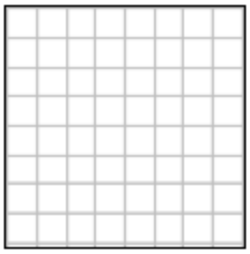
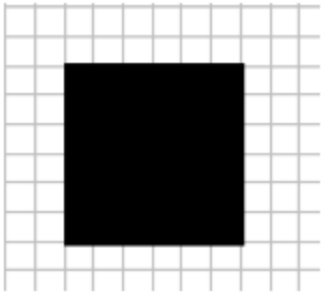
5. Move to graph – students graph their values of area as a function of side length.

6. Introduce vocabulary *quadratic function*.

Handout: Area of a Square (Page 1)

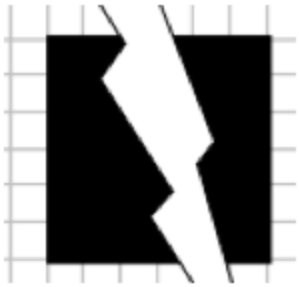
Name: _____ Date: _____

For each item, find the area of the square. You can assume that the grid that is shown is squares.

	What is the area of the whole picture?	How did you know?
	If you know that the black area is a square, can you find the area of it? If you can find it, what is the area?	How did you know?

Handout: Area of a Square **(Page 2)**

Name: _____ Date: _____

	This picture is like a broken piece of paper. We don't know what happened to the middle part. If we know that the black area used to be a square, can you find the area ***of the original black area***? If you can find it, what is the area?	How did you know?
	Here's another broken piece of paper. If we know that the black area used to be a square, can you find the area ***of the original black area***? If you can find it, what is the area?	How did you know?