How to construct an Euler segment

1. Construct a triangle.

Find and select the **POINT** tool. Place three points on the drawing pad.

Find and select the **SEGMENT** tool. Join the three points to construct a triangle.
Right click on OBJECT PROPERTIES and select the VALUE ONLY display for each side.

2. Mark some important points.

a. The *circumcentre* of a triangle is the point where the perpendicular bisectors of the sides intersect.

Find and select the **PERPENDICULAR BISECTOR** tool. Click on each side to show the line.
Right click on OBJECT PROPERTIES and remove the label and select a colour for your lines.

Find and select the **INTERSECT TWO OBJECTS** tool. Click on two lines to identify the point of intersection - the circumcentre.

b. The *orthocentre* is the point where the altitudes of the triangle intersect. An *altitude* is a line from each vertex that is perpendicular to the opposite side.

Find and select the **PERPENDICULAR LINE** tool. Click on each vertex and the opposite side to show each altitude. Right click on OBJECT PROPERTIES - remove the labels, change the colours.

Find and select the **INTERSECT TWO OBJECTS** tool. Click on two lines to identify the point of intersection - the orthocentre.

c. The *centroid* is the point where the medians of the triangle intersect. A *median* of a triangle is the line segment from each vertex to the midpoint of the opposite side.

Find and select the **MIDPOINT** tool. Show the midpoint for each of the three sides.

Find and select the **SEGMENT** tool. Join the three vertices to their opposite midpoints.
Right click on OBJECT PROPERTIES, remove the labels and choose a third colour for your lines.

Find and select the **INTERSECT TWO OBJECTS** tool. Click on two lines to identify the point of intersection - the centroid.

3. Join the EULER SEGMENT

The *Euler Segment* is the line segment between the triangle's **orthocentre** and **circumcentre**.

Find and select the **SEGMENT** tool. Join the *orthocentre* and the *circumcentre* of your triangle.
Right click on OBJECT PROPERTIES – change the colour/thickness of the line, select VALUE ONLY.