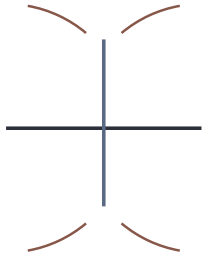
Constructions: fact sheet

Planner week 18 · Learn these facts

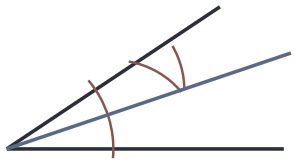
Perpendicular bisector



Cuts a line in half at 90°

Equal arcs from each end

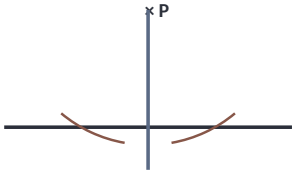
Angle bisector



Cuts an angle in half

Arc from the corner first

Perpendicular from a point



Arc from P cuts the line twice

Then bisect those two points

Perpendicular at a point

arcs either side of P

then bisect them

90° at a point on the line

Loci: from a point

a circle

Same distance from a point

“More than” = outside

Loci: from a line

a parallel line

Same distance from a straight edge

Measure at 90°

Leave the arcs

construction lines

are the marks

Never rub them out

Use a sharp pencil

Equipment

Compasses	keep the same width
Ruler	straight lines
Pencil	sharp

Key words

- **Bisect** cut into two equal parts
- **Perpendicular** at right angles (90°)
- **Locus** all the points that follow a rule (plural loci)
- **Equidistant** the same distance

Exam tips

- Do not change the compass width in the middle of a step.
- Leave all your arcs showing.
- Draw the final line with a ruler.
- Loci with a scale: change real distances to cm first.
- Shade only the region that fits every rule.
- Check your 90° with a protractor.

Constructions and loci: fact sheet

Constructions · Planner week 18 · Learn the method

Worked example

QUESTION

Use a ruler and compasses to construct the bisector of angle ABC.
You must show all your construction lines.

ANSWER

1. Put the compass point on B. Draw an arc that cuts both lines BA and BC.
2. Keep the same width. From each of those two points, draw an arc in the middle of the angle.
3. Join B to where the two arcs cross with a ruler.
4. Leave all your arcs showing.

The line cuts the angle exactly in half.

Arcs first, then a ruler line through the crossing.

How to do it

1. Read which construction is asked for.
2. Set the compasses and keep the width.
3. Draw the arcs: they must cross.
4. Draw a ruler line through the crossing point(s).
5. Loci: draw each rule, then shade where they all work.

Model answer:

The line cuts the angle exactly in half.

Watch out

- Rubbing out the arcs.
- Changing the compass width.
- Shading the wrong side of a locus.