

Rotational Symmetry

Lesson Overview

Students should have some prior knowledge of the vocabulary term symmetry from the previous lesson. Students will be introduced to rotational symmetry through a video and explore rotational symmetry in letters. Student pairs will determine whether various letters and shapes have rotational symmetry.

Standards Addressed

SC 6-4.3: Generalize the relationship between line symmetry and rotational symmetry for two-dimensional shapes.

Disciplinary Literacy Best Practices

Partner Dialogue

Exit Slips

Lesson Plan

Time Required: One 60-minute class period

Disciplinary Vocabulary: Rotational Symmetry, Order of Rotation

Materials Needed:

- 2 inch block letters N and B (2 of each letter per pair of students)
- Scissors (2 per pair of students)
- Pencil (1 per pair of students)

Assessment: Exit Slips

Engage

- Focus Question: “How do you know if a figure has rotational symmetry?”
- Students will use their background knowledge of the term “rotation” to think about the disciplinary vocabulary term “**rotational symmetry**”.
- The students will watch a short video to introduce rotational symmetry. After viewing the introductory video the teacher and students will discuss key elements of how to identify rotational symmetry.

Explore

- Each pair of students will get two 2 inch block letter Ns. One letter N will be cut out by one student. Students will work together to place the N they cut out on the uncut out N. They will use their pencil as the center of rotation to determine if the letter “N” has rotational symmetry, and for which degree turns.
- Students will share aloud with the class the results of their rotation. Teacher will label their results with the vocabulary term **order of rotation**.
- Student pairs will repeat the process with the block letter B.

Explain

- Students will share aloud what they discovered about the letters N and B. Did both of them show rotational symmetry or no and how do you know?
- The teacher will provide several examples for students to consider whether or not they have rotational symmetry. Students will explain whether each shape has rotational symmetry and if it does they will share the order of rotation.
- Students will complete several independent practice examples to check for understanding of rotational symmetry.

Extend

- Students will continue to explore line and rotational symmetry in future lessons, including exploration of the relationships between line and rotational symmetry.

Lesson Assessment: Students will complete an **exit slip** where they will answer the question from the beginning of the lesson. “*How do you know if a figure has rotational symmetry?*”

Teacher Reflections and Biographical Information

Many of my students are visual and kinesthetic learners. By having the students work with their partner to rotate the letter and have them watch to see if it matches up helped them to visualize rotational symmetry. It's important for them to make mistakes along the way and learn from them. Having students come up to the board to help each other and correct each other's mistakes is a great learning tool for these students.

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