Constructions

Unit 1 Bonus

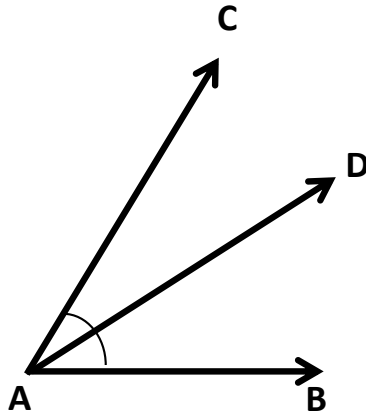# Constructions

Students will be able to:

draw an angle bisector, a segment bisector and a perpendicular on a line segment.

Key Vocabulary

- Angle bisector

- Segment bisector

- Perpendicular on a line

Constructions

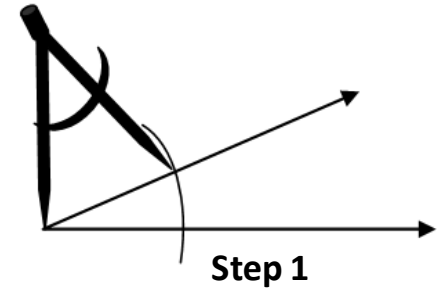An **angle bisector** is a line that divides an angle into two equal parts.

The line AD bisects the angle CAB or (angle A) in two equal parts and is called the angle bisector.
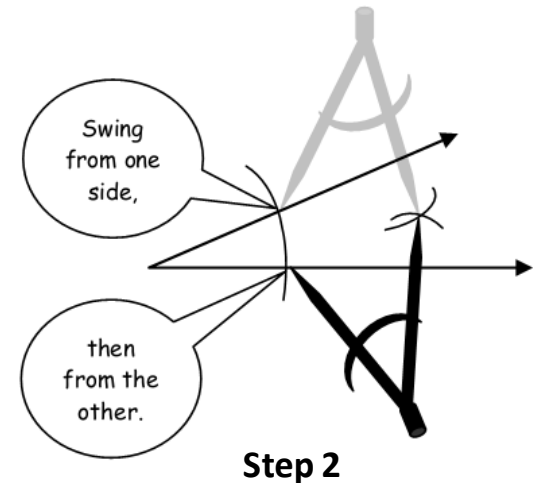
Constructions

To draw an **angle bisector** of an angle, we need to do the following steps:

**Step 1:** Draw an arc cutting both sides of the angle to be bisected.

Step 2: Draw an arc from each side where the arc drawn in step is cutting the sides. Draw these arcs within the space between two sides.

Step 1

Swing from one side,

then from the other.

