

## **Build a Snowflake Engineering Activity**

**Snowflakes** actually start out as tiny ice crystals that form from water vapor that freezes in the atmosphere. The size of a **snowflake** depends on how many ice crystals connect together. Each **snowflake** is made up of about 200 ice crystals. **Snowflakes** always have six sides.

**Engineering** is a scientific field and job that involves taking our scientific understanding of the natural world and using it to invent, design, and build things to solve problems and achieve practical goals. This can include the development of roads, bridges, cars, planes, machines, tools, processes, and computers.

An **engineer** is a person who designs and builds complex products, machines, systems, or structures. **Engineers** want to know how and why things work. They have scientific training that they use to make practical things. **Engineers** often specialize in a specific branch of **engineering**.

There are 5 different types of **engineers**.

1. **Mechanical engineers** are responsible for designing and manufacturing products and machines.
2. **Electrical engineering** is centered around electric-powered technology. These engineers work on electrical components, devices, and systems
3. **Industrial engineers** use a combination of science, mathematics, and engineering methods to design equipment, buildings, information systems, and more. These engineers also help run businesses by determining how many workers are needed for a project, how long the project will take, and the process involved in a project.
4. **Chemical engineers** use a combination of engineering and science to aid in the processing of food, create industrial chemicals, and make pharmaceuticals.
5. **Civil engineers** are responsible for city and country infrastructure. Civil engineering is one of the most recognizable of the engineering professions. In fact, it is also one of the oldest types of engineering in the world.

After listening to Mrs. Saari read, "Snowflake Bentley," by Jacqueline Briggs Martin, please **engineer** your own unique snowflake using toothpicks and marshmallows. Don't forget ALL snowflakes have **SIX** sides, so be sure your snowflakes have six sides, too. Good luck!!

Supplies needed: 20 mini marshmallows, 2 large marshmallows, 20 toothpicks