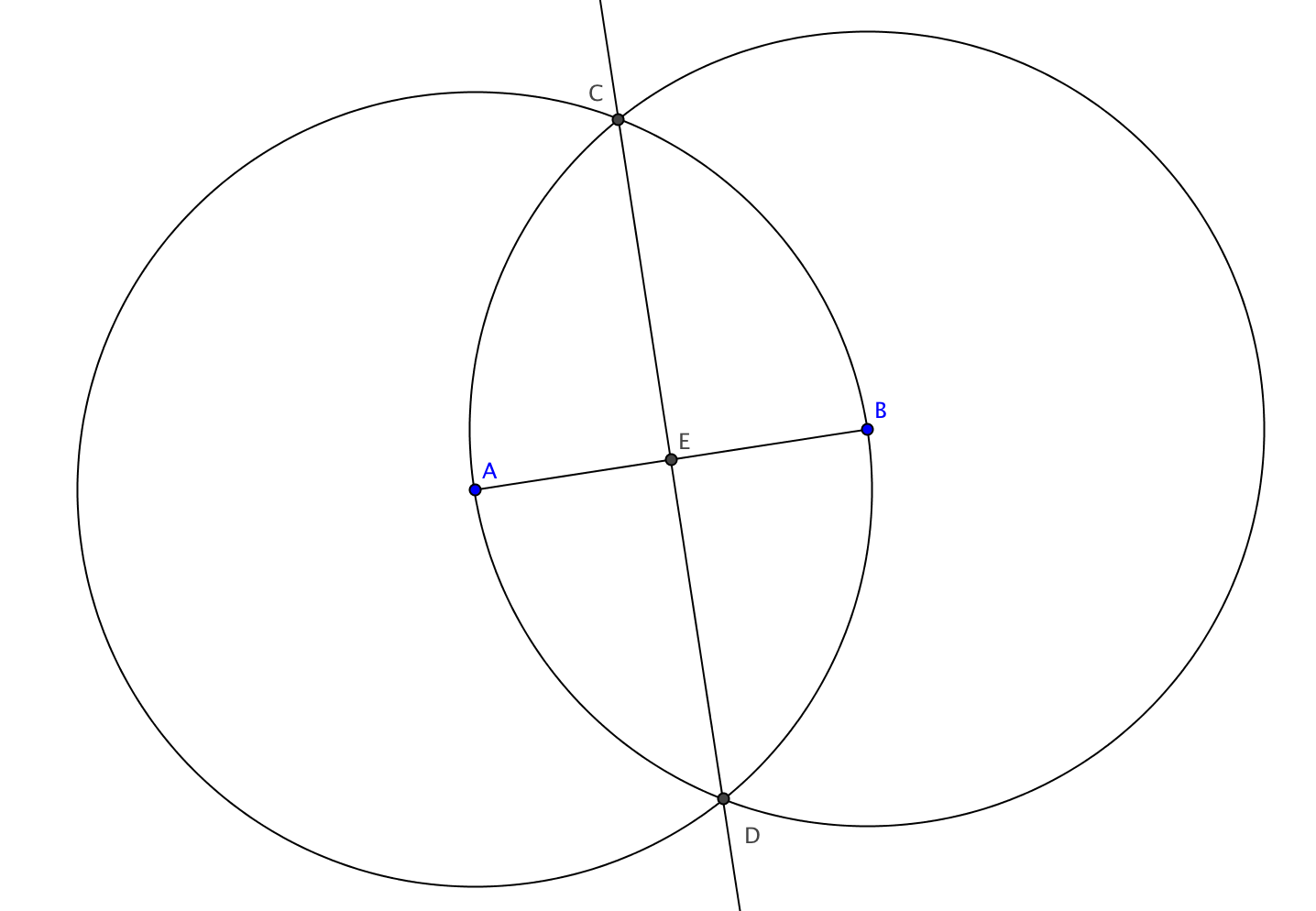
**Activity 2.7.6 Construction of the Perpendicular Bisector of a Line Segment**

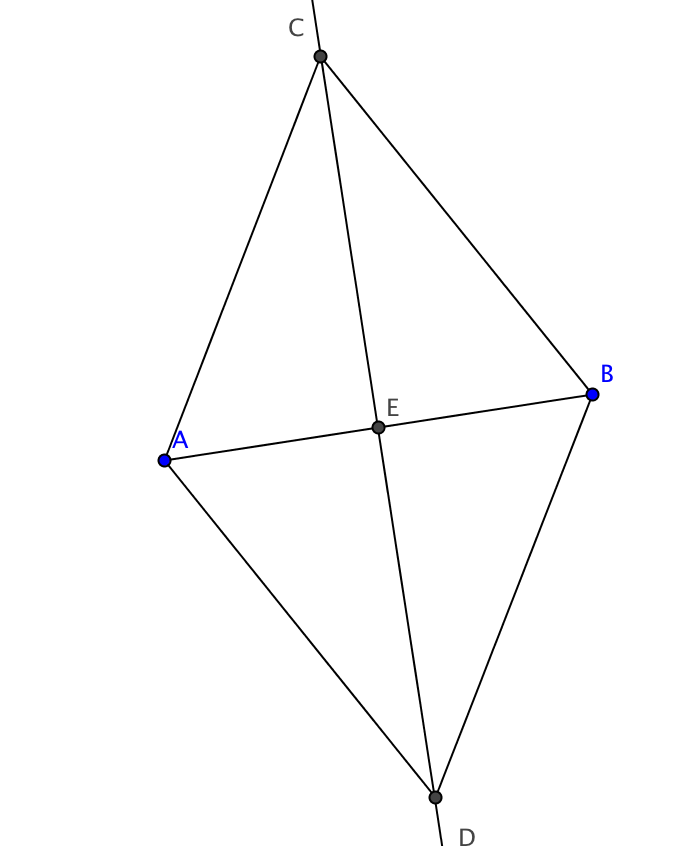


**Construction**

Given: Segment

To construct: The perpendicular bisector of .

Steps in the construction:

1. Construct the circle with center *A* passing through *B*.
2. Construct the circle with center *B* passing through *A*.
3. Label points where the circles intersect *C* and *D*.
4. Construct line .
5. Label the intersection of and point *E*.

Claim: and *EA = EB.*

**Proof**

1. Construct segments , , , and .
2. Prove that two pairs of triangles are congruent:

First ∆*CAD* ∆*CBD.*

Then ∆*CAE* ∆*CBE.*

1. Use the second pair of triangles to prove that and *EA = EB.*