

# Geometry Unit 9: Dilation and similarity

Bronx Early College Academy

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13 March 2023 - 31 March 2023

## 9.1 Dilation introduction

13 March

## 9.2 Solving for $k$ , similarity

16 March

# Learning Target: I can dilate a triangle

HSG.SRT.B.5 Use similarity criteria for triangles to solve problems

9.1 Monday 13 March

Do Now

1.  $12 \times \frac{1}{3} =$

2.  $10 \times \frac{7}{5} =$

3. Find  $x$  if  $9 \cdot x = 15$

Lesson: Dilation, transformations, fraction operations

Test results, check Jump rope

Homework: Complete the classwork practice, Deltamath problem set

## A dilation centered at the origin with scale factor $k = 2$

$$\triangle ABC \rightarrow \triangle A'B'C'$$

$$A(0, 0) \rightarrow A'(0, 0)$$

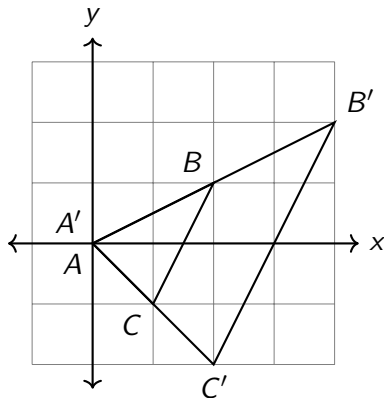
$$B(2, 1) \rightarrow B'(4, 2)$$

$$C(1, -1) \rightarrow C'(2, -2)$$

**Dilation** A transformation stretching objects on the plane by a scale factor away from a point

**Center** Dilation stretches figures away from a stationary point, the “center of dilation”

**Scale factor** The ratio  $k$  of the lengths of the corresponding sides of dilated figures

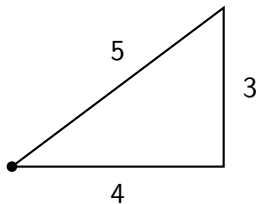


## Learning Target: I can identify and explain similarity

HSG.SRT.B.5 Use similarity criteria for triangles to solve problems

9.2 Thursday 16 March

Do Now: A triangle with side lengths 3, 4, and 5 is dilated by a factor of  $k = 2$  centered at one of its vertices. Find the lengths of the image's sides.



Lesson: Similar objects, solving for scale factor  $k$

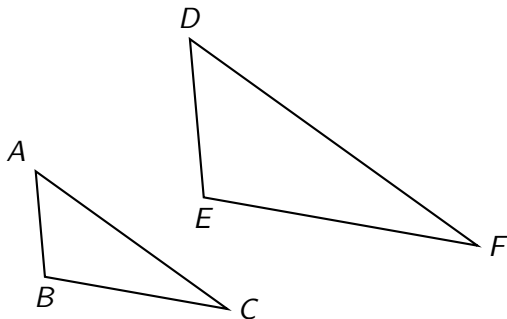
Homework: Complete the classwork practice, Deltamath problem set

## Similarity, corresponding parts, and scaled proportions

**Similarity** Objects with the same shape, but not necessarily the same size, are similar. Their corresponding angles are congruent and their corresponding sides are proportional.

**Notation** This is the symbol for similar triangles:  $\triangle ABC \sim \triangle DEF$

**Definition** Two figures are similar if one or more rigid motions and a dilation will carry one figure onto the other.



## Notebook check scoring

Start quickly at the beginning of class: notebook, pencil, folder, calculator; get to work

Jumprope mastery score

1. I have a notebook  $\rightarrow$  1
2. I have class notes  $\rightarrow$  2
3. I have stars indicating I quickly sit down and write the learning target  $\rightarrow$  3
4. I have stars and I complete the Do Now right away  $\rightarrow$  4