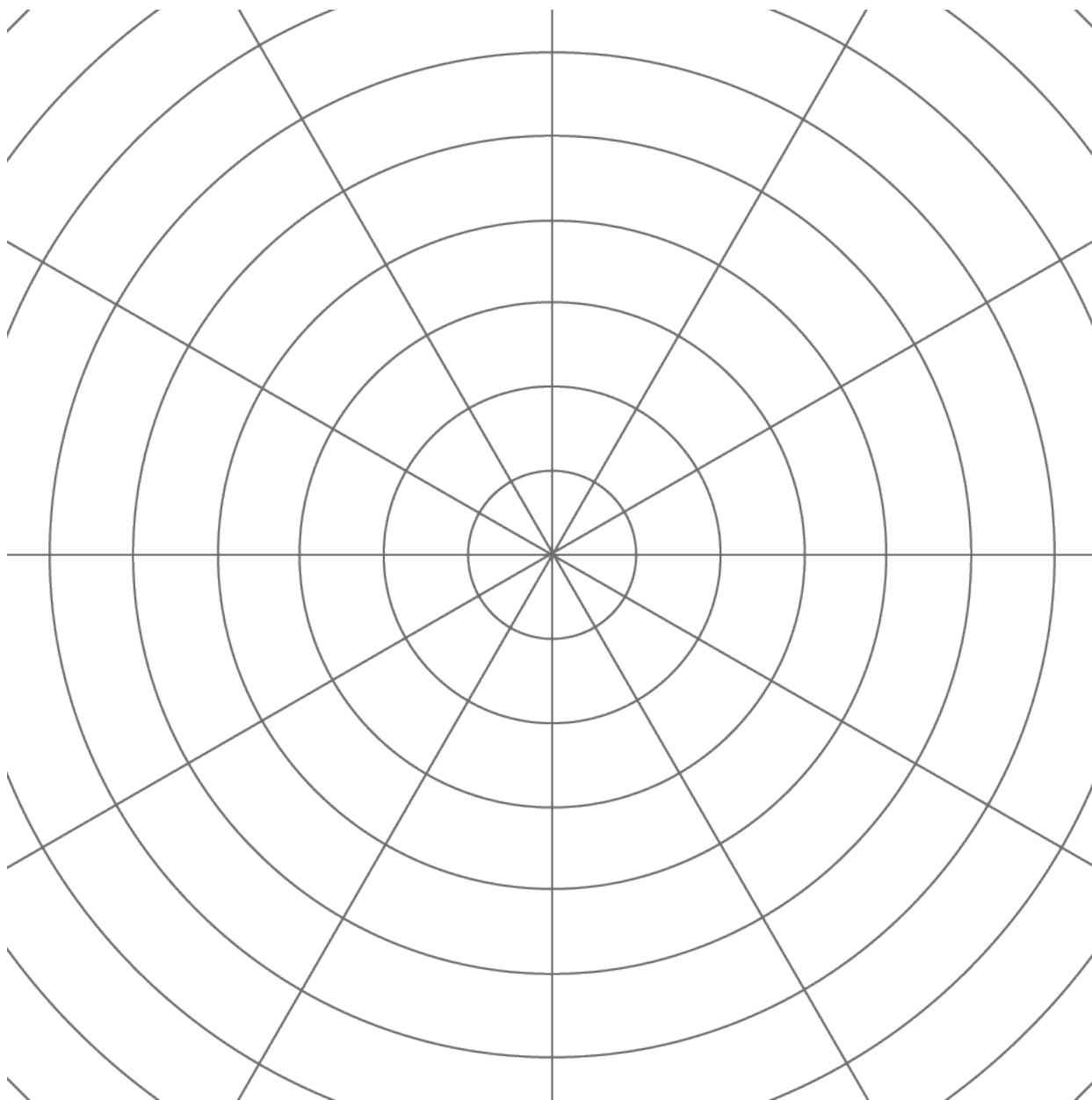


Unit 2 Lesson 2: Circular Grid

1 Notice and Wonder: Concentric Circles (Warm up)

Student Task Statement



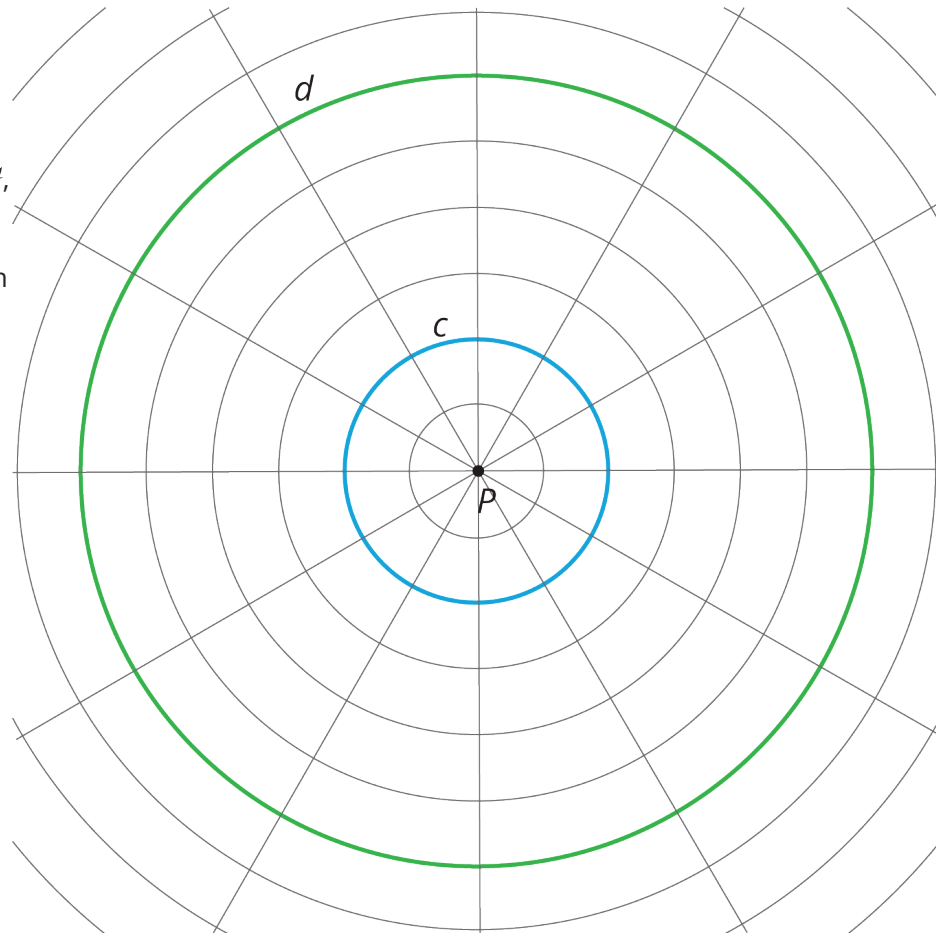
What do you notice? What do you wonder?

2 A Droplet on the Surface

Student Task Statement

The larger Circle d is a dilation of the smaller Circle c . P is the center of dilation.

1. Draw four points on the smaller circle (not inside the circle!), and label them E , F , G , and H .
2. Draw the rays from P through each of those four points.
3. Label the points where the rays meet the larger circle E' , F' , G' , and H' .



