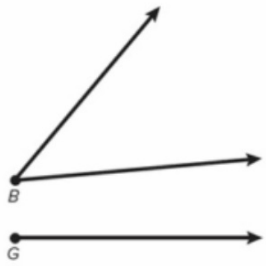
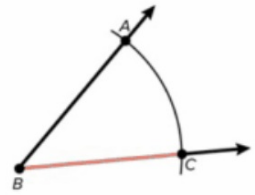
Learn
Congruent Angles

https://www.mathopenref.com/constcopyangle.html

Construction: Copy an Angle	
STEP 1 You are given $\angle B$. Use a straightedge to draw a ray on your paper. Label its endpoint G.	
STEP 2 Place the thumbtack at the vertex of $\angle B$ and draw a large arc that intersects both sides of $\angle B$. Label the points of intersection A and C.	

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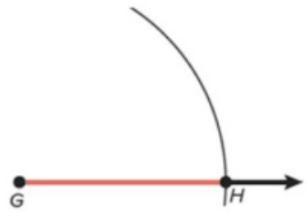
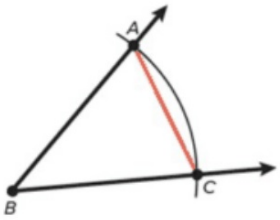
Construction: Copy an Angle	
STEP 3 Without changing the length of the string, place the thumbtack on *G* and draw an arc that starts above the ray and intersects the ray. Label the point of intersection *H*.	
STEP 4 Place the thumbtack on *C* and adjust your string so that the pencil tip is on *A*.	

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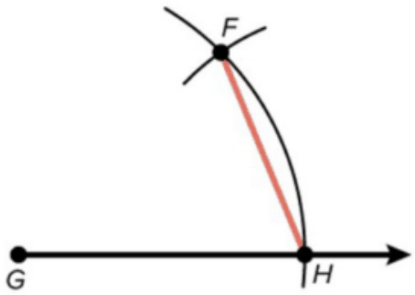
Construction: Copy an Angle	
STEP 5 Without changing the length of the string, place the thumbtack on *H* and draw an arc to intersect the larger arc you drew in **Step 3.** Label the point of intersection *F*.	

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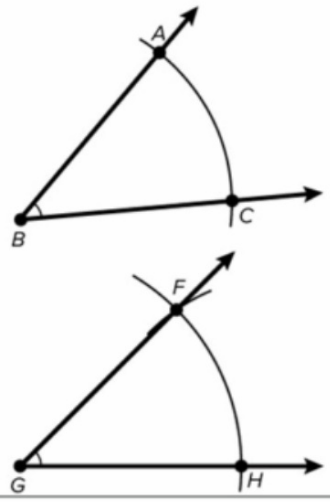
Construction: Copy an Angle	
STEP 6 Use a straightedge to draw $\overrightarrow{GF}$. $\angle ABC \cong \angle FGH$.	

*Next, use patty paper to copy an angle.

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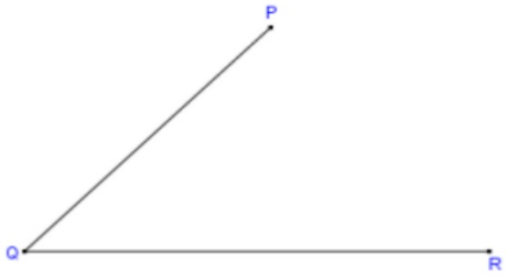
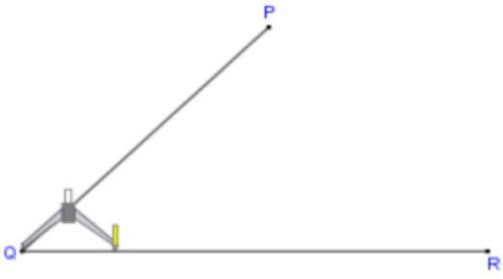
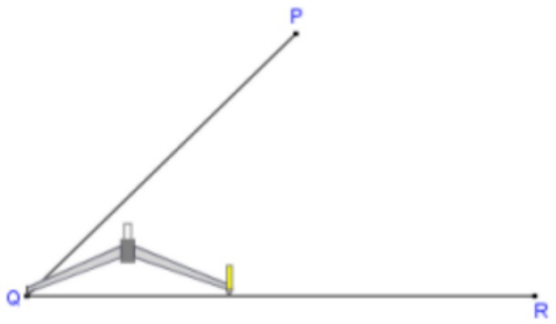
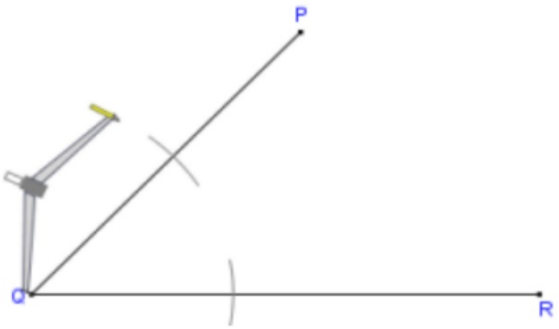
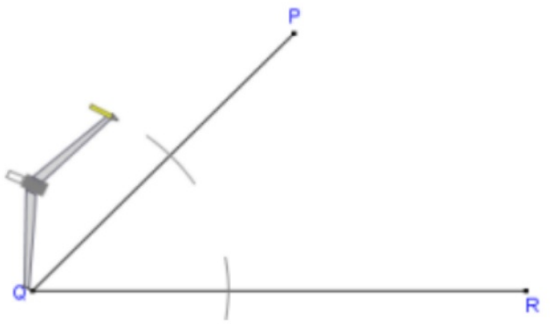
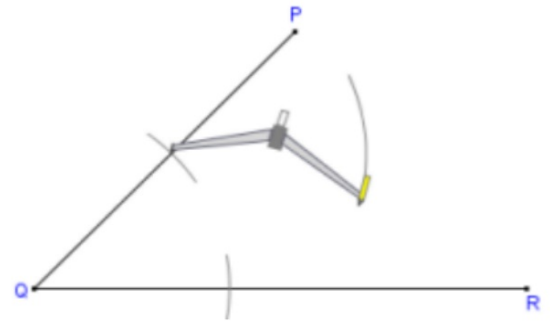
A ray or segment that divides an angle into two congruent angles is an **angle bisector**. You can create the angle bisector of any angle without knowing the measure of the angle.

