## Lesson 7: Construction Techniques 5: Squares

* Let’s use straightedge and compass moves to construct squares.

### 7.1: Which One Doesn’t Belong: Polygons

Which one doesn’t belong?

A



B



C



D



### 7.2: It’s Cool to Be Square

Use straightedge and compass moves to construct a square with segment $AB$ as one of the sides.



### 7.3: Trying to Circle a Square

1. Here is square $ABCD$ with diagonal $BD$ drawn:
	1. Construct a circle centered at $A$ with radius $AD$.
	2. Construct a circle centered at $C$ with radius $CD$.
	3. Draw the diagonal $AC$ and write a conjecture about the relationship between the diagonals $BD$ and $AC$.
	4. Label the intersection of the diagonals as point $E$ and construct a circle centered at $E$ with radius $EB$. How are the diagonals related to this circle?
	* 
2. Use your conjecture and straightedge and compass moves to construct a square inscribed in a circle.
* 

#### Are you ready for more?

Use straightedge and compass moves to construct a square that fits perfectly outside the circle, so that the circle is inscribed in the square. How do the areas of these 2 squares compare?

### Lesson 7 Summary

We can use what we know about perpendicular lines and congruent segments to construct many different objects. A square is made up of 4 congruent segments that create 4 right angles. A square is an example of a **regular polygon** since it is equilateral (all the sides are congruent) and equiangular (all the angles are congruent). Here are some regular polygons inscribed inside of circles:





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