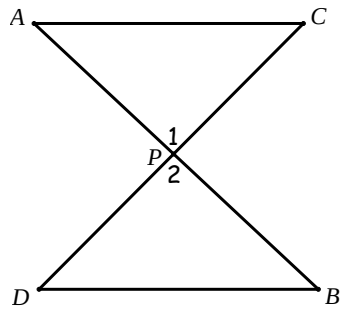
Geometry R – Mr. Bo
Unit 5 – Day 2 (Activity)

Name:_____
Date:_____

Class Demo:

1. Given: $\overline{AB}$ & $\overline{CD}$ bisect each other at P.

   Prove: $\Delta ACP \cong \Delta BDP$

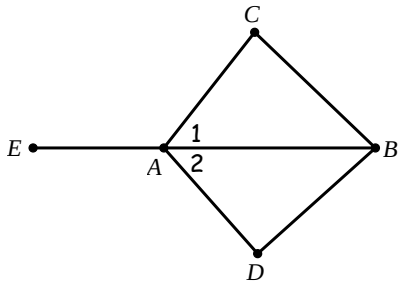


Statements	Reasons
1. $\overline{AB}$ & $\overline{CD}$ bisect each other at P.	1. Given
2. P midpt. of $\overline{AB}$ P midpt. of $\overline{CD}$	2. Seg. Bisector goes through a midpoint.
3. $\overline{AP} \cong \overline{BP}$ $\overline{DP} \cong \overline{CP}$	3. Midpoint divides segment into 2 congruent segments
4. $\angle 1 \, vertical \, to \, \angle 2$	4. non-adj. angles formed by 2 intersecting lines are vertical
5. $\angle 1 \cong \angle 2$	5. Vertical angles are congruent
6. $\Delta ACP \cong \Delta BDP$	6. SAS

Group Activity:

1. Given: $\overline{EAB}$
   $\angle EAC \cong \angle EAD$
   $\overline{CA} \cong \overline{DA}$

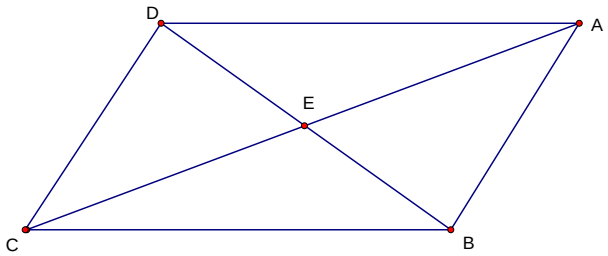
   Prove: $\Delta ACB \cong \Delta ADB$



Statements	Reasons
1. $\overline{EAB}$ $\angle EAC \cong \angle EAD$ $\overline{CA} \cong \overline{DA}$	1. Given
2. $\angle 1$ supplementary to $\angle EAC$ $\angle 2$ supplementary to $\angle EAD$	2. adj. angles formed by 2 intersecting lines are sup.
3. $\angle 1 \cong \angle 2$	3. Congruent angles have congruent supplements.
4. $\overline{AB} \cong \overline{AB}$	4. Reflexive
5. $\Delta ACB \cong \Delta ADB$	5. SAS

2. Given: $\overline{DA} // \overline{CB}$
$\overline{AC}$ bisects $\overline{DB}$ at E

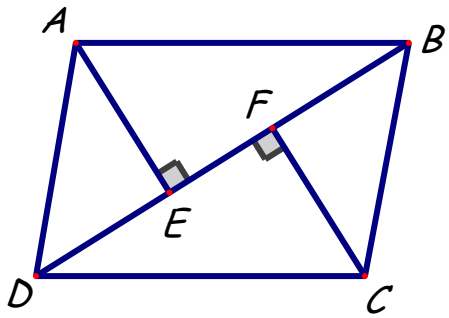
Prove: $\Delta DEA \cong \Delta BEC$



Statements	Reasons
1. $\overline{DA} // \overline{CB}$, $\overline{AC}$ bisects $\overline{DB}$ at E	1. Given
2. $\angle ADE \cong \angle CBE$	2. // cut by a trans. make alt. int. angles congruent.
3. E is midpoint of $\overline{DB}$	3. Seg. Bisector goes through the midpoint.
4. $\overline{DE} \cong \overline{BE}$	4. Midpt. divides a seg. into 2 congruent segs.
5. $\angle DEA$ vertical to $\angle BEC$	5. non-adj. angles formed by 2 intersecting lines are vertical.
6. $\angle DEA \cong \angle BEC$	6. Vert. angles are congruent
7. $\Delta DEA \cong \Delta BEC$	7. ASA

3. Given: $\overline{AE} \cong \overline{FC}$
$\overline{DE} \cong \overline{BF}$
$\overline{AE} \perp \overline{DEFB}$
$\overline{CF} \perp \overline{DEFB}$

Prove: $\Delta AEB \cong \Delta CFD$



Statements	Reasons
1. $\overline{AE} \cong \overline{FC}$, $\overline{AE} \perp \overline{DEFB}$, $\overline{CF} \perp \overline{DEFB}$	1. Given
2. $\angle AEB$ is a right angle, $\angle CFD$ is a right angle	2. Perpendicular lines meet at right angles.
3. $\angle AEB \cong \angle CFD$	3. all right angles are congruent
4. $DE = BF$	4. Given
5. $DE + EF = BE + EF$	5. Addition
6. $DF = BE$	6. Segment Addition
7. $\Delta AEB \cong \Delta CFD$	7. SAS