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Translations Using Project Interactivate

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Lesson Plan Template

Name: Sandy Zalewski

Grade level(s)/Subject taught: Math 8

Objectives:

Students will be able to describe and explain what happens to an object after a reflection, translation and a rotation

Students will be able to perform a translation and a reflection on a figure

Student will be able to identify a rule they can use to perform the transformation

Mathematical Concept:

8.R.1 Use physical objects, drawings, chart, tables, graphs, symbols ,equations or objects created using technology as representations

8.R.2 Explain, describe and defend mathematical ideas using representation.

8.G.8 Draw the image of a figure under a reflection over a given line

8.G.10 Draw the image of a figure under a translation

Materials:

LCD Projector

Laptops

Powerpoint - Transformations

Warm Up - TransmoGrapher Warm Up

Classwork Sheet – TransmoGrapher Classwork

Homework – TransmoGrapher Homework

Warm Up:

Plot and label points on a coordinate grid

Launch:

Define transformations and image

Model Project Interactivate – TransmoGrapher

Explore:

In groups of 3 – 4 students will explore idea of a translations using the TransmoGrapher modeling tool.

Using the class work sheet they will discover how the a positive and a negative integer affects the movement of a figure.

Students will discover the rule for determining the coordinates of an image

Summary:

Student volunteers will describe or demonstrate using the model what a translation means

Student will share their rules for their transformations

Using Project Interactivate – Transmo Grapher, I plan on having my students discover what happens under a translation. In future lessons we will use this modeling tool to discover the properties of a reflection and a rotation. By using this tool students will be able to describe what happens to a figure under a translation, what will cause a figure to move left, right, up or down. At the end of this lesson students should be able to write a rule to define a translation.

The lesson will start with a warm up. The warm up is graphing exercise to review plotting and labeling points on coordinate grid. This should take 5 -10 minutes. I will ask a student volunteer to come to white board (I use the LCD to project my PowerPoint on the white board) to share the solution.

Next, I will use my PowerPoint to introduce the definitions for transformations. I will then demonstrate how to use the Transmo Grapher for a translation. I will walk through an example. I do not want to explain too much because I want the students to “play” with the model and make their own observations. This should take about

5 – 10 minutes. The class will be split into groups of 3 or 4 depending on the number of laptops available.

During the explore time, students will follow the class work sheet to focus their investigation. They will start out by performing different translations by trying different values for units on the x axis and for units on the y axis. After these translations they can make some general observations. Next they will work with one figure, keeping track of the coordinates before and after each translation. The goal will be to determine the rule for each translation. During this explore time, I will be walking around to monitor group progress, keep students focused and assess student learning. This should take about 20 minutes.

In the summary, I will ask for students volunteers from each group to demonstrate a translation and explain what will happen to the figure and share the rule for the translation. This should take about 5 – 10 minutes. A homework assignment will be given to further reinforcement the lesson.

Rubric:

5 points Group Grade

- 5 – All group members participating
 - Task completed
 - Group members shared findings professionally
- 4 – Most group members participating
 - Task mostly complete
 - Group member attempted to share findings
- 3 – Only one member participating
 - Some work is done on task
 - One group member shared findings
- 0 – No attempt was may to participate or group completely off task
 - No work done on task
 - No attempt to share findings