

**Date:** April 26, 2010

**Subject:** Geometry

**Grade:** 7

**Unit:** Geometry and Spatial Reasoning (Chapter 6)

**Lesson:** Line and Angle Relationships (6-1)

**Source:** Math Connects: Concepts, Skills, and Problem Solving by Day, et.al. (Volume 2, Teacher's Edition)

**Student Teacher:** Irma Crespo

**Objective (Purpose):**

Identify special pairs of angles and relationships of angles formed by two parallel lines cut by a transversal. (p.306)

**GLCEs:** MI\_MATH\_K-07-G-TR-03 (*G.TR.07.03*)

**Materials:**

Pens, pencils, papers, lecture worksheets, lecture notes, practice worksheets, calculators

**Procedure:**

***Anticipatory Set***

- The routine of homework checking is implemented.
- The pre-lesson activity is called “Xs, Ls, and Straight Lines.”
- A student is called to draw a large “X” on the board.
- The teacher asks the class what it reminds them of in geometry.
- Possible answers: lines, intersecting lines, two lines that cross, angles
- Another student is instructed to draw a large “L” on the board.
- The same query is raised: what can they relate “L” with in geometry?
- Possible answers: right angle,  $90^\circ$  angle, stays right angle no matter how it is positioned
- Lastly, a different student draws a “straight line” on the board.
- The teacher once again asks how they can connect the “straight line” with in geometry.
- Possible answers: a line is infinite or it never ends, different from line segment because a line segment has a beginning point and an ending point, has  $180^\circ$  angle
- After fulfilling these tasks, the teacher introduces the current lesson, which involves the visual representations made on the board.

***Questions to Check for Understanding***

Students are asked to identify vertical angles, complementary angles, and supplementary angles. With these concepts, finding missing angle measures follows by posing the questions on which angle type is appropriate to solve the problem. When these ideas are established, the lesson on transversals is next – emphasizing on questions that help students recognize interior angles, exterior angles, and corresponding angles.

### ***Modeling/Guided and Independent Practice***

- The teacher states that today's lesson is all about lines and angles. "With the Xs, Ls, and straight lines, we can remember special pairs of angles – vertical angles, complementary angles, and supplementary angles."
- Each type is discussed one at a time.
- A lecture worksheet is distributed for students to complete while discussions are ongoing. This is to enhance note-taking skills.
- Starting with vertical angles, its definition is expounded with illustration.
- On finding missing angle measures with vertical angles, various examples are provided, which are solved interactively by both teacher and students.
- Moving on to complementary angles, its definition is explained with images.
- Examples are given in finding angle measures with complementary angles. These are discussed and resolved interactively.
- Continuing on to supplementary angles, its definition is explained with drawings.
- Examples are presented in finding angle measures with supplementary angles. These are solved in a whole class discussion.
- For guided practice, a potpourri of measurement problems covering all three types is posed for student recitation.
- To set the stage for transversals, a quick introduction on perpendicular and parallel lines occurs.
- Examples of perpendicular lines and parallel lines are exhibited with their definitions.
- The definition of "transversal line" is given with illustrations.
- Then, the concepts of alternate interior angles, alternate exterior angles, and corresponding angles are discussed interactively with drawn examples.
- Practice worksheets are handed out for individual completion. These are submitted for grading.

### ***Closure Activity***

- The teacher summarizes the current lesson with recap of the main points.

### ***Extension and Application***

The exit slip gives opportunity for students to suggest other ways to remember vertical angles, complementary angles, and supplementary angles besides "Xs, Ls, and straight lines." It is an artifact of student understanding. Skill Practice worksheet (6-1, page 11) is a homework that reinforces the lessons learned.

### ***Behavior Management Strategy***

- Mix of lecture, interactive discussion, and individual work for differentiated instruction.
- The lecture worksheet enhances note-taking skills. With its completion, students realize the significance of note-taking when they take it home to do homework.
- Reiterating the students' contribution to the class discussion is a way to compliment student participation.
- Recitation improves the students' mathematical discourse.

## **Assessment of Objectives**

### ***1. Evaluation of Student Learning***

The teacher evaluates how much the students learned through the activity/practice worksheets, which fulfill the GLCE standards on geometry and spatial reasoning.

**Attachments:** Activity/practice worksheets and lecture notes

Lecture worksheet I created for students so they can be proficient at note-taking.

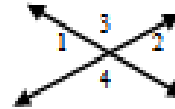
Name \_\_\_\_\_ Date \_\_\_\_\_ Hour \_\_\_\_\_

**Lines and Angle Relationships**  
(Lecture Notes)  
Special Pairs of Angles

**VERTICAL ANGLES** are \_\_\_\_\_

$\angle$  \_\_\_\_\_ and  $\angle$  \_\_\_\_\_ are vertical angles.

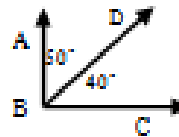
$\angle$  \_\_\_\_\_ and  $\angle$  \_\_\_\_\_ are vertical angles.



Vertical angles are congruent.

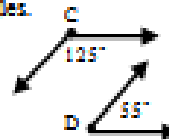
The sum of the measures of **COMPLEMENTARY ANGLES** is \_\_\_\_\_.

$\angle$  \_\_\_\_\_ and  $\angle$  \_\_\_\_\_ are complementary angles.



The sum of the measures of **SUPPLEMENTARY ANGLES** is \_\_\_\_\_.

$\angle$  \_\_\_\_\_ and  $\angle$  \_\_\_\_\_ are supplementary angles.



**Transversal** is a line that \_\_\_\_\_

*Alternate interior angles* are angles inside the two lines that lie opposite the transversal.

$\angle$  \_\_\_\_\_  $\cong$   $\angle$  \_\_\_\_\_       $\angle$  \_\_\_\_\_  $\cong$   $\angle$  \_\_\_\_\_

*Alternate exterior angles* are angles outside the two lines that lie opposite the transversal.

$\angle$  \_\_\_\_\_  $\cong$   $\angle$  \_\_\_\_\_       $\angle$  \_\_\_\_\_  $\cong$   $\angle$  \_\_\_\_\_

*Corresponding angles* are angles that are in the same position on the two lines and on the same side of the transversal.

$\angle$  \_\_\_\_\_  $\cong$   $\angle$  \_\_\_\_\_       $\angle$  \_\_\_\_\_  $\cong$   $\angle$  \_\_\_\_\_

