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| **The perpendicular bisector***at right angles - cut in half** Set the radius of the compasses to about three quarters of the length AB
* Put the point of the compasses on A
* Draw an arc (*about the length of a semicircle*) that crosses the line AB
* Do not alter the compasses!
* Put the point of the compasses on B
* Draw an arc again. It needs to cross the first arc in two places. If it doesn’t, make them longer.
* Join the two points where the arcs meet with a straight line

Congratulations! You have just made a right angle. And you have bisected the line AB.*This also gives the set of points* ***equidistant*** *from points A and B* | **An equilateral triangle***Take 6cm side length as an example** Draw a line of 6 cm. Label the ends A and B.
* Set the radius of the compasses to 6 cm. Do not alter this until you have finished!
* Put the point of the compasses on A. Draw an arc.
* Put the point of the compasses on B. Draw an arc. It needs to cross the first arc in two places. If it doesn’t, make them longer.
* Label the point where the arcs cross with a C.
* Join C to A and C to B with a straight line

Congratulations! You have just constructed an equilateral triangle |
| **A triangle with three known sides (SSS)***Take 5 cm, 6 cm and 8 cm as an example** Pick the longest side. Draw a line this long. Label the ends A and B.
* Pick one of the shorter sides. Set the radius of the compasses to this length.
* Put the point of the compasses on A. Draw an arc.
* Take the third side. Set the radius of the compasses to this length.
* Put the point of the compasses on B. Draw an arc. It needs to cross the first arc in two places. If it doesn’t, make them longer.
* Label the point where the arcs cross with a C.
* Join C to A and C to B with straight lines

Congratulations! You have just constructed a triangle with three known sides*You should also be able to construct* ***SAS*** *and* ***ASA****. This requires a protractor but no compasses.* | **The angle bisector***cut in half** Set the radius of the compasses to about three quarters of the length AB
* Put the point of the compasses on A
* Draw an arc that crosses both lines AB and AC
* Label these points D and E
* Put the point of the compasses on D. Draw an arc (*in the direction of C and D*)
* Do not alter the compasses!
* Put the point of the compasses on E. Draw an arc that crosses the previous one. If it doesn’t, make them longer.
* Label the two points where the arcs meet with an F
* Join F to A with a straight line

Congratulations! You have just bisected an angle.*This also gives the set of points* ***equidistant*** *from lines AB and AC* |

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| **The perpendicular bisector***Construct it for this line* | **An equilateral triangle***Construct one with 7 cm side lengths* |
| **A triangle with three known sides***Use 6.5 cm, 9 cm and 7cm now* | **The angle bisector***Bisect this angle* |