

# THE SCIENCE BEHIND snow & ice

## WHAT ARE SNOWFLAKES?

Snowflakes are beautiful ice crystals formed when water freezes on particles, such as dust and pollen, that are found in the atmosphere. Temperature, moisture and the path each snowflake takes helps shape its unique beauty. Observing elegant water crystals in the form of snowflakes is one of the many wonders you can enjoy in the winter season!

### HEXAGONAL STRUCTURE

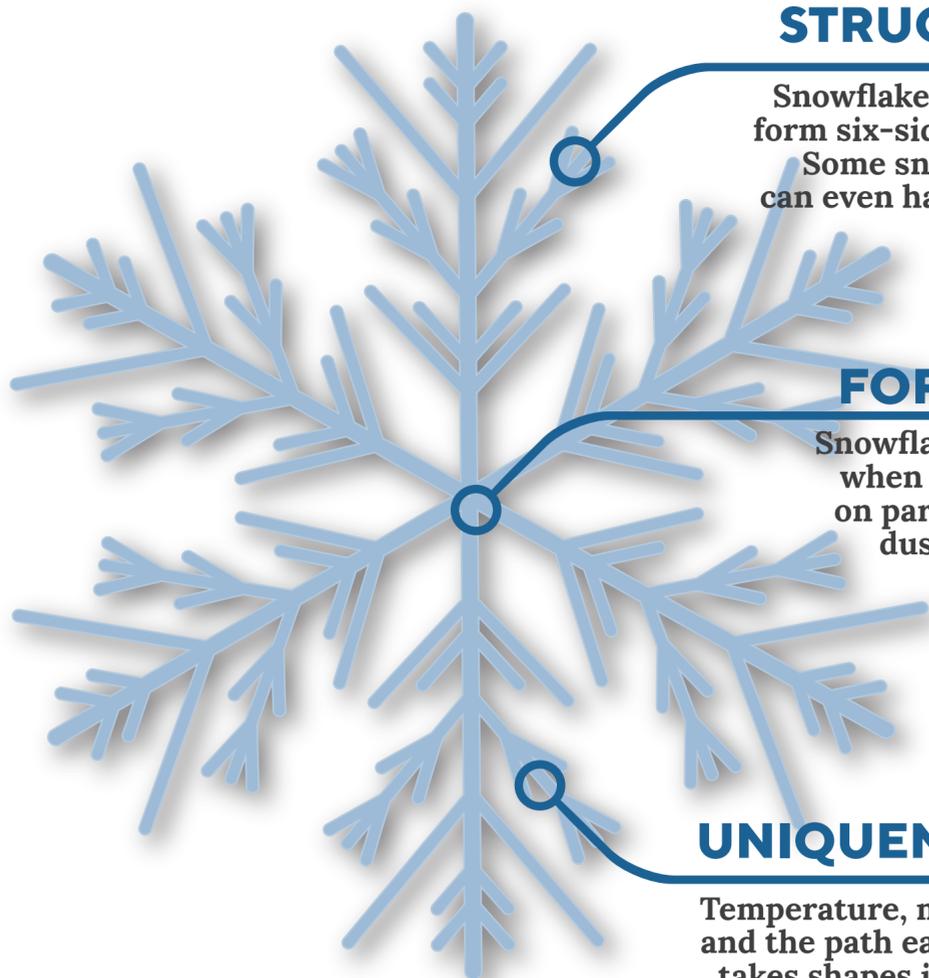
Snowflakes naturally form six-sided crystals. Some snowflakes can even have 12 sides!

### CRYSTAL FORMATION

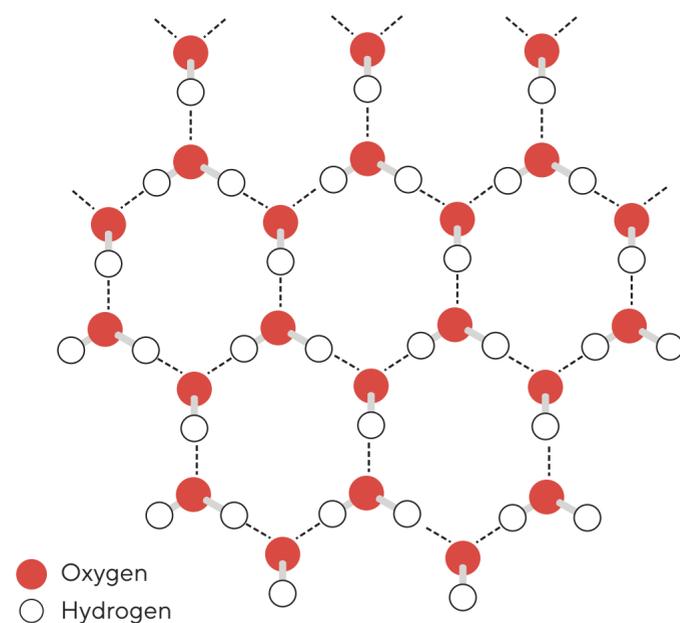
Snowflakes are formed when water freezes on particles, such as dust or pollen.

### UNIQUENESS

Temperature, moisture and the path each flake takes shapes its final beautiful structure.

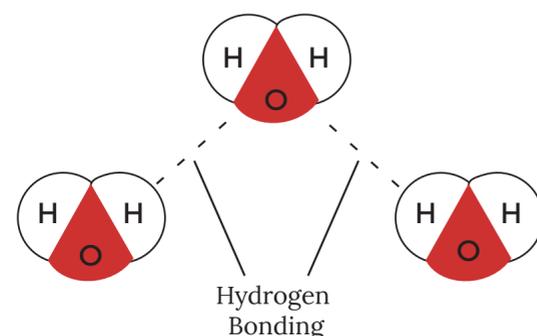


### MOLECULAR STRUCTURE OF ICE



### HYDROGEN BONDING IN WATER

Water molecules form ice crystals, in part, because of their polar nature and hydrogen bonding.



## FASCINATING FACTS ON WATER

- 1 Adding salt to water lowers its freezing point. This is why in snowy climates, salt is applied to roads and sidewalks to make them safer.
- 2 Most compounds are MORE dense in their solid state; however, water in its solid state (ice) is less dense than its liquid state. This unique feature makes life on Earth possible in our oceans, lakes and rivers.
- 3 Frostbite occurs when your skin and tissues freeze from being exposed to freezing temperatures. Your body is, after all, mainly water (approximately 60%).

### THREE OF THE MANY DIFFERENT TYPES OF SNOWFLAKES

