

## Nearpod Dilations Notes

KEY

### REVIEW: Similar Figures

- ❖ Similar figures have the exact same Shape but different size.
- ❖ On similar figures, corresponding side lengths are proportional and corresponding angle measures are Congruent.

### Dilations and Scale Factor

- ❖ A dilation creates a NEW Similar figure that is either larger or smaller than the OLD figure.
- ❖ A dilation uses a Scale factor to enlarge or reduce a figure. A figure that has been enlarged or reduced is called a dilation.
- ❖ We use the variable k to represent scale factor.
- ❖ When the center of dilation is the origin, the coordinates of the preimage (OLD) are multiplied by the Scale factor to create the image (NEW).
- ❖ When  $k > 1$  we have an enlargement. → gets bigger
- ❖ When  $0 < k < 1$ , we have a reduction. → gets smaller

### Algebraic Rule

The ALGEBRAIC RULE to describe dilations is ALWAYS written as:

$$(x, y) \rightarrow (kx, ky) \text{ where } k \text{ is the scale factor}$$

\*replace k with scale factor to write algebraic rule!

A reduction with a scale factor of 0.5 would have the algebraic rule  $(x, y) \rightarrow (0.5x, 0.5y)$

An enlargement with a scale factor of 7 would have the algebraic rule  $(x, y) \rightarrow (7x, 7y)$

\*\*\* We dilate both the x and y coordinates by the same scale factor! \*\*\*