Objective
· To reinforce geometric
vocabulary.
· Investigate properties of
reflections, and find relationships.

# Introduction to Properties in Reflections

Introduction:

In this activity you will explore properties of reflections. Using Cabri Jr., you will construct a line segment, reflect two points over the segment, and collect measurements of angles, and line segments formed by the reflection of the original points. Properties of reflections have applications in lighting, satellite transmission, and recreation activities such as pool and miniature golf.

Construction and Exploration

Part I: Create reflection diagram.

1. Create a segment in the middle of the screen.

2. Label the segment AB. Press enter on the point you wish to label,

 type the letter A. Repeat for point B. Recall the alpha lock is on.
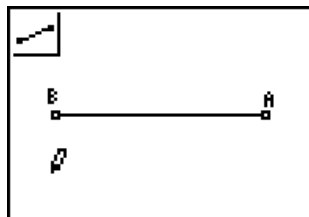
3. Place two points above the line segment. Label P and Q.

4. Reflect points P and Q over segment AB. To perform a reflection,
 select point Q and segment AB. Repeat for point P.

5. Create a segment from point Q to the reflection of point P.
 Repeat for point P.
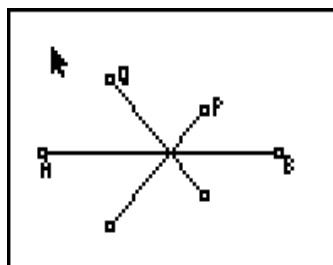
6. Find the intersection point of the three segments and label it C.
Press enter when at least two of the segments are selected.
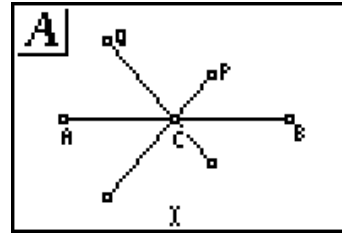
Part II: Measure angles and segments.

1. Measure ∠ACQ and ∠BCP. _____

2. Make a conjecture about the measurements of ∠ACQ and ∠BCP.
   Test your conjecture by using the alpha key to dynamically change
   points P and Q. Record your results.

3. Draw the segment from point P to it's reflection and from point Q
   to it's reflection.

4. Find the intersection point of each segment you constructed in
   step 3 above, and line AB. Label the intersection points D and E.
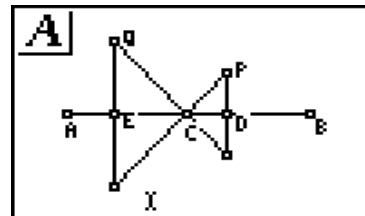
5. Measure the distance from the reflection of point P to D, and
   the distance from point P to D. Repeat for point Q and point E.

6. Make a conjecture about the measurements you collected above.
   Verify your conjecture by dynamically changing the diagram.