**Activity 5.2.1a The Perpendicular Bisector as a Locus of Points**

Use a ruler and protractor to make measurements on the figure below.

1. Measure the distances *CA* and *CB*. What do you notice?
2. *C* is the \_\_\_\_\_\_\_\_\_\_\_\_ of $\overbar{AB}$.
3. Measure $∠$*DCB*. What do you notice?
4. $\overleftrightarrow{DC}$ is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to $\overbar{AB}$.
5. $\overleftrightarrow{DC}$ is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of $\overbar{AB}$.
6. Measure the distances *DA* and *DB*. What do you notice?
7. Now place more points *E*, *F*, and *G* on $\overleftrightarrow{DC}$.
8. Measure these distances

 *EA* = \_\_\_\_\_\_\_\_\_\_ *EB* = \_\_\_\_\_\_\_\_\_\_\_\_

 *FA* = \_\_\_\_\_\_\_\_\_\_ *FB* = \_\_\_\_\_\_\_\_\_\_\_\_\_

 *GA* = \_\_\_\_\_\_\_\_\_\_ *GB* = \_\_\_\_\_\_\_\_\_\_\_\_\_

 What do you notice?

1. Make a conjecture about all points that lie on $\overleftrightarrow{DC}$

1. Now place a point *H* in the plane that is not on $\overleftrightarrow{DC}$. Measure *HA* and *HB*. What do you notice?
2. Try to find a point *J* in the plane that is not on $\overleftrightarrow{DC}$ so that *JA* = *JB.* What do you notice?
3. Make a conjecture about all points that are equidistant from points *A* and *B*.