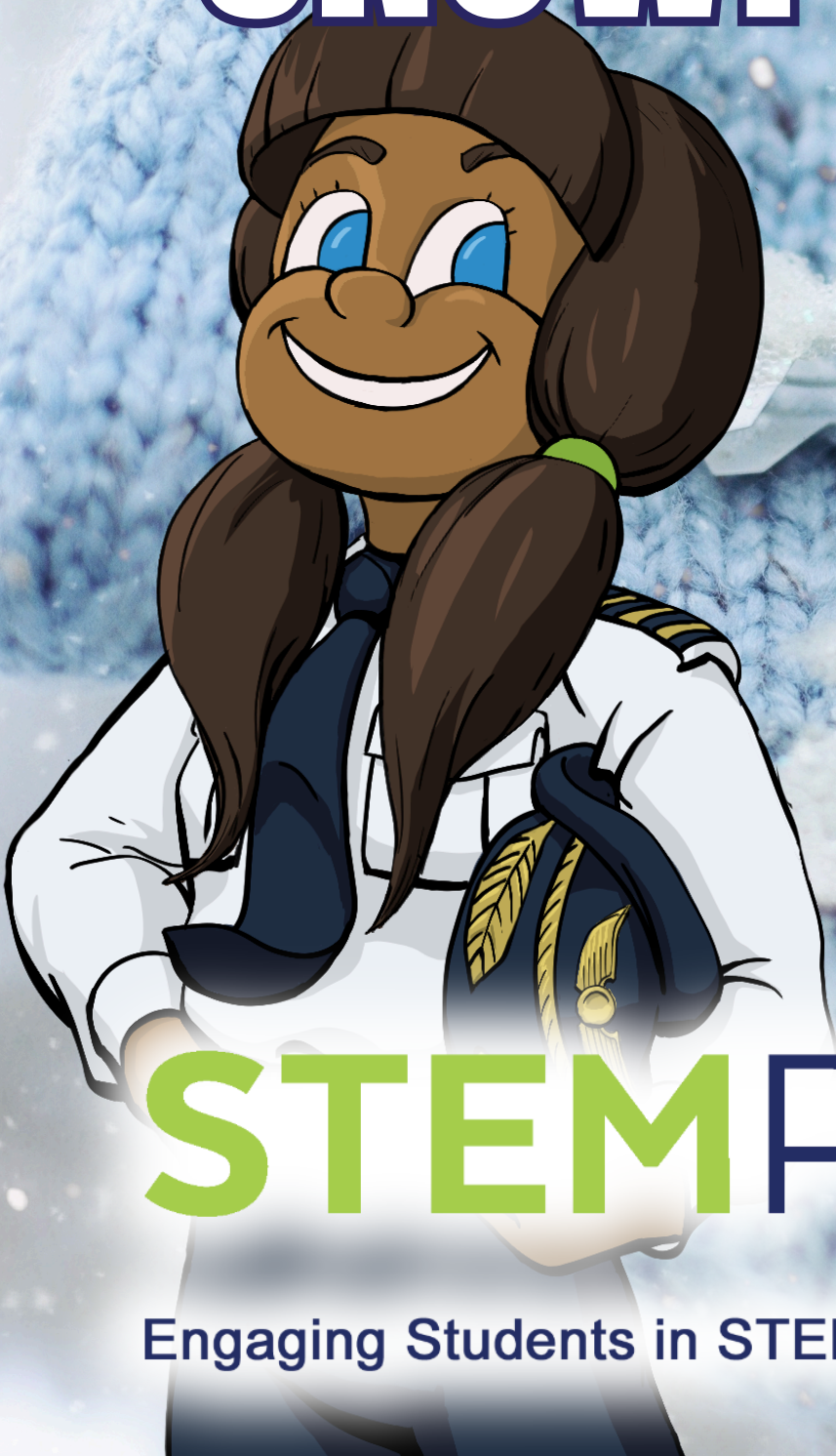


The SCIENCE of SNOWFLAKES



STEMPILOT®

Engaging Students in STEM with Flight Simulation

Snowflakes are more than just beautiful winter wonders—they're a fascinating example of how science, technology, engineering, and math (STEM) intersect in nature. Each snowflake forms through a complex combination of temperature, humidity, and molecular interactions, creating intricate and unique patterns.

Through this lesson, students will explore the geometry of symmetry, observe the natural principles of crystal formation, and connect weather science to hands-on creativity. Snowflakes remind us that even the smallest details in nature are full of STEM principles waiting to be discovered!

Lesson Plan: "The Science of Snowflakes"

Grade Level: K-5

Duration: 30-45 minutes

Materials Needed:

- White paper
- Scissors
- Black construction paper
- Magnifying glasses (optional)
- Crayons or colored pencils
- Access to online videos or books about snowflakes (optional)

Lesson Overview

Students will explore the unique patterns of snowflakes and learn the basics of symmetry. They will create their own paper snowflakes while understanding how real snowflakes form in nature.

Step-by-Step Instructions

1. Engage (5-10 minutes)

Start with a discussion:

- What do we know about snowflakes?
- Did you know that no two snowflakes are exactly alike?
- Show an engaging video or read a short book about snowflakes to introduce how they form in the atmosphere.

2. Explore (15 minutes)

- Provide each student with a square piece of white paper.
- Teach them to fold the paper into a triangle, then fold it again to make a smaller triangle.
- Guide them in cutting shapes along the folded edges to create a symmetrical snowflake

3. Explain (5 minutes)

- Unfold the snowflakes and place them on black construction paper to make the designs stand out.
- Use magnifying glasses to observe the intricate details of their snowflakes (if available).
- Discuss symmetry: How do the shapes on one side of the snowflake mirror the other side?

4. Extend (Optional, 5-10 minutes)

- Encourage students to color or decorate their snowflakes.
- For older students, calculate the angles or measure the lines of symmetry in their designs, integrating a bit of geometry into the lesson.

Take It Further

Tie the activity to STEM by discussing the role of temperature and humidity in creating different snowflake shapes. For younger students, compare snowflakes to other hexagonal patterns in nature, such as honeycombs!

Wrap-Up

Display the snowflakes around the classroom as a festive decoration. Remind students how their creations mirror the beauty of nature and the science behind it.

Pro Tip for Teachers: If snow isn't common in your area, you can connect this activity to learning about climates and how different environments impact weather patterns!

Happy Holidays from STEMPILOT!

Inspire your students to think creatively and critically while celebrating the wonder of the season!

