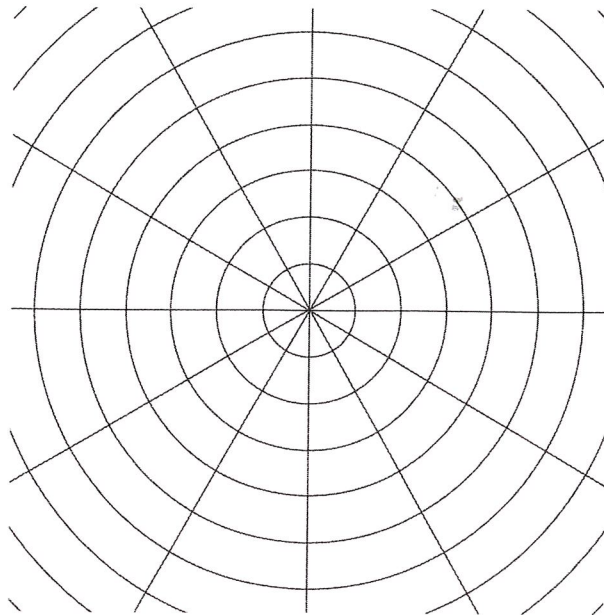


Unit 2
Lesson 2: Circular Grid

Let's dilate figures on circular grids.

2.1: Notice and Wonder: Concentric Circles



What do you notice? What do you wonder?

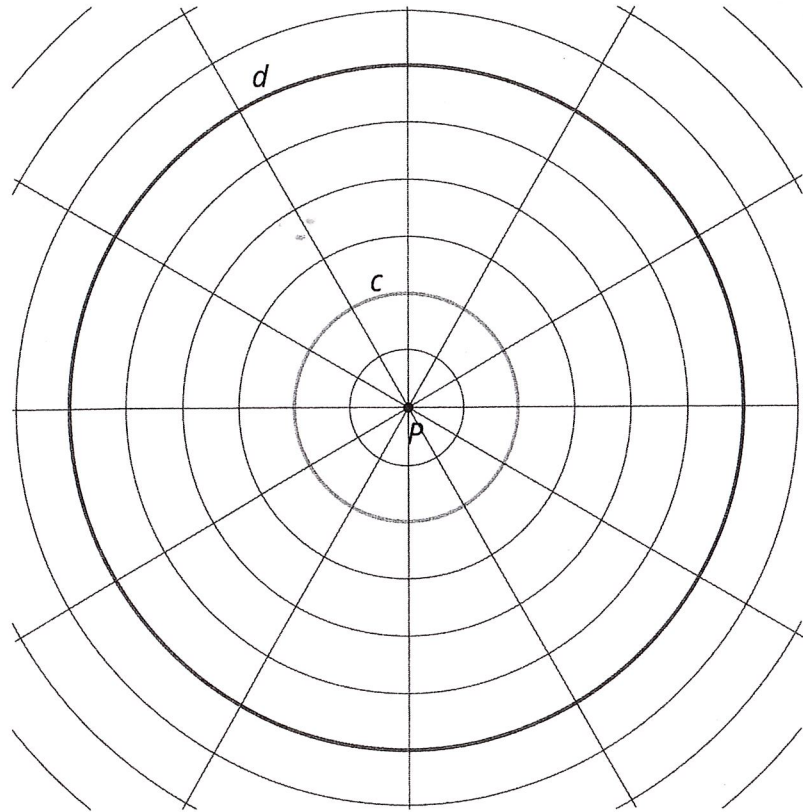
2.2: A Droplet on the Surface

m.openup.org/1/8-2-2-2



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 S , write the distance between P and the point on the smaller circle in grid units. In the row labeled L , write the distance between P and the corresponding point on the larger circle in grid units.

	E	F	G	H
S				
L				

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.

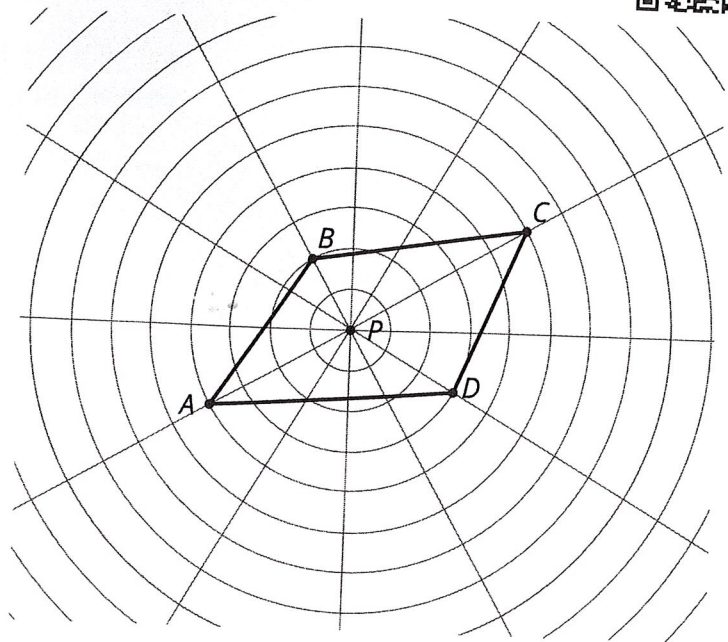
2.3: Quadrilateral on a Circular Grid

m.openup.org/1/8-2-2-3



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.
2. Label the image of A as A' , and label the images of the remaining three vertices as B' , C' , and D' .
3. 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 $EFGH$?