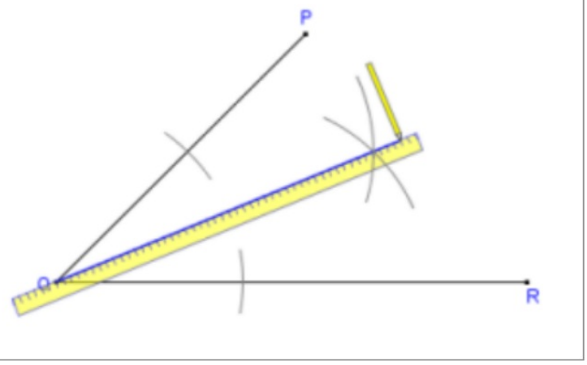
Copy and paste link below to a web browswer to follow each step of how to Bisect an Angle with a Compass & Straightedge.

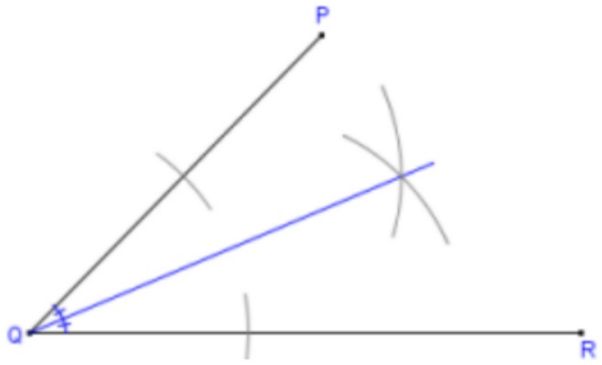
https://www.mathopenref.com/constbisectangle.html

After doing this	Your work should look like this
Start with angle PQR that we will bisect.	
1. Place the compasses' point on the angle's vertex Q.	

2. Adjust the compasses to a medium wide setting. The exact width is not important.	
3. Without changing the compasses' width, draw an arc across each leg of the angle.	

4. The compasses' width can be changed here if desired. Recommended: leave it the same.	
5. Place the compasses on the point where one arc crosses a leg and draw an arc in the interior of the angle.	

6. Without changing the compasses setting repeat for the other leg so that the two arcs cross.	
7. Using a straightedge or ruler, draw a line from the vertex to the point where the arcs cross	

Done. This is the bisector of the angle ∠PQR.	

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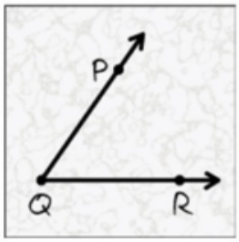
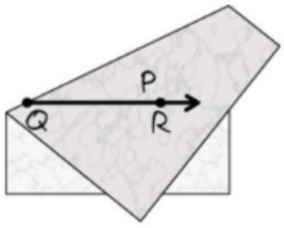
Construction: Bisect an Angle	
STEP 1 Draw $\angle PQR$ on a sheet of tracing paper.	
STEP 2 Fold the paper until the two rays of the angle overlap. Then crease the paper. Unfold the paper.	

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Construction: Bisect an Angle	
STEP 3 Draw and label point T in the interior of $\angle P$ and on the crease. Use a straightedge to draw $\overrightarrow{QT}$. $\overrightarrow{QT}$ is the bisector of $\angle P$.