Step 2

Constructions

Step 3: Draw a ray starting from the vertex of the angle, and which passes through the intersection of the two arcs drawn in step 2. This ray is the angle bisector.
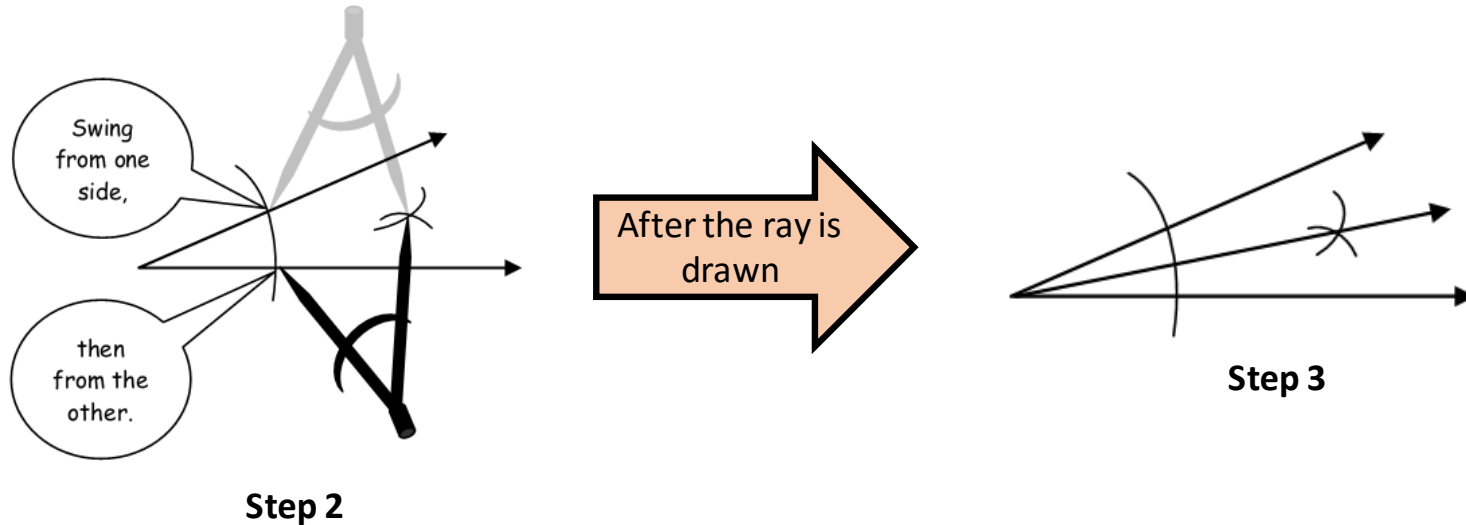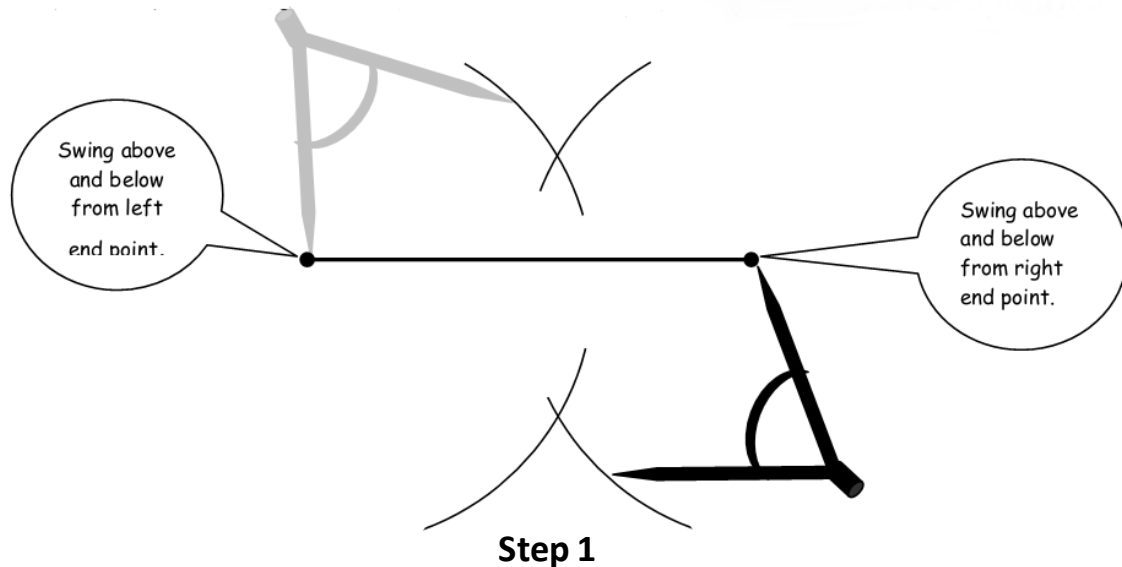
Constructions

A **segment bisector** is a point, line or a line segment that divides the line segment into two equal parts. A segment bisector is usually at the centre of the line segment and always includes the midpoint of the line segment.

A

**The point A is a segment bisector**
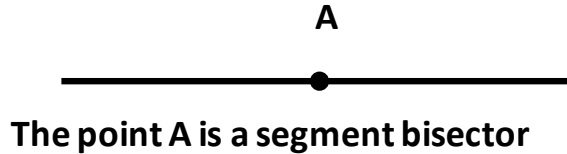
Constructions

To draw a **segment bisector** of a line segment, we need to do the following steps:

Step 1: Set the width of your compass as more than half of the length of the line segment and draw an arc from both ends of the line segment.

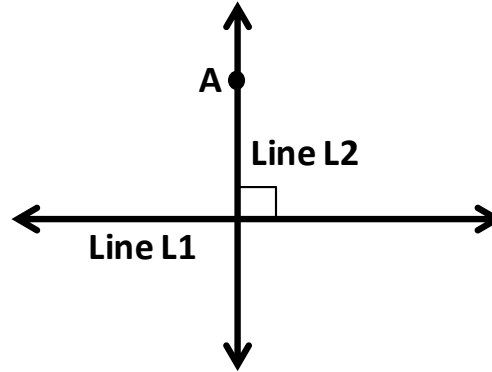Swing above and below from left end point.

Swing above and below from right end point.

Step 1

Constructions

Step 2: Connect the intersection of the arcs drawn in the step 1. The line joining these arcs is the segment bisector.

