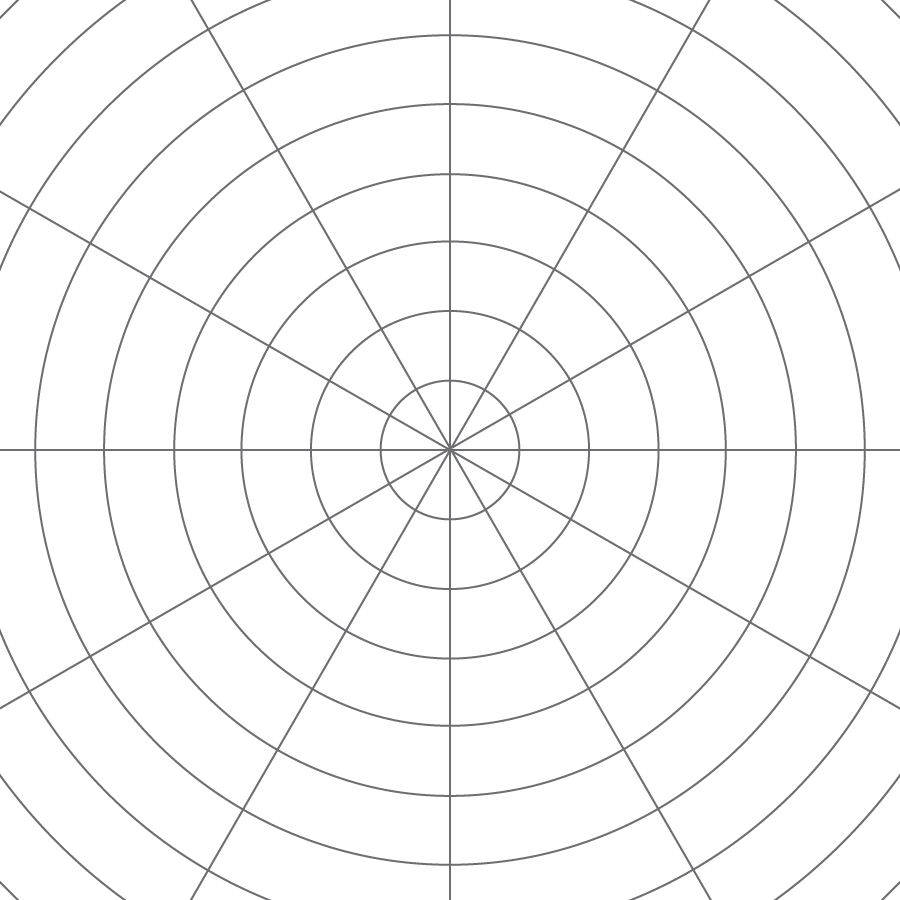
## Unit 2 Lesson 2: Circular Grid

### 1 Notice and Wonder: Concentric Circles (Warm up)

#### Student Task Statement



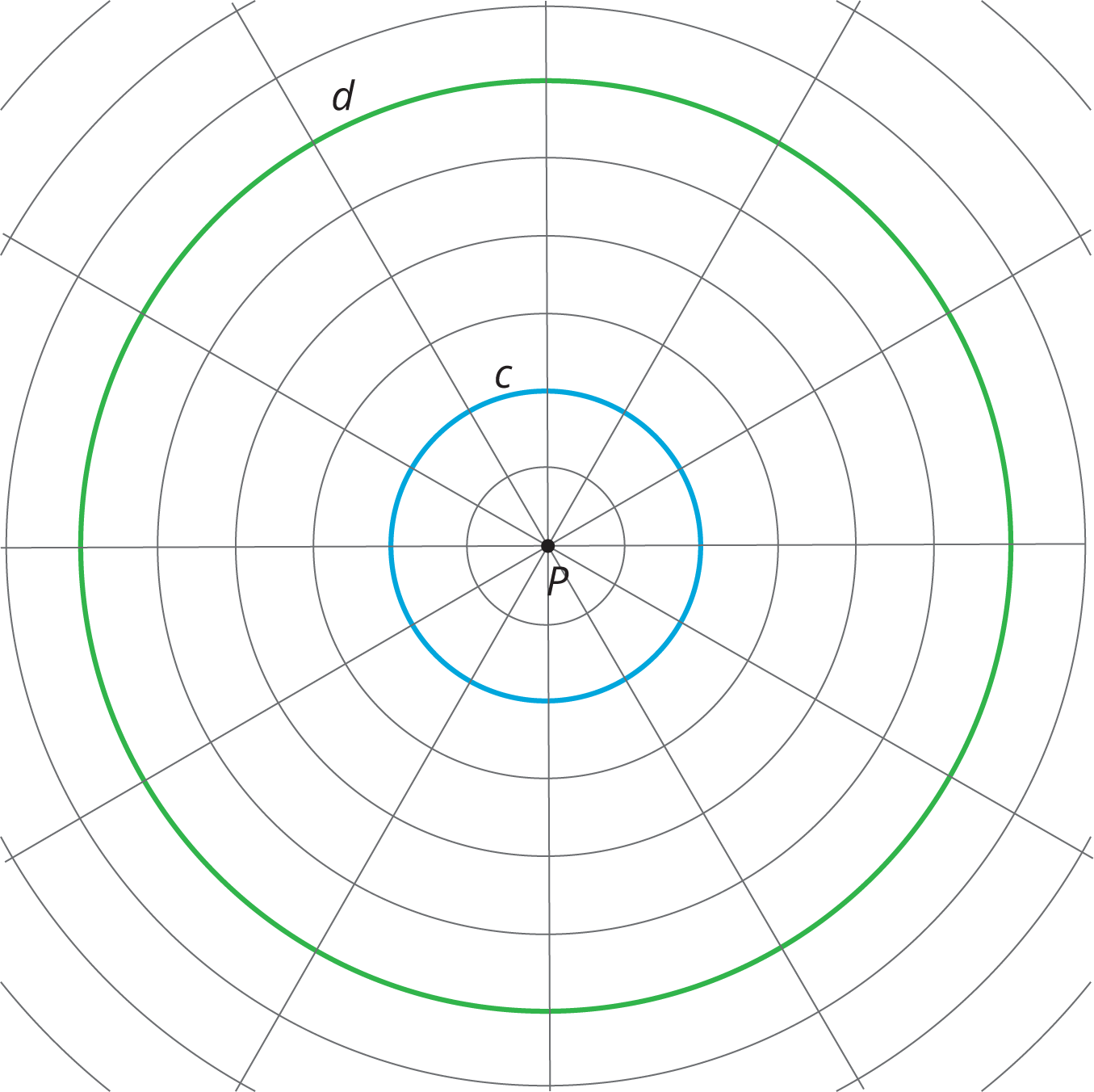
What do you notice? What do you wonder?

### 2 A Droplet on the Surface

#### Student Task Statement

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

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



