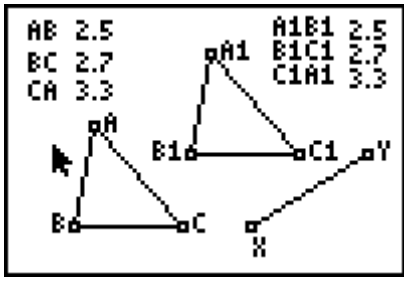
Teacher Notes

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

Lesson Launcher Objective:

1) Discover that distance is preserved under a translation.

Procedure:

The student opens Cabri Jr. and the APPVAR TRNSLA1 	ΔA1B1C1 is the image of ΔABC under a translation. The measures of the sides of the triangles have been indicated. The student will explore the figure by dragging the vertices of the ΔABC

1.) Select grab and drag point A.

What is changing? The measures of all the sides.

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

2.) Select grab and drag point B.

What is changing? The measures of all the sides.

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

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

What is changing? The measures of all the sides

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

4) As you select, grab and drag point A, B, C , X, Y stop and record 5 successive trials by entering the distances in the table below.

Trial #	AB	A1B1	BC	B1C1	CA	C1A1
1						
2						
3						
4						
5						

Answers will vary.

5) What seems to be true about the distances AB and A1B1? Always equal

6) Name any other pairs of segments that share this same property. BC, B1C1 and CA, C1A1

7) Under the transformation rotation about a point is distance preserved? yes

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

Answers will vary

9) In ΔABC as you move from point A to point B to point C is this movement clockwise or counterclockwise? counterclockwise

10) In ΔA1B1C1 as you move from point A1 to point B1 to point C1 is this movement clockwise or counterclockwise? counterclockwise

11) This movement helps us to define the **orientation** of the pre-image and the image. Is orientation preserved under a translation? Yes