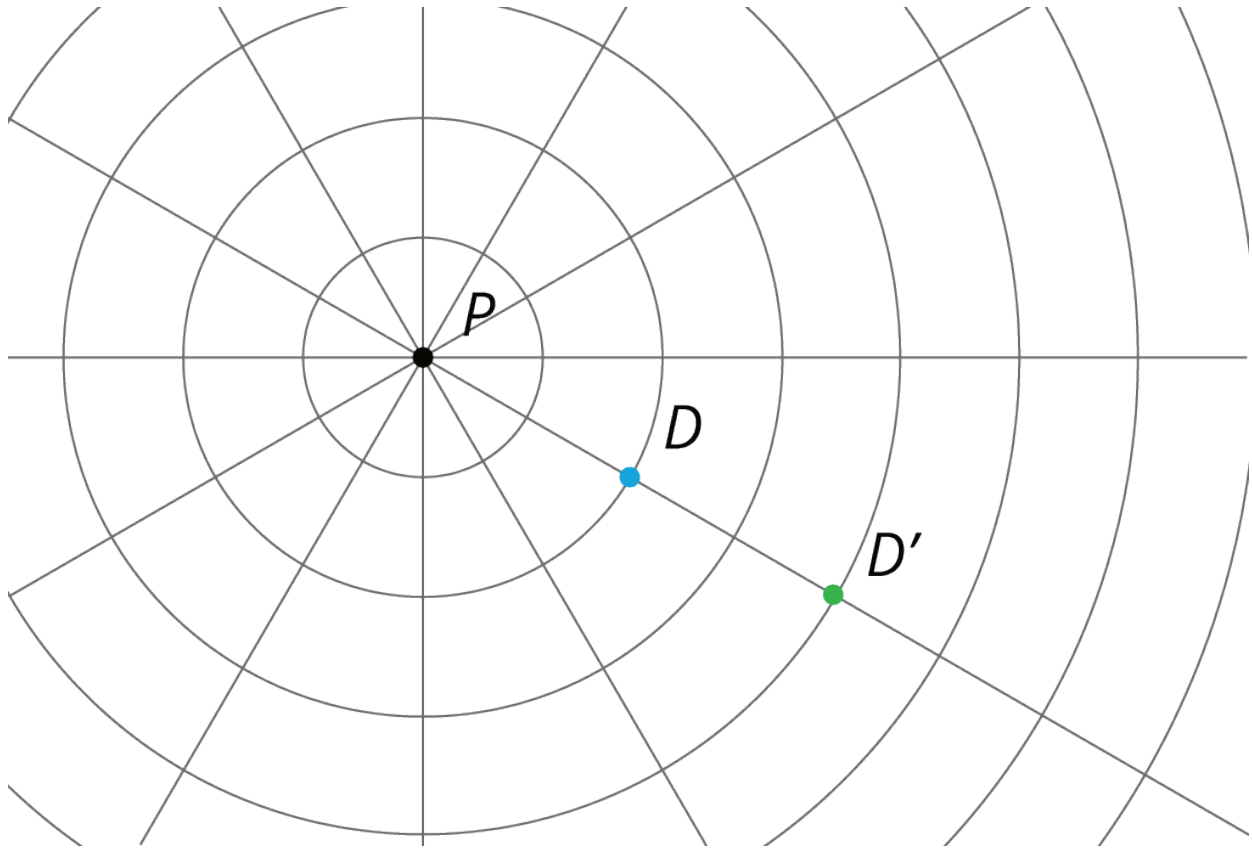
4. Complete the table. In the row labeled c , write the distance between P and the point on the smaller circle in grid units. In the row labeled d , write the distance between P and the corresponding point on the larger circle in grid units.

	E	F	G	H
c				
d				

5. The center of dilation is point P . What is the *scale factor* that takes the smaller circle to the larger circle? Explain your reasoning.

