

Transversals

ID: 10991

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 change between pages and grab points.

Topic: Points, Lines & 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 the TI-Nspire and can be used as a paperless document, if desired.*
- *The multiple choice items are self-check and students can check them by pressing  +  on the NavPad.*
- ***To download the student TI-Nspire documents (.tns files) and student worksheet, go to education.ti.com/exchange and enter “10991” in the quick search box.***

Associated Materials

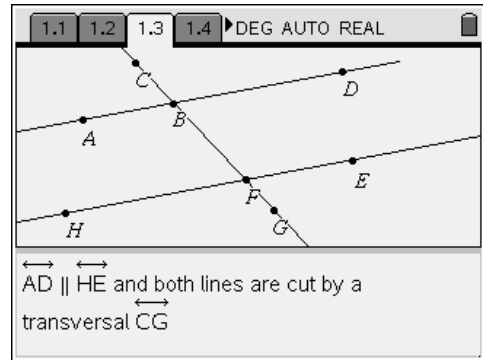
- *GeoWeek02_Transversals_worksheet_TI-Nspire.doc*
- *GeoWeek02_Transversals.tns*
- *GeoWeek02_Transversals.doc*

Suggested Related Activities

- *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*

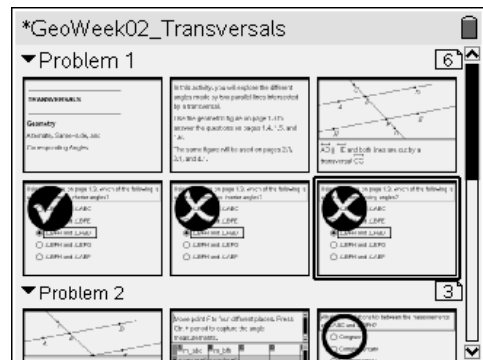
Part 1

Prior to this activity, students should know the definition of corresponding, alternate interior and same-side interior angles. The figure that is shown on page 1.3 will also be used on pages 2.1, 3.1, and 4.1.



On pages 1.4, 1.5, and 1.6 the students should answer the multiple choice questions (self-check) in which they name pairs of angles from the figure. Directions are given on the worksheet for how students are to select their answer.

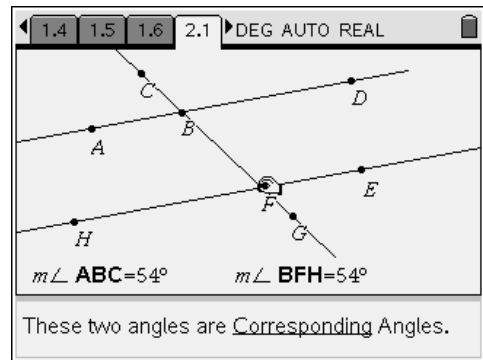
After answering all questions students should check their answers by pressing **ctrl** + **▲**. If they are correct, they will see a check mark and if they are incorrect, they will see an x.



Parts 2, 3, and 4

On page 2.1, students are to classify the two angles that are measured. A spreadsheet is set up on page 2.2 to capture the measurements of $\angle ABC$ and $\angle BFH$.

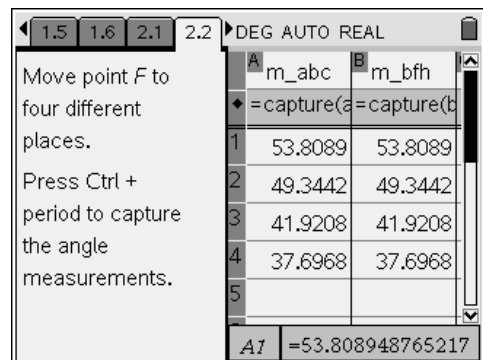
As they move point F , students are to press **ctrl** + **.** to capture the angle measurements. They should do this at least four times.



This data will appear in the spreadsheet on the next page. From this data, students are to decide if these two angles are congruent, supplementary, or complementary. This multiple choice question is a self-check.

Students will repeat this process for Parts 3 and 4.

They need to summarize their conjectures about the different types of angles on page 5.1. This is the only question that cannot be self-checked.



Solutions – student worksheet

Part 2

1. Corresponding
2. Sample measurements.

	1 st position	2 nd position	3 rd position	4 th position
$m\angle ABC$	109	84	56	37
$m\angle BFH$	109	84	56	37

3. Congruent

Part 3

1. Same-Side Interior
2. Sample measurements.

	1 st position	2 nd position	3 rd position	4 th position
$m\angle ABF$	150	136	112	75
$m\angle BFH$	30	44	68	105

3. Supplementary

Part 4

1. Alternate Interior
2. Sample measurements.

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

3. Congruent

Conjectures

For parallel lines and a transversal...

1. if two angles are corresponding angles, then they are congruent.
2. if two angles are alternate interior angles, then they are congruent.
3. if two angles are same-side interior angles, then they are supplementary.

Extra Problems

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