Name _____ Date _____ Class _____

CHAPTER 12

Project

Let It Snow!

Activity 1: Drawing Snow Crystals *Use after Lesson 12-3*

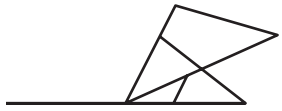
What most people think of as a snowflake is actually a collection of many snow crystals that are stuck together. The individual snow crystals have the delicate, six-sided shape that you often see in holiday decorations.

Use construction tools or geometry software to complete this activity.

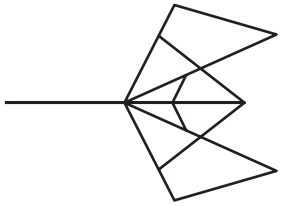
1. Draw a segment.

_____

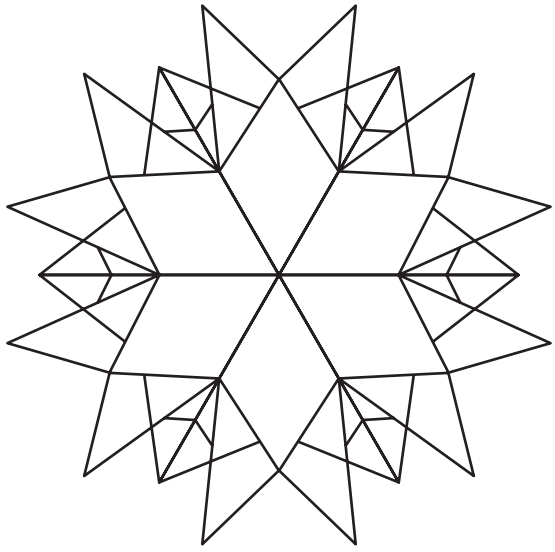
2. Draw several more segments attached to and above the right half of the original segment as shown.



3. Reflect the new segments across the original segment.



4. Rotate the entire figure 60° about the left end of the original segment. Repeat until you have six images, including the preimage, and have completed the snowflake.



5. Create other snow crystals using this method. If you are using geometry software, try dragging the points of the snow crystal to see how the design changes.

Name _____ Date _____ Class _____

CHAPTER 12

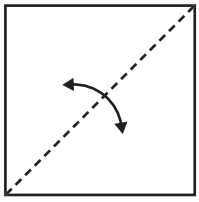
Project

Let It Snow!

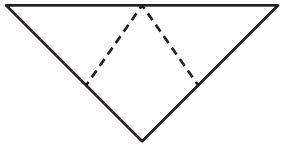
Activity 2: The Symmetry of Snow Crystals *Use after Lesson 12-5*

Follow these instructions to turn a square piece of paper into a snow crystal.

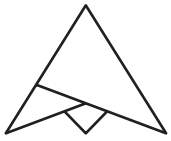
1. Fold a square piece of paper along one diagonal.



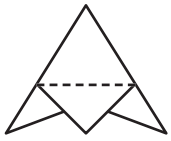
2. Place your protractor on the midpoint of the fold and draw lines at 60° angles, as shown.



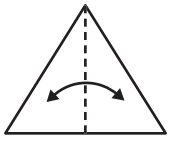
3. Fold the right and left portions along the lines.



4. Turn the paper over. Use a ruler to draw a new line as shown. Cut along this line.



5. Fold the paper as shown.



6. Cut one or more notches into each side of the folded paper. When you unfold the paper, you will have a snow crystal.

7. What is the order of rotational symmetry for your snow crystal? _____

8. Repeat the above process to make different snow crystals. Can you find a way to modify the method to make a snow crystal whose order of rotational symmetry is 3? If so, how?

_____

_____

_____