3 Quadrilateral on a Circular Grid

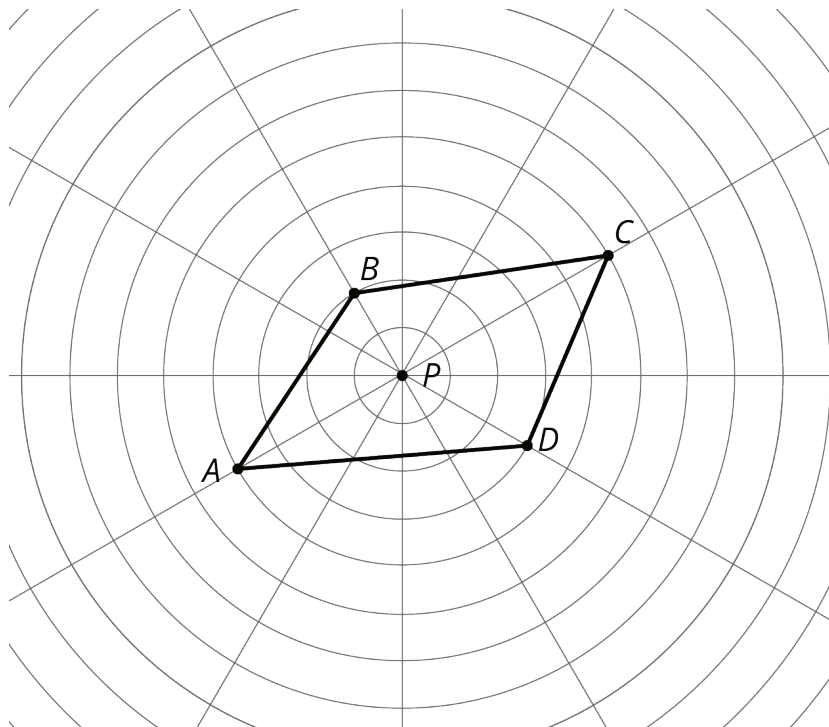
Images for Launch



Student Task Statement

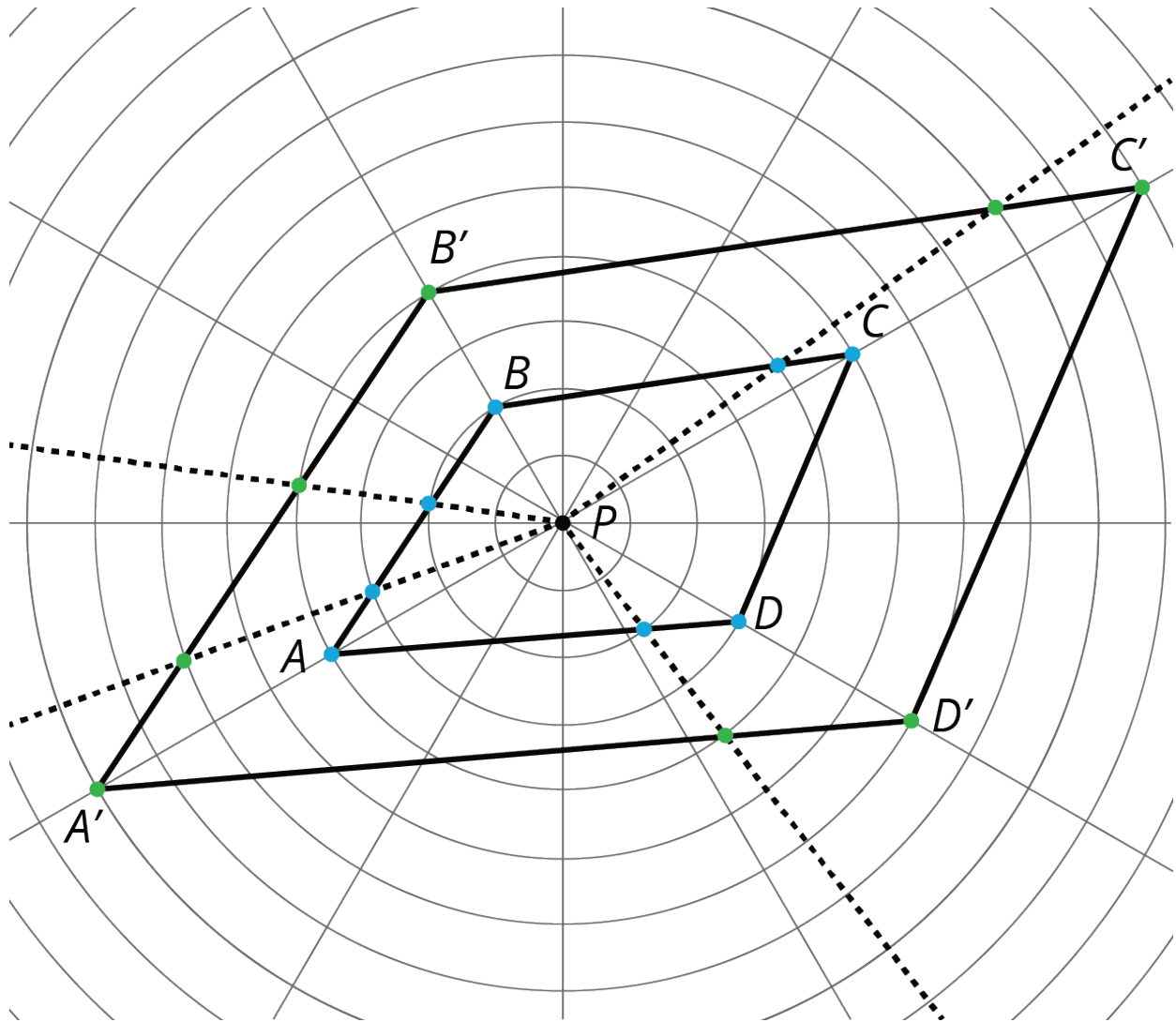
Here is a polygon $ABCD$.

