

## Straight Edge and Compass Construction

The Ancient Greeks used two tools to explore geometric properties: the straight edge and the compass.

- ⇒ A straight edge can be used to draw straight lines.
- ⇒ A compass can be used to draw circles.

Because a circle can be described as the set of all points a certain distance from a center, we can also use a compass to measure distance. Please **do not** use the measurement markings on your ruler for this exercise.

Start by writing a definition of each geometric object, and then experiment on scratch paper until you can construct it neatly with your straight edge and compass next to your definition.

1. Line segment

2. Circle

3. Perpendicular bisector of a segment

4. Angle

Now, some slightly more complicated constructions.

1. Draw a line  $L$  and a point  $P$  not on line  $L$ . Then, construct a line perpendicular to  $L$  that goes through  $P$ .
2. Construct a pair of parallel lines.
3. Construct a square.

4. Construct an isosceles triangle (a triangle which has two sides of equal length).

5. Construct an equilateral triangle.

6. Construct a hexagon.