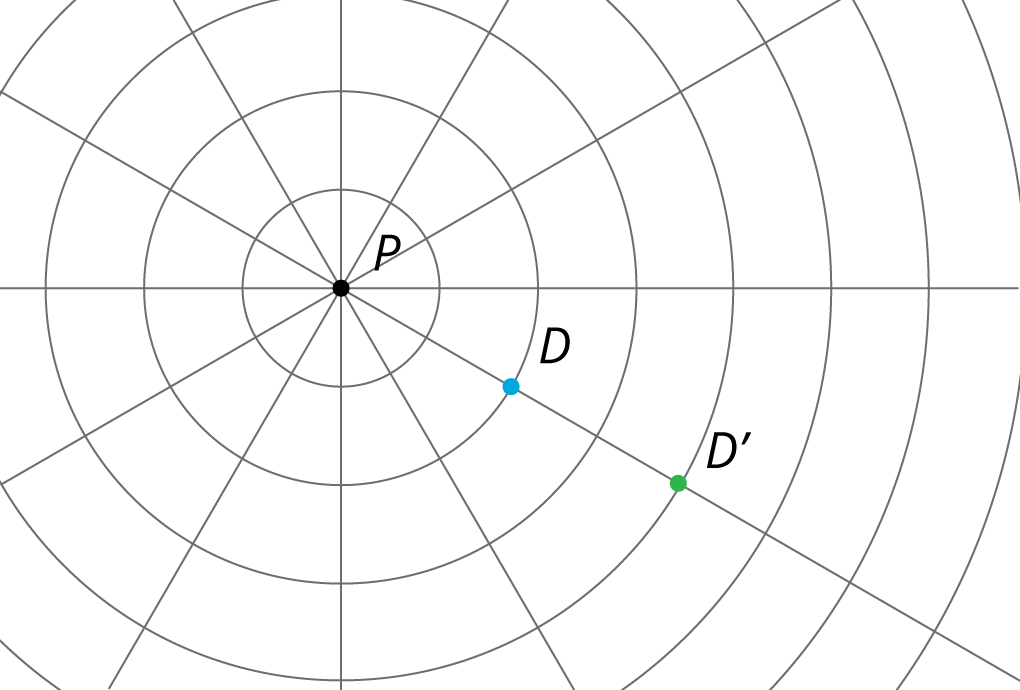
4. Complete the table. In the row labeled c, write the distance between and the point on the smaller circle in grid units. In the row labeled d, write the distance between and the corresponding point on the larger circle in grid units.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| c |  |  |  |  |
| d |  |  |  |  |

