

Similar Figures and Area

Pattern blocks come in various shapes. First, sort your pattern blocks by shape and fill in the blanks below with the shape that goes with each color:

Red _____ Green _____ Blue _____

White _____ Orange _____ Yellow _____

We're going to let each side length of the orange square have a length of one unit. Trace each block in the space below and label each of the side lengths based on the square measure. Also, find the perimeter of each block.

Using only shapes of the same type in each figure, try to make a figure using your pattern blocks that has side lengths exactly twice that of one block. For example, using only squares make a square that has side lengths 2 by 2. These are called *similar* figures.

With which figures can this be accomplished? _____

With which figures can this not be accomplished? _____

Find the perimeter of each of these double-sized shapes. What is the "new" perimeter for each shape?

Trapezoid: _____ Hexagon: _____ Square: _____ Triangle: _____ Parallelogram: _____ Rhombus _____

If each individual piece represents an area of one, what is the area of each shape that has double the side lengths of the original piece? _____

With the figures that this previous task was accomplished, repeat the activity making side lengths of three times the original length.

What is the "new" perimeter for each triple-sized shape?

Trapezoid: _____ Hexagon: _____ Square: _____ Triangle: _____ Parallelogram: _____ Rhombus _____

What is the area of each shape that has triple the side lengths of the original piece? _____

If we were to make a similar shape that has side lengths 5 times the original lengths of any (workable) piece, what would the perimeter be? _____

If we were to make a similar shape that has side lengths 5 times the original lengths of any (workable) piece, what would the area be? _____

In general, if we make a similar piece that has side lengths "x" times the original piece, what would the perimeter of the similar piece be? _____

In general, if we make a similar piece that has side lengths "x" times the original piece, what would the area of the similar piece be? _____