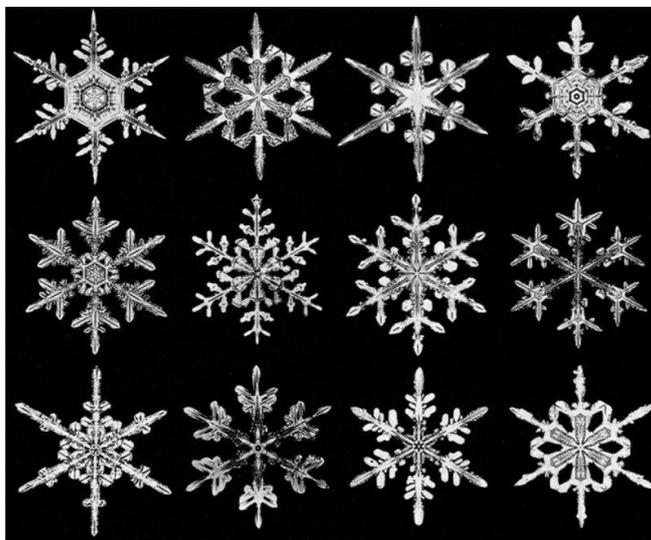


## The mathematics of snowflakes



As the snow begins to fall again this year, take a moment to appreciate the beauty of a fallen snowflake that lands on your coat before it melts. Everyone can marvel at these beautiful crystals and mathematicians find the properties of their shape interesting.

A little-known scientist, Wilson Bentley, also known as “the Snowflake Man” took photographs of snowflakes almost every day and observed them until he died. He perfected a process of catching flakes on black velvet in such a way that their images could be captured before they either melted or sublimated (transition of a solid to a gas) and explained the theory that no two snowflakes are alike.

When we check the pictures above and delve deeper into each snowflake, we can see that the structures of the snowflakes are indeed totally different as Bentley described. However, they have something in common: symmetry and a hexagonal structure.

Snowflakes have both rotational symmetry and reflectional symmetry. All snowflakes are hexagonal, this is because water molecules each contain two hydrogen atoms and one oxygen atom, this is why water is called  $H_2O$ . The most efficient way for the molecules to attach together is in a hexagon shape.

Lower 3 and Lower 4 prepare for a snowflake starter in lessons next week!

Mrs Rebecca Pease