

DESIGN A SNOWFLAKE!

What is a snowflake?

A snowflake begins life as a tiny droplet of supercooled water which freezes in the sky to create an ice crystal. The droplet becomes frozen either because temperatures are sufficiently cold to freeze to other droplets, they can form around a nucleus such as a dust or pollen particle.

Once the ice crystal has formed, if the conditions are right it will begin to grow, as water molecules in the air are deposited onto the ice crystal as it falls through the air and they clump together to form a snowflake.

Why are snowflakes hexagonal?

All snowflakes contain six sides or points owing to the way in which they form. The molecules in ice crystals join to one another in a hexagonal structure, an arrangement which allows water molecules - each with one oxygen and two hydrogen atoms - to form together in the most efficient way.

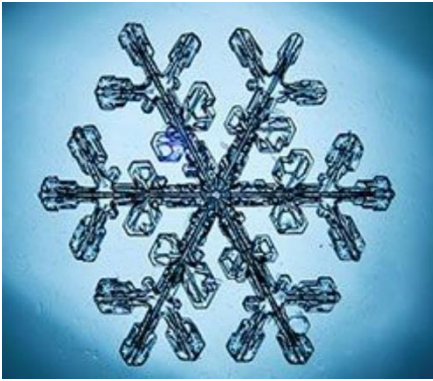
Snowflakes are unique

Part of the enduring appeal of snowflakes is their intricate appearance and near infinite variation, often leading to the assertion that all snowflakes are unique (meaning one of a kind). While this in some sense impossible to test, the number of possibilities of changes in temperature and humidity as the snowflake falls to the ground is limitless. If you look closely at a snowflake you will see countless individual features, all of which could have formed ever so slightly differently in direction or shape owing to the slightest change in the environment in which it formed.

What makes snowflakes white?

While snowflakes appear white as they fall through the sky, or as they accumulate on the ground as snowfall, they are in fact totally clear. The ice is not transparent like a sheet of glass is, but rather is translucent, meaning light passes through but not directly. The many sides of the ice crystals cause diffuse reflection of the whole light spectrum which results in snowflakes appearing to be white in colour.

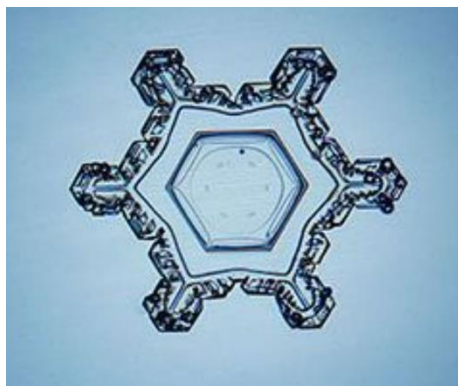
Let's see some real snowflakes up close...



This is called a **Dendrite snowflake** Perhaps the most eye-catching type of snowflake, the name means 'tree-like'.

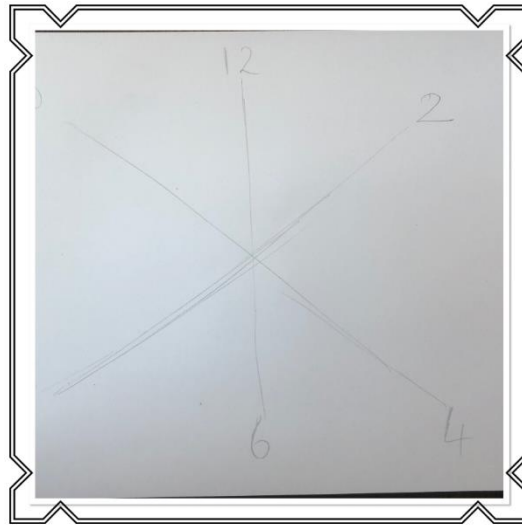


This one is called a **Thin plate**. Plates are essentially part-formed dendrites, they begin to form their intricate patterns but cannot obtain sufficient moisture to form the branches so form a less intricate flat plate. These tend to form at warmer temperatures where there is less moisture in the air



This last one is called a **Sector plate**. It is similar to a thin plate; a sector plate snowflake again lacks moisture but forms a hexagonal structure often with a star-like shape in the center and the more visible attempts to branch.

Now it's your turn! You can either do a huge array of snowflakes or you can concentrate on doing one big one with lots of detail. You can use any medium (material/supplies) that you like i.e. paint, chalk, pen, felt tips, oil pastels, sketch pencils or collage (sticking). Remember each one is individual so you can be as creative as you like. You can also give your snowflake its very own name like the ones above.



Start by creating lines, if you use the hands of a clock it makes it a little easier to work out. Just remember to rub out your numbers! Then decide which medium you are going to use. Below I have used paint, pencil (with sketching techniques), oil pastels or pencil crayons and the last one is with a biro. You can either do one big one or several smaller ones. You can also do all different colours!

I can't wait to see what you create!