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

### 3 Quadrilateral on a Circular Grid

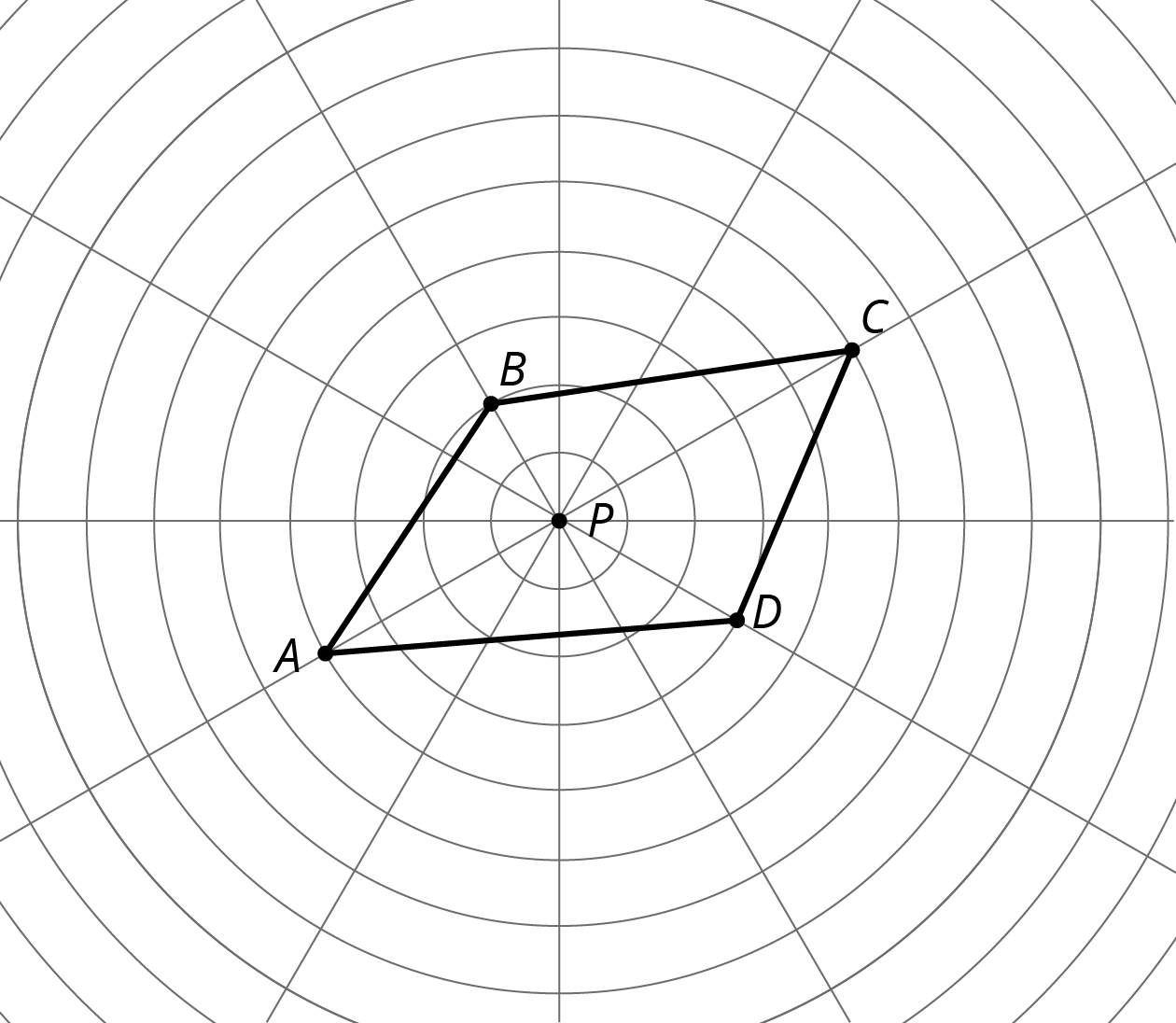
#### Images for Launch



#### Student Task Statement

Here is a polygon .

