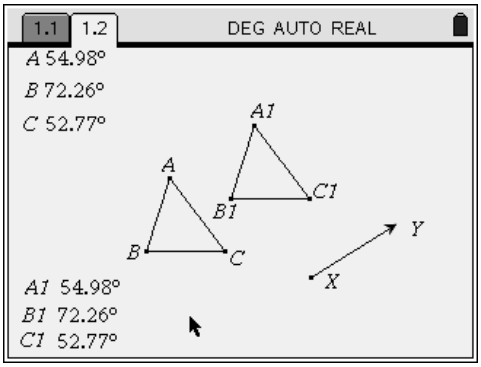
Teacher Notes

G.G.55 Investigate, justify, and apply the properties that remain invariant under translation. ANGLE MEASURE

Lesson Launcher Objective:

1) **Discover that angle measure is preserved under a translation.**

Procedure:

The student opens the .tns document TRNSLA2 	ΔA1B1C1 is the image of ΔABC under a translation. The measures of the angles of the triangles have been indicated. The student will explore the figure by dragging the vertices of the ΔABC

1.) Select, grab and drag points A, B, C.

What is changing? The measures of the angles of the triangles.

What is remaining the same? The pre-image angle and image angle always have the same measure.

2.) Select grab and drag segment XY.

What is changing? The position of XY

What is remaining the same? Everything

3.) Select grab and drag point X or point Y.

What is changing? The measures of the angles of the triangles.

What is remaining the same? The pre-image angle and image angle always have the same measure

3) Select, grab and drag point A, B, C, X or Y. As you move the point, stop and record 5 successive trials by entering the measures of the angles in the table below.

Trial #	$\angle ABC$	$\angle A1B1C1$	$\angle BCA$	$\angle B1C1A1$	$\angle CAB$	$\angle C1A1B1$
1						
2						
3						
4						
5						

Answers will vary from student to student.

4) What seems to be true about the measures of $\angle ABC$ and $\angle A1B1C1$? They are always equal.

5) Name two other pairs of angles that demonstrate this same property.
$\angle BCA$ and $\angle B1C1A1$, $\angle CAB$ and $\angle C1A1B1$

6) Under a translation is angle measure preserved? yes

7) In your own words explain what it means when a property is preserved.

Answers will vary.