2 equal parts
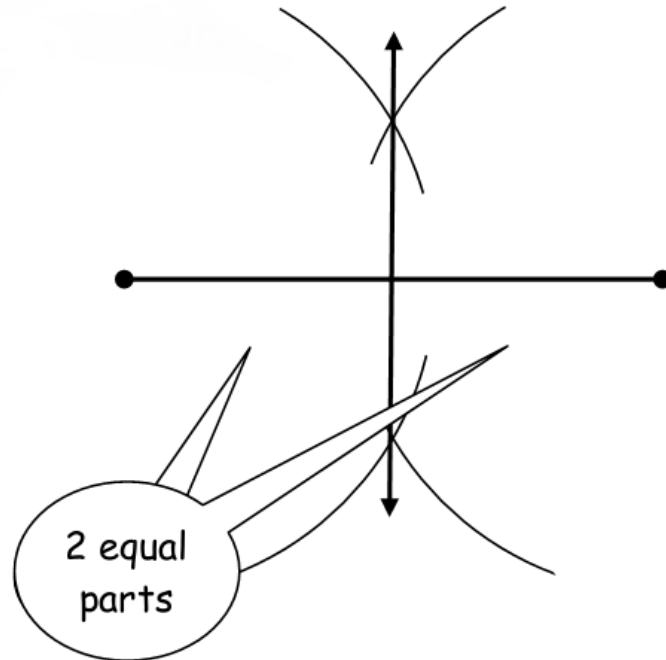
Step 2

Constructions

A **perpendicular** from a given point on a line is a line that intersects the given line at 90 degrees.
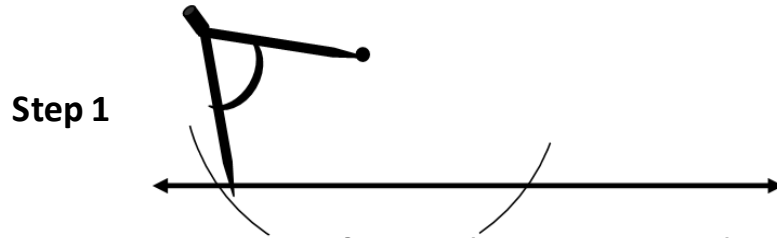

**Line L2 is a perpendicular on Line 1 from point A**

Constructions

To draw a **perpendicular** on a line, we need to do the following steps:

Step 1: Draw arcs on the line by putting compass at the given point. The width of the compass has to be adjusted accordingly.
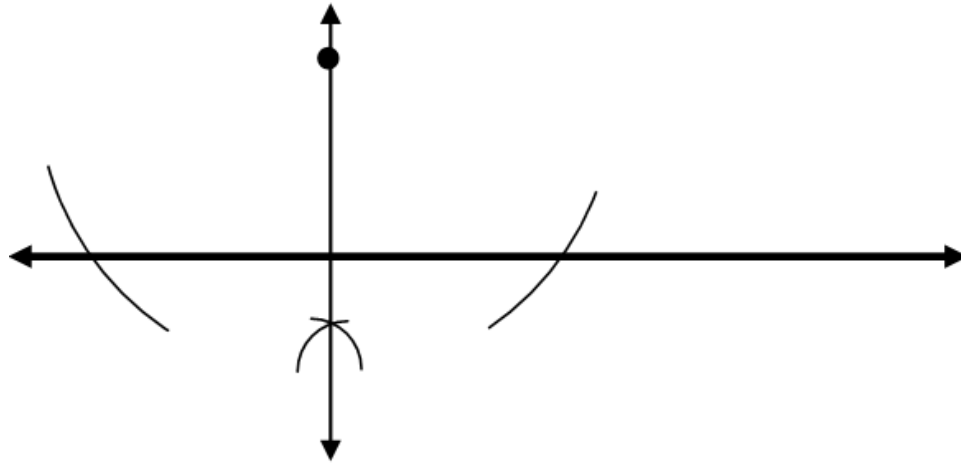
Step 1

Step 2: Draw intersecting arcs from the points where the arcs drawn in step 1 are intersecting with the given line.
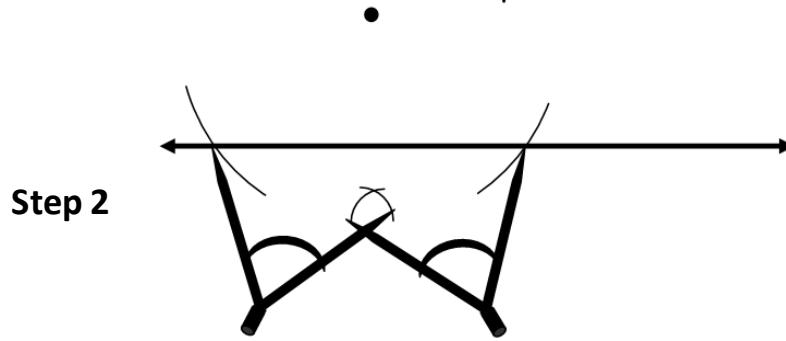
Step 2

Constructions

Step 3: Draw a line from the given point that passes through the intersecting arcs drawn in step 2.

Step 3