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

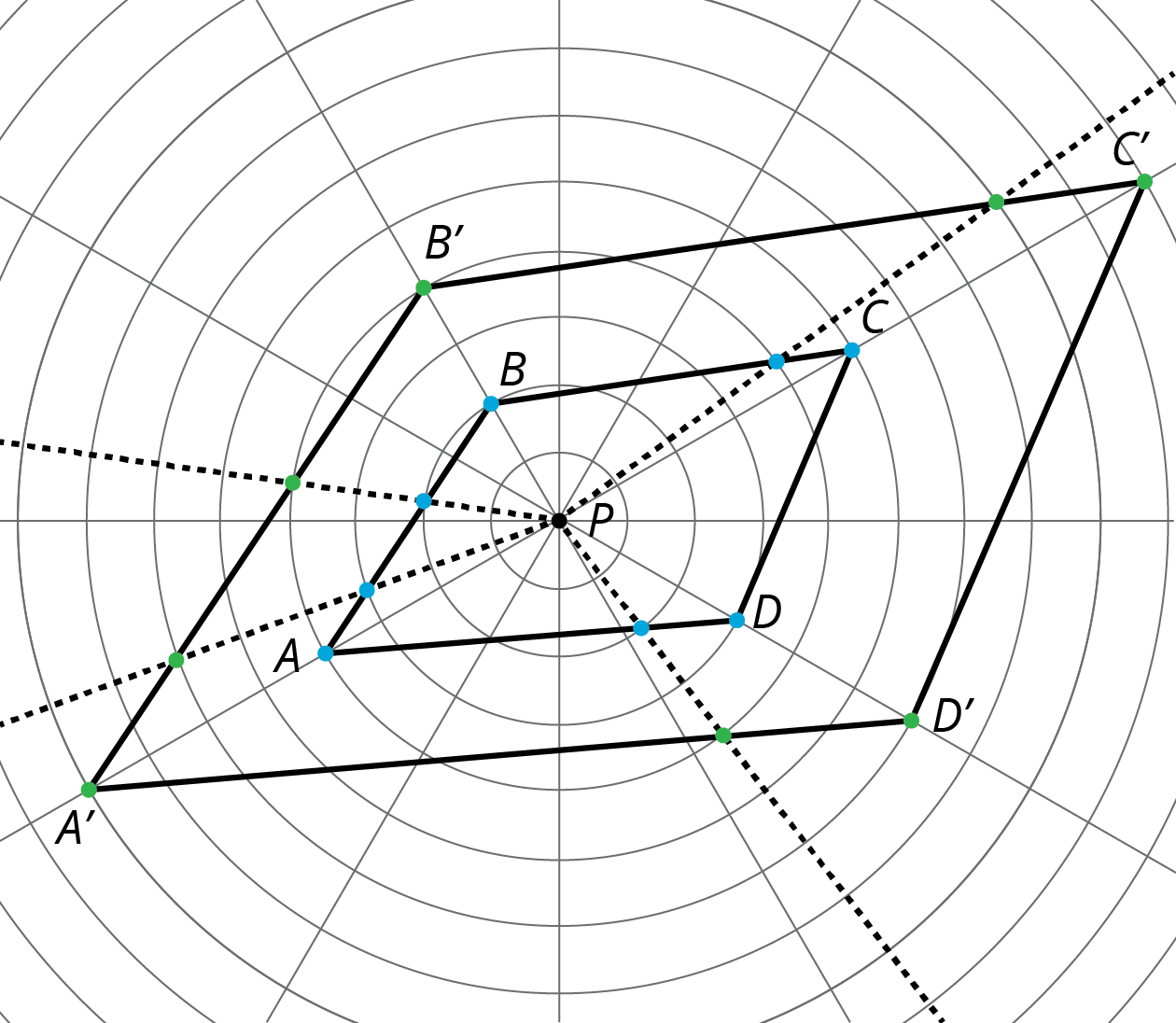


4. Choose a few more points on the sides of the original polygon and transform them using the same dilation. What do you notice?

