**Starting out:**

**Circumcentre**: centre of circumcircle; intersection of perpendicular bisectors of sides of a triangle (chords of the intended circle)

**Circle through three points:** you may have a button that does this for you, but my advice is to construct it from realising that the three points are the vertices of a triangle and the circle you want is the circumcircle of that triangle. Find the circumcentre as above, then draw a circle with that centre and radius from the circumcentre to one of the midpoints – which you can find from the perpendicular bisector. You will need this a few times, so maybe practise.

**Orthocentre**: intersection of altitudes; drop a perpendicular from a vertex to its opposite side – repeat

Draw triangles using line segments, but you will often have to extend these into infinite lines when you start using altitudes or looking for intercepts. Keep the segments and the infinite lines so you can always see the original triangle but hide the infinite lines and construction lines.

There are 7 sequences of construction and although they are in a particular order for a reason it is also OK to jump about after sequence 3. Sequence 6 needs sequence 5 and is spectacular.

**Sequence 1**

Draw triangle ABC

Construct orthocentre and label it H (always change labels as you go to stay inline with what is used in these tasks and also in Dick’s booklet).

Hide construction lines

Join H to A, B and C

You now have 4 triangles

H is the orthocentre of triangle ABC

A is the orthocentre of …..

B is the …………. of ………

C?

Convince?

ABCH form an **orthocentric set**