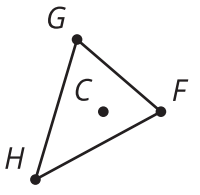
Unit 3 Lesson 3: Measuring Dilations

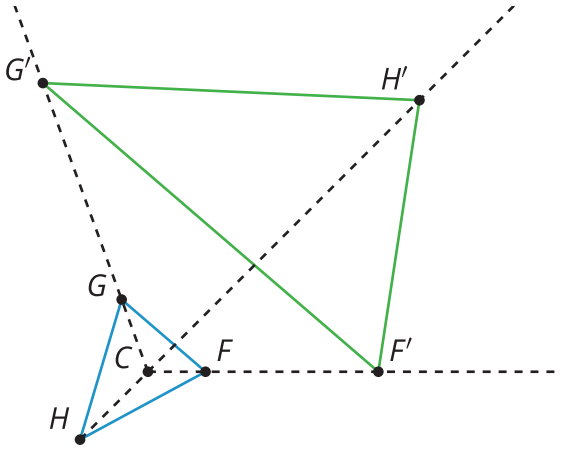
1 Dilating Out (Warm up)

Student Task Statement

Dilate triangle FGH using center C and a scale factor of 3.



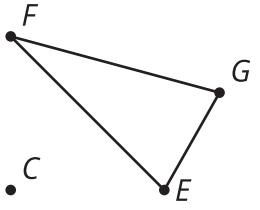
Activity Synthesis



2 All the Scale Factors

Student Task Statement

Here is a center of dilation and a triangle.

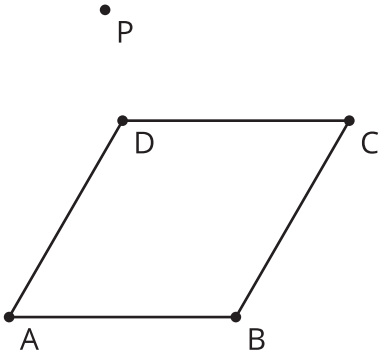


1. Measure the sides of triangle EFG (to the nearest mm).
2. Your teacher will assign you a scale factor. Predict the relative lengths of the original figure and the image after you dilate by your scale factor.
3. Dilate triangle EFG using center C and your scale factor.
4. How does your prediction compare to the image you drew?
5. Use tracing paper to copy point C, triangle EFG, and your dilation. Label your tracing paper with your scale factor.
6. Align your tracing paper with your partner's. What do you notice?

3 What Stays the Same?

Student Task Statement

1. Dilate quadrilateral $ABCD$ using center P and your scale factor.



2. Complete the table.

Ratio	$\frac{PA'}{PA}$	$\frac{PB'}{PB}$	$\frac{PC'}{PC}$	$\frac{PD'}{PD}$
Value				

3. What do you notice? Can you prove your conjecture?

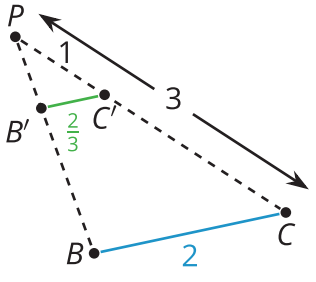
4. Complete the table.

Ratio	$\frac{B'A'}{BA}$	$\frac{C'B'}{CB}$	$\frac{D'C'}{DC}$	$\frac{A'D'}{AD}$
Value				

5. What do you notice? Does the same reasoning you just used also prove this conjecture?

Activity Synthesis

$PC : PC' = 3 : 1$, $BC : B'C' = 2 : \frac{2}{3}$



Images for Activity Synthesis