

## Transversals

ID: 10989

 Time required  
*15 minutes*

## Activity Overview

*In this activity, students will explore corresponding, alternate interior and same-side interior angles. This is an introductory activity where students will need to know how to grab points in Cabri Jr.*

Topic: Points, Lines &amp; Planes

- *Corresponding angles are congruent*
- *Alternate Interior angles are congruent*
- *Same-Side Interior angles are supplementary*

## Teacher Preparation and Notes

- *This activity was written to be explored with Cabri Jr.*
- ***To download the calculator file and student worksheet, go to [education.ti.com/exchange](http://education.ti.com/exchange) and enter "10989" in the quick search box.***

## Associated Materials

- *GeoWeek02\_Transversals\_worksheet\_T184.doc*
- *TRNSVRSL.8xv (Cabri Jr. file)*

## Suggested Related Activities

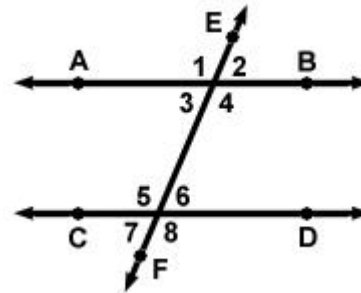
*To download any activity listed, go to [education.ti.com/exchange](http://education.ti.com/exchange) and enter the number in the quick search box.*

- *Parallel Lines and the Transversals that Cross Them! — 8757*
- *TAKS: Are They Special Angles — 9787*
- *Angles formed by Parallel Lines cut by a Transversal — 9559*
- *Exploring Parallel Lines and Angles — 9224*
- *Angle Relationships — 8670*

### Exploring Parallel Lines cut by a Transversal

Before beginning the activity, students should know the definition of corresponding, alternate interior and same-side interior angles.

Questions 1, 2, and 3 ask students to name pairs of angles from the diagram. This should be done without the use of the calculator.

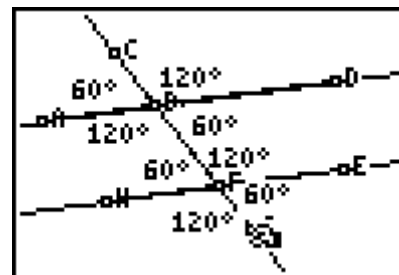


Students will now run the Cabri Jr. App and open the file **TRNSVRSL**. To open a file, they should press  $\boxed{Y=}$  and select Open.

By moving point G, students will discover the properties of two parallel lines cut by a transversal. To move a point, students need to move the cursor over the point (a square) and press  $\boxed{ALPHA}$ .



For Questions 4, 5, and 6, students will move point G to four different places. They should record the angle measurements in the tables on the worksheet. Then, students should try to generalize their results in the Conjecture section.



There are two application problems at the end of the worksheet for students to apply what they have learned in the activity. These problems can be done as homework.

### Solutions – student worksheet

1.  $\angle 4$  and  $\angle 5$  is another pair
2.  $\angle 4$  and  $\angle 6$  is another pair
3.  $\angle 4$  and  $\angle 8$  is another pair
- 4a. Corresponding
- b. Sample measurements.

	1 <sup>st</sup> position	2 <sup>nd</sup> position	3 <sup>rd</sup> position	4 <sup>th</sup> position
$m\angle ABC$	109	84	56	37
$m\angle HFB$	109	84	56	37

- c. Congruent

**5a. Same-Side Interior**
**b. Sample measurements.**

	1 <sup>st</sup> position	2 <sup>nd</sup> position	3 <sup>rd</sup> position	4 <sup>th</sup> position
$m\angle ABF$	150	136	112	75
$m\angle HFB$	30	44	68	105

**c. Supplementary**
**6a. Alternate Interior**
**b. Sample measurements.**

	1 <sup>st</sup> position	2 <sup>nd</sup> position	3 <sup>rd</sup> position	4 <sup>th</sup> position
$m\angle DBF$	43	60	108	125
$m\angle BFH$	43	60	108	125

**c. Congruent**
**Conjectures**

For parallel lines and a transversal...

7. if two angles are corresponding angles, then they are congruent.
8. if two angles are alternate interior angles, then they are congruent.
9. if two angles are same-side interior angles, then they are supplementary.

**Extra Problems**

10.  $\angle 1$ ,  $\angle 2$ , and  $\angle 3$  are all equal to  $55^\circ$
11.  $108 = 7x - 4$  and  $y = 72$   
 $112 = 7x$   
 $16 = x$