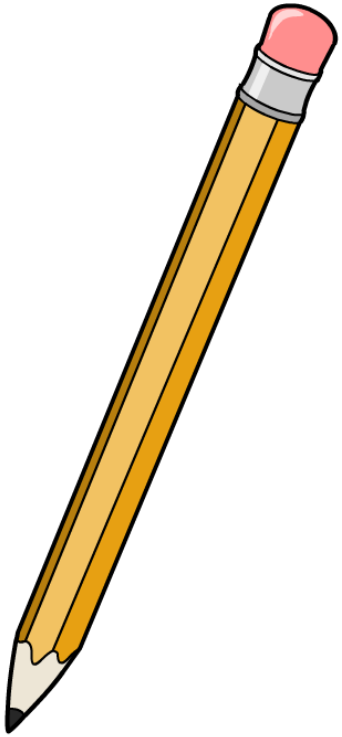
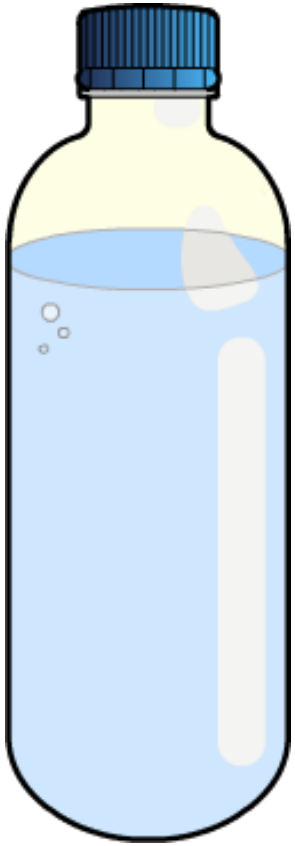
Changes of Matter

What are the three states of matter?

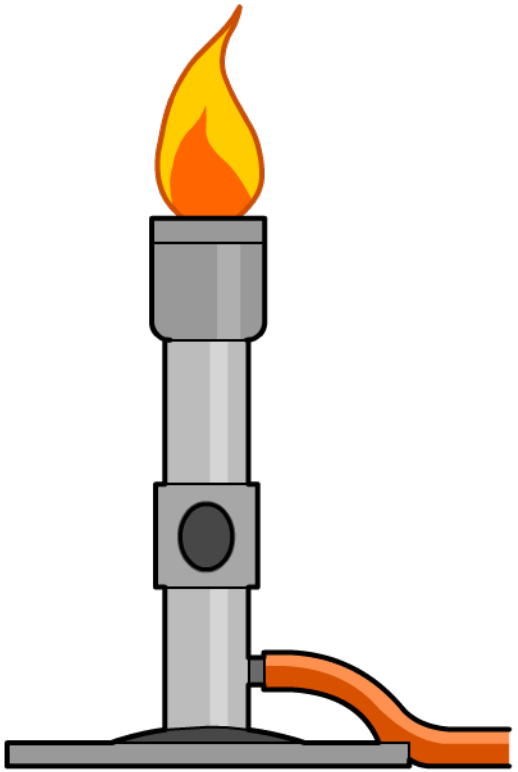
At any given temperature, all substances exist in one of the three states of matter.



solid



liquid



gas

What state is it?

Are these substances solids, liquids or gases?

