

Parallel lines cut by a transversal
Activity by Linda Jackson

This is a non-technological approach to supplementing the lessons done on the computer and hand held device, as well as an assessment to assess vocabulary and concept.

Learning styles accommodated:

Kinesthetic
Visual
Linguistic
Intra-personal
Auditory

Content Standards and Objectives:

G3.6 explore the relationship between angles formed when two parallel lines are cut by a transversal.

Vocabulary and concepts that are being reinforced:

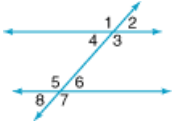
Transversal
Corresponding angles
Alternate interior angles
Alternate exterior angles
Same - side interior angles
Same - side exterior angles
Vertical angles
Straight angles
Conjecture

Materials needed

Patty paper
Straight edge
Protractor
Worksheet (provided)
Pencil

Directions:

1. Construct 2 parallel lines in the space below, (it should be larger than the construction shown) and construct a transversal through the parallel lines.



2. Place a piece of patty paper or tracing paper on top of original construction and copy the figure. Make sure to label all the angles.
3. Slide the tracing down to the second set of angles, make a conjecture i.e. what do you notice about the angles?

List all the angles that are equal to angle a.

Write next to that angle whether it is:

Corresponding, alternate interior, alternate exterior or vertical.

List all angles that are equal to angle b.

Write next to that angle whether it is:

Corresponding, alternate interior, alternate exterior or vertical.

5. Based on this activity make a conjecture about the 4 types of angles:

In parallel lines cut by a transversal, alternate interior angles are _____

In parallel lines cut by a transversal, alternate exterior angles are _____

In parallel lines cut by a transversal, corresponding angles are _____

In parallel lines cut by a transversal, vertical angles are _____

6. Using what you know about supplementary angles and what you learned from this activity measure one angle and find the value of the remaining angles.

Angle a =

Angle b =

Angle c =

Angle d =

Angle e =

Angle f =

Angle g =

Angle h =

7. Repeat steps 1 through 6, constructing the transversal in a different location.

List all the angles that are equal to angle a.

Write next to that angle whether it is:

Corresponding, alternate interior, alternate exterior or vertical.

List all angles that are equal to angle b.

Write next to that angle whether it is:

Corresponding, alternate interior, alternate exterior or vertical.

Angle a =

Angle b =

Angle c =

Angle d =

Angle e =

Angle f =

Angle g =

Angle h =

Has your conjecture from step 5 been confirmed or not? Explain.

Web Sites used:

www.geom.uiuc.edu/~dwiggins/conj16.html

This web site was used to provide an explanation of terms and to introduce preliminary concepts.

<http://archives.math.utk.edu/topics/geometry.html>

Click on connecting Geometry

Click on Chapters

Click on Chapter 7

This site was used to show an example of a real world situation i.e. Frank Lloyd Wright's house, Falling Waters.

www.regentsprep.org

Click Math a

Click #4 modeling multiple representations

Click types of angles

Click L angles with parallel lines

Click P Practice with angles and parallel lines

This site can be used as an assessment tool

www.glencoe.com

Click Secondary Education

Click Mathematics

Click Online study tools

Click WV

Click Geometry (concepts and applications)

→ 2004 ed → Self check/quizzes → Chap 4 → lesson 4.2

This site can also be used as an assessment tool, each time you click on self check/quizzes a different quiz is generated.