Simple Snow and Ice Science Experiment

You will need:

Two matching glass jars with lids (Mason jars work well), ice cubes and snow.

What to do:

Fill one mason jar with ice cubes and the second jar with snow.
Pack in as much as you can before placing the lids.
Do not use crushed ice.
Set the jars aside in a safe place.

Make some predictions!

1. Which jar will melt the fastest, the jar with the ice or the jar with the snow?
2. Which jar will have a greater volume of water when the snow/ice has melted? Observe what happens. This may take several hours.

Findings:

The jar with the snow will melt faster than the jar with the ice cubes. Why? Snowflakes are much smaller than ice cubes and have more surface area for heat to change it to a liquid state. The jar with the ice cubes will have a lot more water (more volume) than the jar with the snow once melted. (This may come as a surprise to your kids.)

Why does this happen?

The answer lies in the structure of water molecules. Water as a solid is called ice. The molecules in ice are packed very closely together. Snow, however, is ice in a crystallized form. The crystalline lattice of ice in a snowflake is more spread out and has more air spaces, and when it melts, the volume of water is much less than a cube of ice. Even though kids think they are packing in a lot of snow in the jar, they still are not able to pack them as tightly as the molecules are packed in a cube of ice.

Bonus Fact:

Did you know that all snowflakes on Earth have six-fold symmetry? This reflects the hexagonal arrangement of water molecules in the lattice.

Science is all around us! Happy experimenting!

Scientists in School has lots of fun, hands-on activities! Check them out on our website:
https://scientistsinschool.ca/resources/