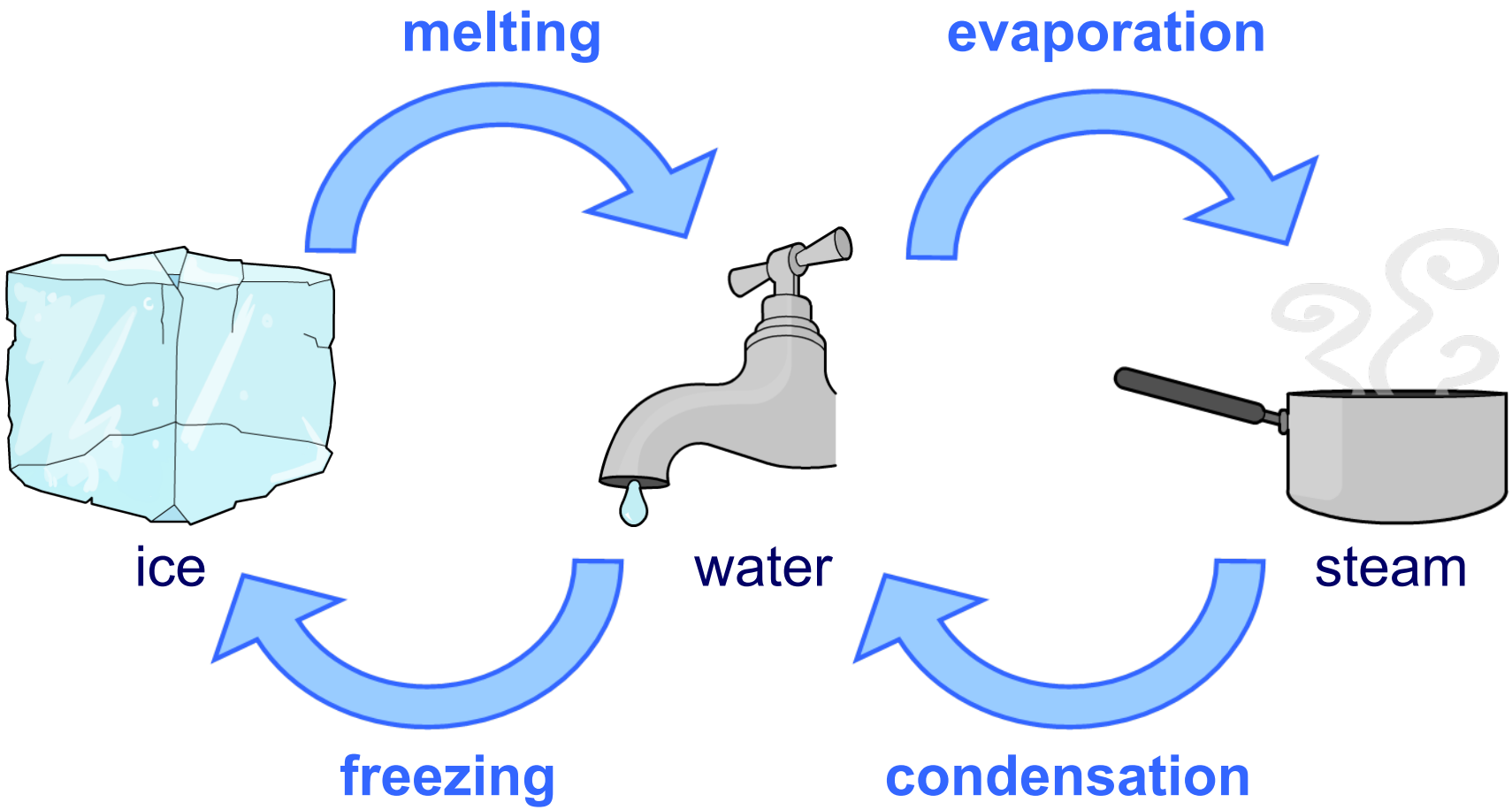
solid	liquid	gas

carbon dioxide

solve

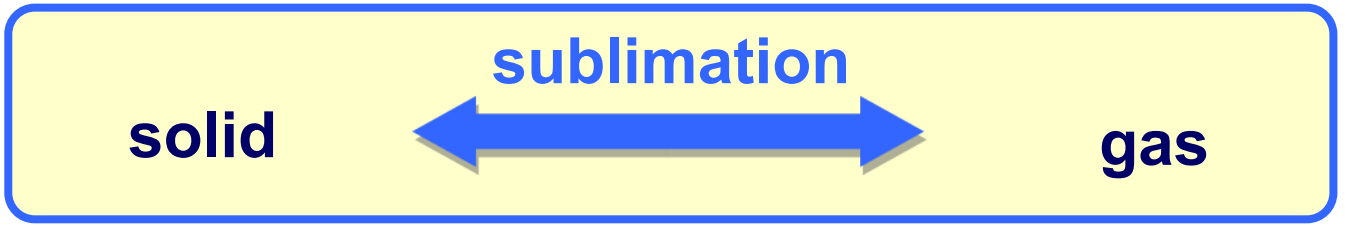
Changes of state

Each change of state has a special name:



Sublimation

Some substances **sublime**. This means that they go straight from solid to gas without passing through the liquid state.

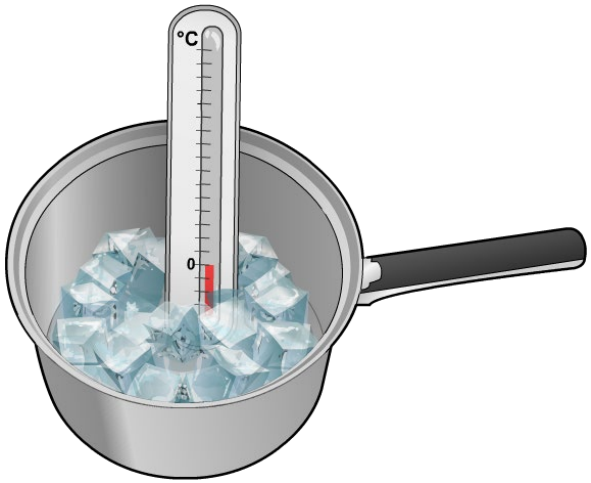


Substances that sublime include:

- iodine
- carbon dioxide (dry ice)
- plug-in air fresheners
- ink in printers and photocopiers
- comets as they approach the Sun.

