

# Types of Clouds

## What is a Cloud?

A cloud is an accumulation or grouping of small droplets of water and ice crystals suspended in the atmosphere of the earth. They are masses of enormous density and quantity and are, therefore, noticeable to the naked eye.

They play various roles in the climate system, such as being the bright objects in the visible portion of the solar spectrum, reflecting light to space effectively, and thus helping the planet to cool down.

## How Clouds are Formed?

When the air is saturated or filled with water vapor, clouds are created. There is more water vapor in warm air than in cold air. Being formed of humid air, it is cloudy. When the moist air is progressively cooled, the water vapor and ice crystals of these clouds become larger and fall on the earth's surface as precipitation in the form of rain, drizzle, snowfall, sleet, or hail.

## Types of Clouds

There are several Types of Clouds, majorly on the basis of their shape, size, and color,. As the weather cools down and the temperature falls, the ice crystal and water vapor inside the clouds fall on earth as precipitation. The precipitation can be in the form of rain, hail, snowfall, etc. let's take a look at Types of Clouds based on their shape and altitude.

## Types of Clouds based on Shape

On the basis of shape, there are majorly three Types of Clouds, namely- Cirrus, Cumulus, and Stratus..

### Cirrus Clouds:

Cirrus is an atmospheric cloud generally characterized by thin, wispy strands. It derives its name from the Latin word cirrus, which means a ringlet or curling lock of hair.

### Cumulus Clouds:

Cumulus clouds have flat bases and are "puffy", "cotton-like," or "fluffy" in appearance. Their name derives from the Latin cumulo-, meaning heap or pile.

### Stratus Clouds:

Stratus clouds have a uniform foundation of horizontal layers. The word "stratus" is derived from the Latin prefix "strato-", meaning "layer." The term stratus represents flat, hazy, featureless clouds of low altitude varying in colour from dark grey to white.

## Types of Clouds based on Altitude

The clouds are also classified based on their formation at different heights, such as Low Clouds, Middle Clouds, and High Clouds. Each altitude has certain categories of clouds that vary from tropical region, polar region, etc. We have mentioned the classification of clouds and Types of Clouds below.

### Low Clouds

They are situated below 6,500 feet or 2,000 meters. Low clouds are also known as Stratus Clouds. They appear dense, dark, and rainy (or snowy) and can also be cottony white clumps interspersed with blue sky.

Types of Clouds	Description
1. Strato Cumulus	Usually arranged in a large, dark, rounded, or globular mass, usually in groups, lines, or waves.
2. Stratus	Usually looks like a huge grey blanket that hangs low in the sky, resembles fog, comprises a uniform layer, and appears dull; if these clouds are warm, it means rain, and if it is cold, it snows.
3. Nimbostratus	They are known as 'Rain Clouds', and they are dark, thick, and accompanied by light to moderately falling precipitation.

### Middle Clouds:

They develop between 6,500 feet and cirrus level or from 2000 to 6000 meters. They are known as "Alto" clouds, and they frequently indicate an approaching storm. They may sometimes produce Virga, which is a type of rain or snow that does not reach the ground.

Types of Clouds	Description
1. Altostratus	These clouds are coloured grey or blue-grey in the form of a constant sheet or veil. They consist of ice crystals and droplets of water. The sun can still be seen in its thinner fields as a round, dim disc. These clouds can often form with constant rain or snow in front of storms.
2. Altocumulus	They are greyish sheet clouds characterized in layers or patches by globular masses or rolls, the individual components being bigger and darker than those of cirrocumulus and lower than those of stratocumulus.

## High Clouds:

They are situated above 6000 meters or 20,000 feet. They are widely known as Cirrus Clouds and have a thin structure, and are made up of ice. They do not produce rain and hence indicate fair weather.

Types of Clouds	Description
1. Cirrus	They are thin cirrus clouds that are often wispy. Typically discovered at heights higher than 20,000 feet (6,000 meters), they consist of ice crystals originating from the freezing of supercooled droplets of water.
2. Cirrostratus	They are large, and very thin, consisting of a uniform coating of ice crystals. When the cloud takes the form of thin cirrostratus nebulosus, it is hard to identify and is capable of forming halos.
3. Cirrocumulus	They are tiny rounded, cloud-shaped puffs, generally appearing in lengthy rows elevated in the sky and generally white, but sometimes appearing grey.

## Which Type of Cloud is Responsible for Snowfall or Rainfall?

Clouds with the prefix “nimbo” or the suffix “nimbus” are responsible for bringing snowfall or rainfall. Nimbostratus can bring continuous snowfall or rainfall for a very long duration. On the other hand, Cumulonimbus are known as thunderheads as they are responsible for producing thunderstorms, rain, and lightning.

## Factors Determining Types of Clouds

The different textures, shapes, and other features of the cloud depend on the condition under which they develop or form. There are mainly two factors that decide the Types of Clouds- Surface Temperature, and wind. With the surface heating process is the simplest, where the sun heats the earth and so this warm air expands, rises, and cools forming clouds. Additionally, a sudden change in the wind speed can also play a big role in determining the type of cloud.

## Why do Clouds Appear White in Colour?

The clouds generally appear white because the small droplets of water and ice crystals inside them are densely packed, reflecting most of the sunlight falling on these masses (scattering). The cloud particles disperse all light colors equally, making the viewer perceive all sunlight as white light.

## Why Clouds are Dark in Colour at the Time of Rain?

Due to their particulate density, the clouds appear dark or grey in color at the moment of rain. The water vapor binds together the raindrops, leaving larger spaces in between the drops of water. Due to this, less amount of light is reflected, which emits a darker appearance of the rain clouds.