1. Dilate each vertex of polygon $ABCD$ using P as the center of dilation and a scale factor of 2. Label the image of A as A' , and label the images of the remaining three vertices as B' , C' , and D' .
2. Draw segments between the dilated points to create polygon $A'B'C'D'$.
3. What are some things you notice about the new polygon?



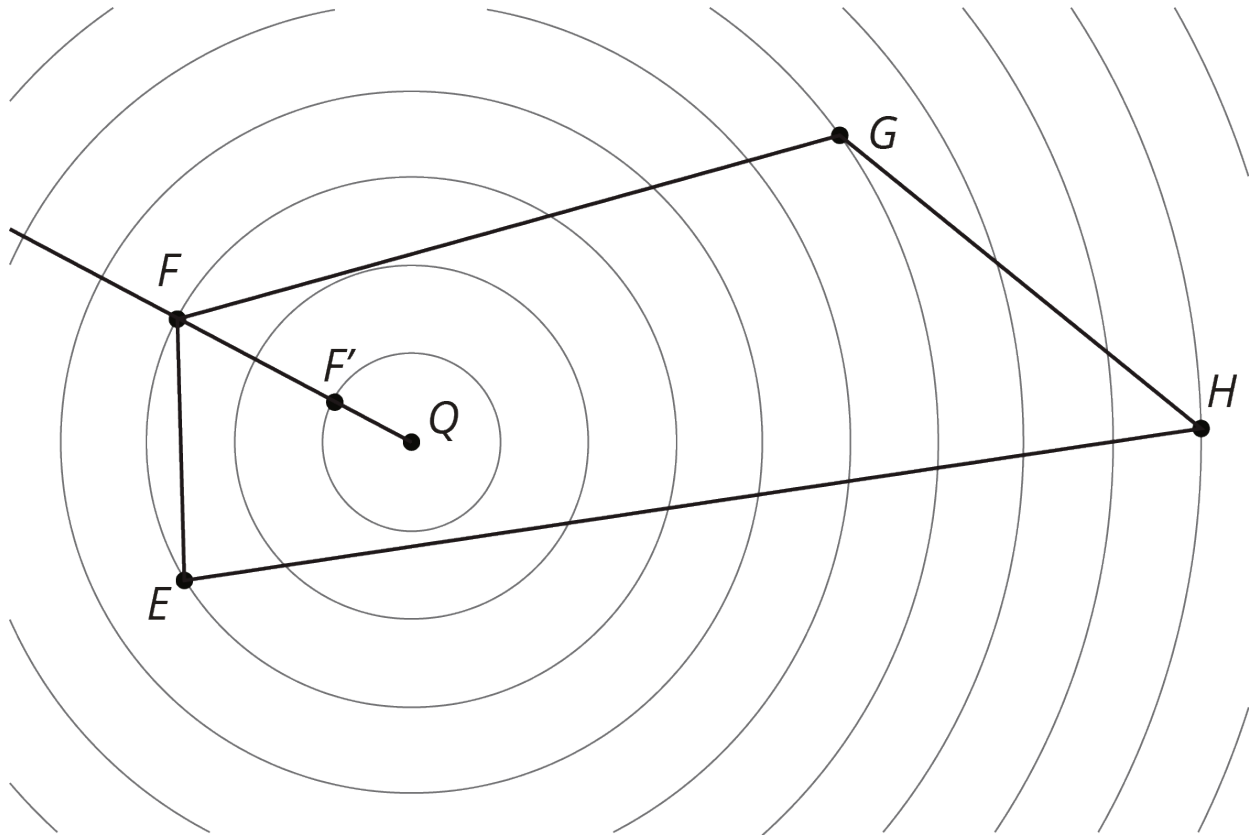
4. Choose a few more points on the sides of the original polygon and transform them using the same dilation. What do you notice?
5. Dilate each vertex of polygon $ABCD$ using P as the center of dilation and a scale factor of $\frac{1}{2}$. Label the image of A as E , the image of B as F , the image of C as G and the image of D as H .
6. What do you notice about polygon $EFGH$?

Activity Synthesis



4 A Quadrilateral and Concentric Circles (Optional)

Student Task Statement



Dilate polygon $EFGH$ using Q as the center of dilation and a scale factor of $\frac{1}{3}$. The image of F is already shown on the diagram. (You may need to draw more rays from Q in order to find the images of other points.)

Images for Activity Synthesis

