

What is a cloud?

A cloud is a large group of water droplets. Clouds are formed when warm air evaporates into the sky and cools down in the atmosphere. As the warm air cools, the water vapour turns into tiny water droplets or ice crystals. Clouds can contain millions of tons of water. Clouds produce rain, hail, sleet and snow.

Different kinds of clouds

Clouds are just those white fluffy things in the sky, right? The ones that look like a dragon or a whale. Well, no – in fact there are lots of different kinds of clouds.



High clouds

These are usually 6000m (20,000ft) or more above the earth.

Cirrus

In Latin cirrus means a lock of hair and these clouds look wispy, like strands of hair. These clouds are often the whitest in the sky and catch different colours at sunset. They indicate that a change of weather is on the way.

Cirrocumulus

In Latin cirrus means a lock of hair and cumulus means a “heap”. These clouds look like lots of little patches of small white cloudlets. They are made up of ice crystals and sometime look like fish scales. They indicate nice weather. Get outside and do something fun!

Cirrostratus

In Latin cirrus means a lock of hair and stratus means flat. These clouds are almost transparent and can stretch for many miles. Cirrostratus means that rain is on the way.

Mid-height clouds

These are usually between 2000m (6,500 ft) and 6000m (20,000 ft) above the earth.

Alto cumulus

In Latin alto means high and cumulus means a “heap”. They look like mid-level round clumps-called cloudlets. These clouds are made up of ice crystals and water. They indicate settled weather.

Altostratus

In Latin alto means high and stratus means flat. These mid-level clouds are often blue or grey and cover the whole sky. The sun or moon can shine through them. Altostratus means that a change of weather is coming.

Nimbostratus

In Latin nimbus means rain cloud and stratus means flat. The featureless grey clouds cover the whole sky. The sun can’t shine through them, and they bring persistent rain or snow. A day to take an umbrella or stay in bed!

Low clouds

These are usually below 2000m (6,500 ft) above the earth.

Stratocumulus

In Latin stratus means flat and cumulus means a “heap”. They can be bright white to dark grey, usually with gaps between them. They can indicate any kind of weather but usually not rain, even when they are grey.

Stratus

In Latin stratus means flat. These clouds can be very low as fog or mist. They are flat and featureless and can be white to grey. They can often bring drizzle.

Cumulus

In Latin cumulus means a “heap”. Cumulus are little, fluffy clouds that are individual. They are the shape that most people associate with a cloud (and the shape of your My Very Own Cloud!). They are often brightly lit by the sun. You usually see them on sunny days. Get out your sunglasses!

Cumulonimbus

In Latin cumulus means a “heap” and nimbus means rain cloud. These towering, giant clouds are the only clouds that product thunder and lightning. They get taller and taller and have the same energy as 10 atomic bombs. They bring extreme weather such as thunderstorms, torrential rain or hail and tornadoes.

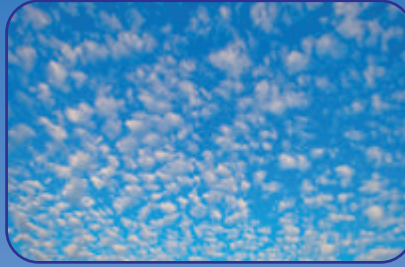
Cirrostratus



Cirrus



Cirrocumulus



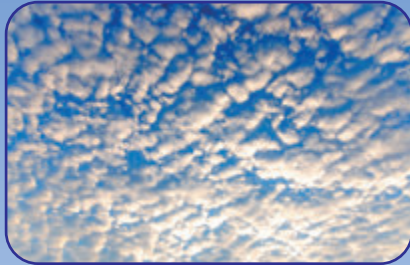
High clouds

Above 6000m (20,000 ft)

Altostratus



Altostratus



Nimbostratus



Mid-height clouds

2000m (6,500 ft) - 6000m (20,000 ft)

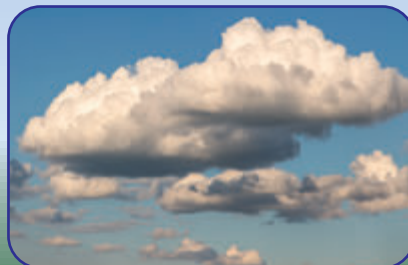
Stratus



Stratocumulus



Cumulus



Cumulonimbus



Low clouds

0 - 2000m (6,500 ft)

Some fun cloud facts

Why is the sky blue and why are clouds white?

