Perform Reflections (Section 9.3)

Objective: LWBBAT perform reflections in a coordinate plane.

Standards: G3.1.1 Define reflection, rotation, translation, and glide reflection, and find the image of a figure under a given isometry.

Materials: Discovering Reflections in the Plane Worksheet, SMART Notebook for Section 9.3, Practice Worksheet for Section 9.3

Vocabulary: line of reflection, reflection

Procedure: Warm Up/Attendance (10 min)
While students enter the room, the warm up will be on the board. They will be working on the warm up while I take attendance. The warm up will consist of reviewing vectors and translations. After about 5 minutes, we will go over the warm up as a class; the answers will come from the students mostly.

Review Worksheet (~10 min)
I will post the answers to their Section 9.1 B Worksheet and we will discuss any questions the students have on questions they answered incorrectly.

Activity (15 - 20 min)
Hand out the “Discovering Reflections in the Plane” worksheet. The students will work on this worksheet individually. Through the worksheet, they will graph different reflections and figure out what is happening. By doing this, they will be ‘discovering’ how a reflection works and what the line of reflection is. After they work on the worksheet for about 10 minutes, we will have a 5 – 10 minute discussion over their answers.

Notes (10 - 15 min)
The students will then have notes over reflections, the line of reflection, the coordinate rules of reflections, and the reflection theorem.

Practice (~25 min)
The students will then get the Section 9.3 B Worksheet and will practice problems 1 – 6, 12 – 18. This is where we will take time out of class if one section runs longer than previously planned.

Homework: There will be no specific homework given. If the students did not finish the worksheet, then they will need to finish it at home.

Assessment: Formative assessment will be done through the warm up, the discussion the class has from the activity, and the worksheet.
Reflections in the Plane

Name: __________________________

**Materials:** Graph Paper, Ruler, and a Pencil

**Explore:** Graph a reflection of a triangle. (Not sure what a reflection of a triangle is, try to figure it out!)

1. **Step 1 - Draw a triangle:** Graph A(-3, 2), B(-4,5), and C(-2, 6). Connect the points to form ΔABC.

2. **Step 2 - Graph a reflection:** Reflect ΔABC in the y-axis. Label points A’, B’, and C’.

3. **Step 3 - Draw Segments:** Draw $\overline{AA'}$, $\overline{BB'}$, and $\overline{CC'}$. Label the points where these segments intersect (or cross) the y-axis as F, G, and H, respectively.

**Draw Conclusions:**

1) Find the lengths of $\overline{CH}$ and $\overline{CH'}$, $\overline{BG}$ and $\overline{GB'}$, and $\overline{AF}$ and $\overline{FA'}$. **Compare** the lengths of each pair of segments.

2) Find the measures of $\angle CHG$, $\angle BGF$, and $\angle AFG$. **Compare** the angle measures.

3) How is the y-axis related to $\overline{AA'}$, $\overline{BB'}$, and $\overline{CC'}$?