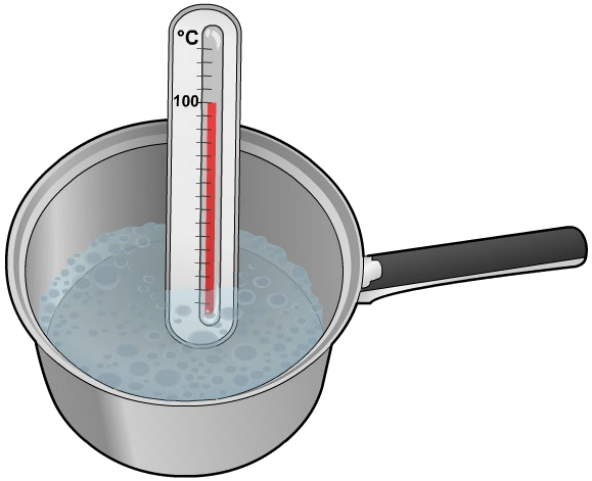
Melting point and boiling point

The temperature at which a substance changes from a solid to a liquid is called its **melting point** (or freezing point).



What is the melting point of pure water?

The temperature at which a substance changes from a liquid to a gas is called its **boiling point**.



What is the boiling point of pure water?

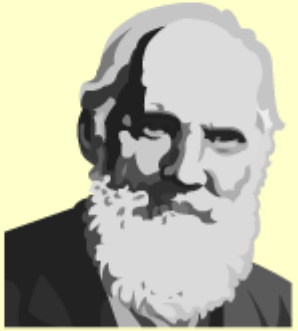
What state is water at 25 °C, 300 °C and 100 °C?

The history of temperature scales

Today, temperature can easily be measured using a thermometer on the Celsius scale, Fahrenheit scale or Kelvin scale, among others.

But who invented these temperature scales, and how?

Click "**start**" to find out.

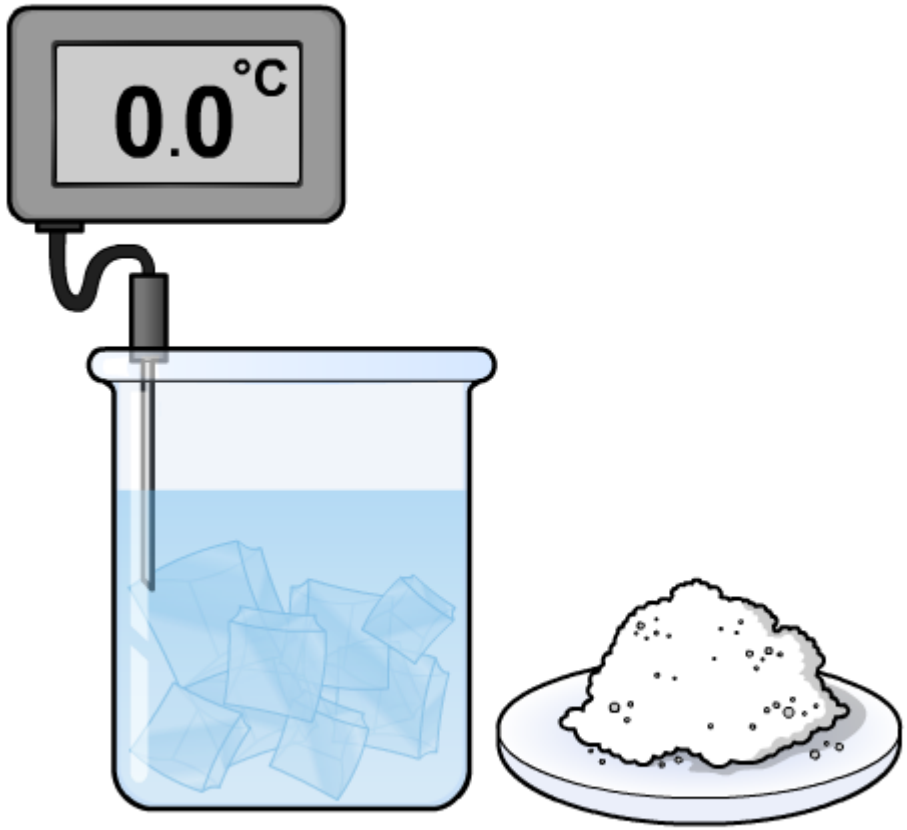


start

What effect does salt have on ice?

Will a beaker of ice water increase or decrease in temperature as salt is added to the solution?

Click "**play**" to find out.



Reducing the freezing point of water

Salt reduces the freezing point of water. This means that the temperature has to be much colder than 0 °C for it to freeze.

Can you explain why people put salt on roads and paths during icy weather?

In what other situations would it be useful to reduce the freezing point of water? How about in making ice cream?