Name _____

Date _____

EXPLORATIONS

Activity 17

Perimeter and Area of a Square

Construct the geometric object by following the instructions below, and then answer the questions about the object.

1. Create a square.
   a. From the Lines Toolbar, select **Regular Polygon**.
   b. Click once in the center of the screen.
   c. Drag the mouse and a circle will appear.
   d. Click and hold until a number appears in the center of the circle. Drag until the number is 4 and an outline of a square appears. Click once.
2. Measure one side of the square and label it **side length =** .
3. Using the Distance and Length tool again, measure the perimeter of the square by clicking on one side when the message **Perimeter of this polygon** appears.
4. Label this measure **perimeter =** .
5. From the Measure Toolbar, select **Area**.
6. Move the cursor toward the square until the message ***This regular polygon*** appears. Click once.
7. Label this measure **area =** .
8. Using the pointer, drag one corner of the square until its side length is 1cm.
9. Create a table that is three columns wide by six rows high.
10. From the Measure Toolbar, select **Tabulate**.
11. When the message ***Tabulate this value*** appears, click on the side length.
12. When the message ***Tabulate this value*** appears, click on the perimeter.
13. When the message ***Tabulate this value*** appears, click on the area.
14. Using the pointer, drag a corner until the side length is 2cm.
15. From the Measure Toolbar, select **Tabulate**.
16. Click on the length of the side and all three measures will appear in the table.

17. Repeat this process for side lengths of 3, 4, 5 and 6cm.

18. Record the measurements in the table below. (Round to the nearest whole number.)

Side Length	Perimeter	Area

19. Do you notice a pattern in the perimeter column? If yes, describe the pattern.

_____

_____

_____

20. List the first six perfect square numbers (*Hint*: 1, 4.).

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21. How do these numbers compare to the numbers in the area column?

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22. What can you conclude about perfect square numbers and the area of a square?

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