

Snowflake Project

Standards:

- Students will be able to analyze rigid transformations

Your task today is to create a snowflake from both a circle template and a square template. I will provide you with both templates and help you to correctly fold the paper. You will then cut geometric shapes on the edges of the paper to create a snowflake when the paper is unfolded. For each of your two snowflakes, write a paragraph analyzing the symmetries and the transformations that are present in the snowflake. You must also identify the degrees of rotational symmetry and the lines of reflection symmetry for each snowflake. Finally, describe how the transformations and symmetries are different between your two snowflakes. In other words, how does the starting shape (circle or square) affect the transformations and symmetries present in the snowflake?

| Criteria | Poor | Good | Excellent |
|-----------------------------------|--|--|---|
| Snowflake Creation | Neither snowflake is folded according to instructions or both snowflakes are cut in a messy way (1 pt) | One snowflake is not folded according to instructions or there are some rips (2 pts) | Both snowflakes are folded according to instructions and neatly cut (3 pts) |
| Rotational Symmetry | Few symmetries are correctly identified with many errors (0 – 2 pts) | Most symmetries are correctly identified with very few errors (4 pts) | All symmetries are correctly identified (6 pts) |
| Reflection Symmetry | Few symmetries are correctly identified with many errors (0 – 2 pts) | Most symmetries are correctly identified with very few errors (4 pts) | All symmetries are correctly identified (6 pts) |
| Description of Differences | Description of differences is not present or is inaccurate (1 pt) | Differences are described, but not completely (3 pts) | Differences are thoughtfully and accurately described (5 pts) |

Total score: _____ / 20