5. Dilate each vertex of polygon using as the center of dilation and a scale factor of . Label the image of as , the image of as , the image of as and the image of as .

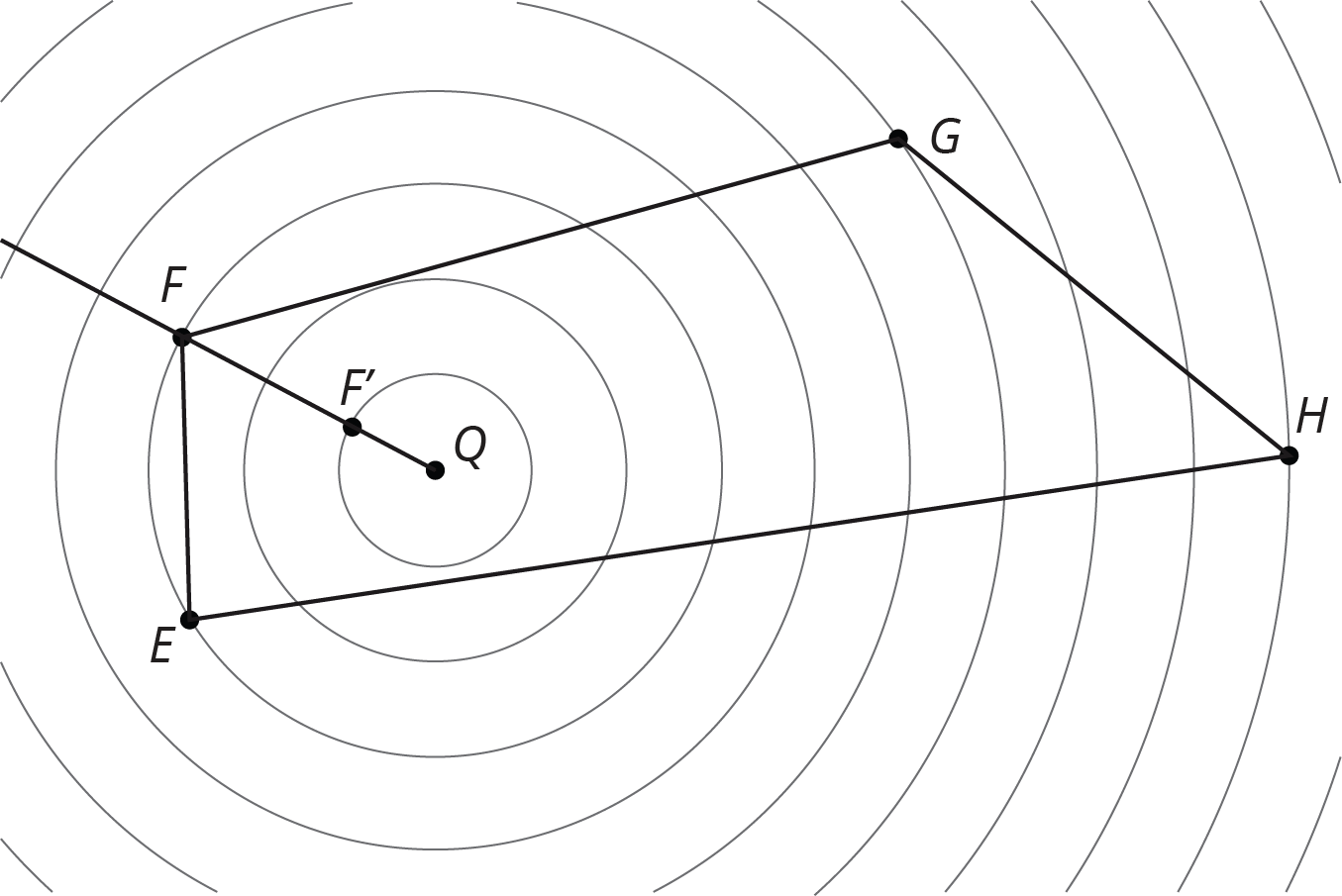
6. What do you notice about polygon ?

