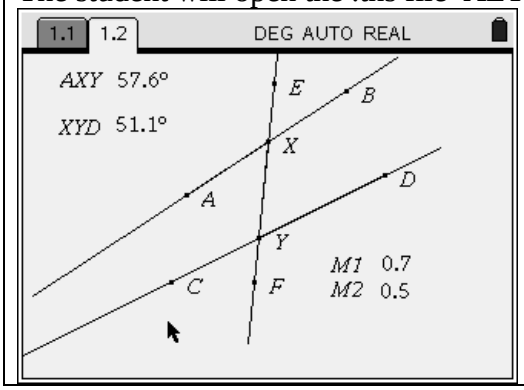
Teacher Notes

G.G.35 Determine if two lines cut by a transversal are parallel, based on the measure of given pairs of angles formed by the transversal and the lines.

Lesson Launcher Objectives:

1) **Identifying alternate interior angle pairs when two lines are cut by a transversal.**
2) **Discovering when lines are parallel by investigating the measures of alternate interior angle pairs**

Procedure:

The student will open the .tns file ALTINT 	As the student explores the figure by moving various points they will be able to conclude the relationship between equal alternate interior angles and parallelism.

Investigating $\angle AXY$ and $\angle XYD$:

1. Both responses are true.

2. In this exercise we are investigating alternate interior angles

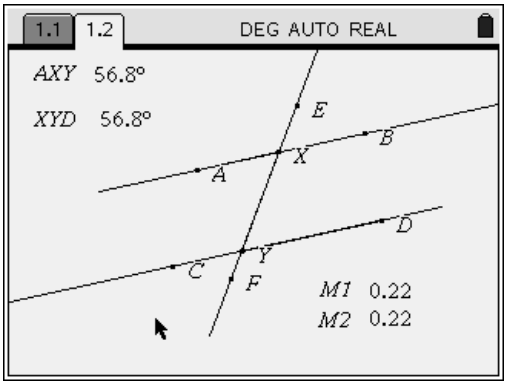
3-6 When point A is moved the measures of $\angle AXY$ and $\angle XYD$ change. The measures of the slopes change as well. The same thing can be surmised from moving the other points in the figure.

7-8 $\overleftrightarrow{AB} \not\parallel \overleftrightarrow{CD}$

Fill in the blank:

If two lines are cut by a transversal and the alternate interior angles are equal then the lines are Parallel.

After opening ALTINT2 the students will investigate the converse of this theorem.

Open .tns document ALTINT2 	As the student explores the figure by moving various points they will be able to conclude the relationship between equal alternate interior angles and parallelism.

Investigating $\angle AXY$ and $\angle XYD$:

1. Both responses are true.

2. In this exercise we are investigating alternate interior angles

SELECT, GRAB AND MOVE **point C**

3. What changes? The lines move but remain parallel.
4. What remains the same ? the measures $\angle AXY$ and $\angle XYD$: the lines remain parallel

SELECT GRAB AND DRAG **point D**

5. What changes? The lines move but remain parallel.
6. What remains the same ? the measures $\angle AXY$ and $\angle XYD$: the lines remain parallel

Fill in the blank:

7. In this exercise $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ were always parallel.
8. If two parallel lines are cut by a transversal then the alternate interior angles are equal