## Sierpinski's Carpet Exploration Questions

Run several stages of the <u>Sierpinski's Carpet Activity</u>, and answer the following questions:

• Fill in the table:

Iteration	1	2	3	4
Number of Shaded Squares				
Area of one Shaded Square				
Total Shaded Area				

- What pattern do you see in the numbers for the number of shaded squares? Can you build a formula for the area of one shaded square at the n-th stage?
- What pattern do you see in the numbers for the area of one shaded square? Can you build a formula for the area of one shaded square at the n-th stage?
- What patterns do you see in the numbers for the total shaded area? Can you build a formula for the total area at the n-th stage?
- What do you think happens to these numbers as the number of stages approaches infinity?
- Compare these results for <u>the Sierpinski's Triangle</u>. Does the "three-ness" of a triangle the "four-ness" of a square seem to play a role in these numbers?