#### Activity Synthesis



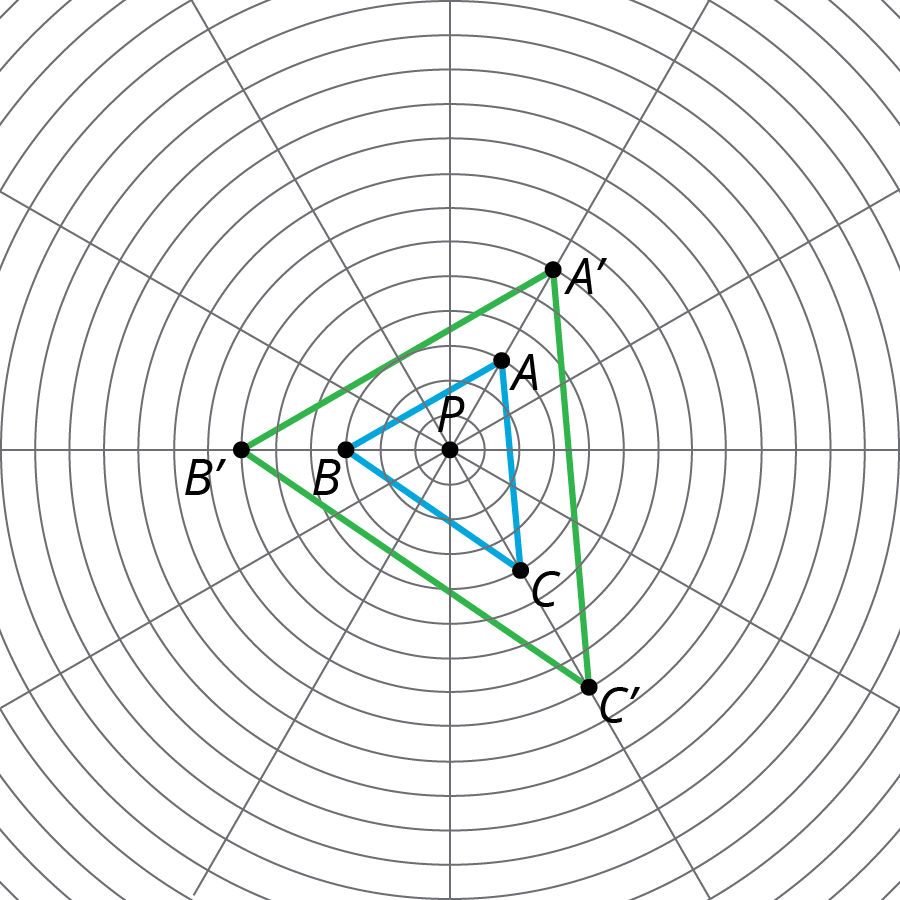
### 4 A Quadrilateral and Concentric Circles (Optional)

#### Student Task Statement



Dilate polygon using as the center of dilation and a scale factor of . The image of is already shown on the diagram. (You may need to draw more rays from in order to find the images of other points.)

#### Images for Activity Synthesis





© CC BY Open Up Resources. Adaptations CC BY IM.