Sunlight is white. When it reaches Earth's atmosphere the light is scattered. Blue light is scattered more than the other colours, so this is why the sky seems blue.

In a cloud the sunlight is scattered equally, meaning that the sunlight remains white and clouds appear to be white.

What are fire rainbows?

A fire rainbow occurs when there are cirrus clouds, and it is very cold. When sunlight passes through the ice crystals in the cloud at a certain angle, it splits into all the different colours and shimmers like fire. Fire rainbows are very rare, so if you see one, get out your camera!



Are there clouds in outer space?

The answer is yes! Other planets in our Solar System have clouds.

Venus is covered by clouds of sulphuric acid and has a thick atmosphere of carbon dioxide. These create a greenhouse effect, trapping heat. Venus can reach a scorching 468 °C (847°F).

Mars has clouds that are like those on Earth.

The gas giants Jupiter and Saturn are entirely covered in swirling ammonia clouds.

Saturn's largest moon, Titan, has weather that is most like Earth. There are seasons, with clouds and rain and it has an atmosphere of nitrogen.

Neptune is covered by clouds that speed around the planet carried by strong winds. Wind speeds have been measured at 1930kph (1,200 mph) - the fastest in the solar system!



What does it mean to be on Cloud 9?

If you are on Cloud 9 it means that you are blissfully happy. No one is quite sure where this saying comes from – but who cares? Let's all be on Cloud 9 as often as we can!



What are thunderstorms?

Thunderstorms happen in cumulonimbus clouds. Powerful thunderstorms bring strong winds, rain, hail and even tornadoes. Thunderstorms spread over an area of around 24km (15 miles).

Thunderstorms are caused by particles of ice bumping into each other in a cloud. These build up an electrical charge and this flows between the cloud and the ground in the form of lightning. Lightning heats the air so suddenly that the shock wave from this is the boom we call thunder.

Have you ever counted “1 Mississippi 2 Mississippi” between seeing lightning and hearing thunder? Why do we do this? We see lightning first because light travels faster than sound. It takes about five seconds for the sound of thunder to travel one mile. So, when you count 1 Mississippi (5 seconds) between the lightning and thunder, every Mississippi means the storm is one mile away.

There are about 16 million thunderstorms across the Earth every year and there are about 2,000 thunderstorms happening right now!

Storms can seem scary, but they are one of the planet's greatest spectacles. Next time there is a storm, why not watch from a safe place indoors and enjoy the amazing light and sound show!



What are tornadoes and hurricanes?

A tornado is a deadly combination of wind and power that usually last about 10 minutes. In that short time tornadoes can flip over cars, destroy houses, and lift objects high in the air. A tornado is a rotating column of air stretching from a storm cloud to the ground.

Hurricanes are a swirling mass of high wind, torrential rain, thunder, and even tornadoes. Hurricanes form over tropical and subtropical oceans when warm water, moist air, and strong winds collide and create a rotating mass of thunderstorms and clouds. Hurricanes can cause flooding and landslides.

The "eye" or centre of a hurricane can be 30-65km (20-40 miles) wide and this can be a calm place, where you might even see a sunny sky or a starry night. Hurricanes can be predicted and tracked by weather forecasters, so people living in their path can stay safe.



Clouds in the arts

Clouds have inspired artists across the ages. Famous poets mentioned clouds in their poems.

In his poem Daffodils, Wordsworth
"Wandered lonely as a cloud
that floats on high o'er vales and hills".

In his poem The Cloud, Shelley wrote
"I bring fresh showers for the thirsting flowers,
From the seas and the streams;
I bear light shade for the leaves when laid
In their noonday dreams."

J. M. W. Turner was one of the great masters of oil and watercolour landscape painting. He is commonly known as "the painter of light" for his incredible ability to illustrate the sky.

Van Gogh was an impressionist painter also well known for depicting the sky in his works—his most famous being The Starry Night.

William Wordsworth

