

# EISENHOWER PROFESSIONAL DEVELOPMENT PROGRAM

## Mathematics Within: Shape, Space & Measurement

### Lesson Plan

**Participant Name:** Jean Karschnia

**School District:** VCC

**Broad Topic:** Geometry

**Specific Topic:** Transformations-Rotation

#### Objectives:

- o To introduce the vocabulary of rotation
- o To practice using rotation to make a design.

#### Lesson:

##### o Introduction

Introduce the idea of rotating an object. What does it look like?

##### o Vocabulary

*Clockwise/ Counter Clockwise*

*Degrees of rotation*

*Point of rotation*

*Vertex*

A Clock is a great manipulative to show direction and the degree of rotation. Have students stand and use their bodies to show rotation direction and degree of rotation.

- o **The Robot Game:** The students are robots that follow the directions given to rotate their bodies. Various directions are given and the students try to end up with their bodies facing in the appropriate direction. During the game have the students keep one foot on a mark and turn without moving that foot (just rotate on the ball of the foot). This simulates the point of rotation.

##### o Design

Students will use a shape to make a design using rotation. For the first try we used quadrilaterals to help simplify the activity. Students are to use the rotations of 90, 180, 270, and 360 degrees to start the design. For extension the students can use more complex rotations in their design.

##### o Group Discussion

After completing their designs, have the students get together with a partner and discuss.

- o What do they notice about their partner's design?
- o What are the similarities and differences in their designs?
- o Can they guess what the shape was that their partner used?
- o As a group, ask them to share something they noticed about their partner's design.

#### Where it fits in the curriculum:

Geometry and Spatial Relationships Tessellation

- o Connection to real world objects Basic geometry vocabulary
- o Coordinate graphing (extension)