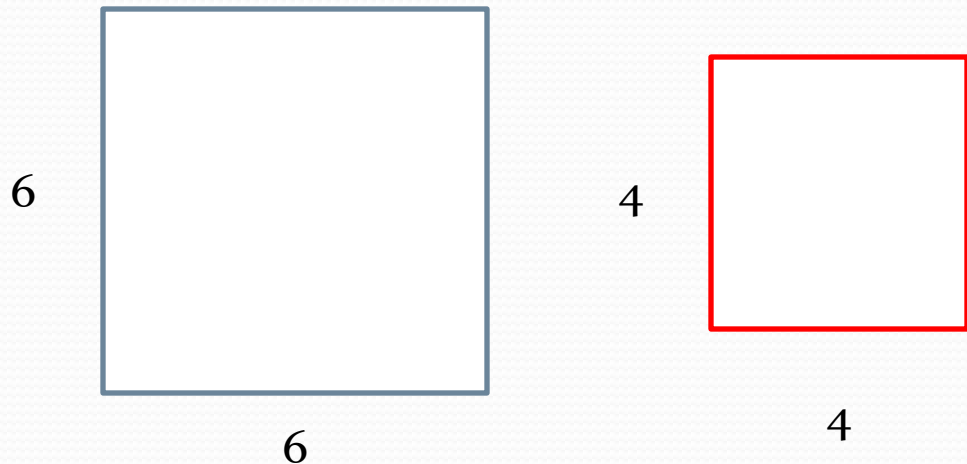# Dilations

What is a dilation

- A dilation is a transformation that changes the size of a figure
  - The size of the figure changes but shape of the figure does not

Scale factors

- The scale factor of a dilation describes how much a figure is enlarged or reduced.

For example: the scale factor of these squares is 2
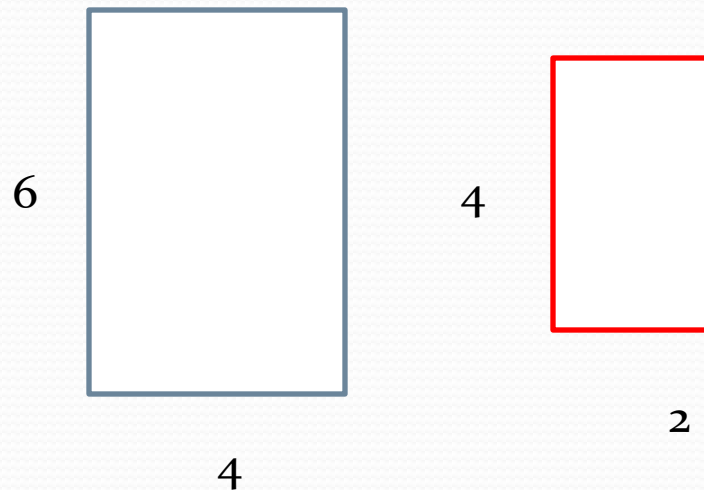
6

6

4

4

Is it a dilation?

To find out if a transformation is a dilation, compare the ratios of the corresponding side lengths

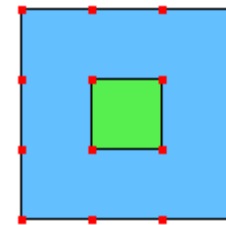The ratio for the blue rectangle is $\frac{6}{4} = \frac{3}{2}$

The ratio for the red rectangle is $\frac{4}{2} = \frac{2}{1}$

This is not a dilation because the ratios are not equal $\frac{3}{2} \neq \frac{2}{1}$

6

4

4

2

Ideas for application

- Use manipulatives to create concrete examples of dilations
  - Make a scale model of a local building

  - Use a geoboard to make a square. Then double the side lengths (dilation) with the same point

Making connections

- Dilations addresses the high school Core Content Connectors of
  - H.ME.2b1 Determine the dimensions of a figure after dilation

  - Understanding proportional relationships are perquisites for addressing this content standard