# Clouds and the

## Before reading

**1 Match these words (a-e) to the correct definition (1-5).**

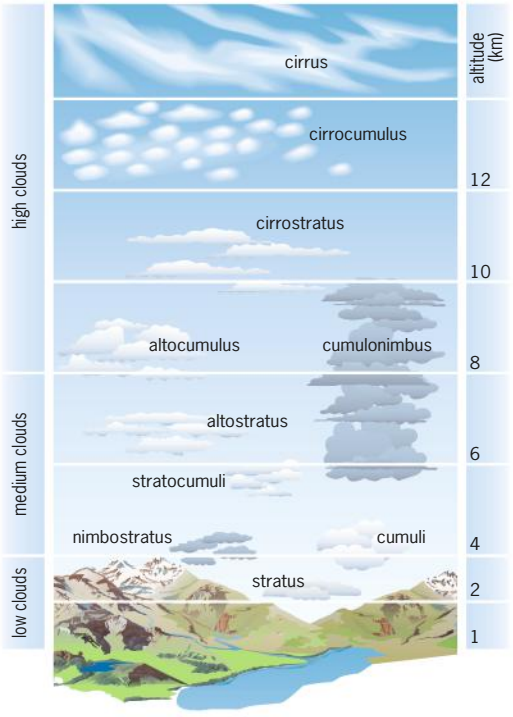
a ☐ dust
b ☐ moisture
c ☐ to condense
d ☐ vapour
e ☐ to heat

1 a small amount of liquid in the air
2 a substance like fog or mist
3 solid particles in the atmosphere
4 to become liquid or solid as fog or a cloud
5 to warm

## How Clouds are Formed?

The sun heats the ground[1]. The warm ground heats the air above it and because this air is warmer, lighter and less dense than the surrounding air, it rises. The rising air looks like a round parcel[2]. As the pressure on the air parcel drops, the parcel expands, increases in size and gets cooler. The air parcel rises so high that the air around it is the same temperature. This is called 'equilibrium temperature'. When the parcel stops rising, clouds are formed. Clouds are made of tiny water droplets[3], that can float[4] in the air, and ice crystals. Clouds form because of condensation and they need three main ingredients:

• **moisture** – the water vapour in the air that builds the cloud;




## Cloud Movement

Clouds move with the wind. The jet stream pushes them. Some cirrus clouds can travel at more than 100 miles per hour.

## Comprehension

**2 Read the texts, then answer the questions.**

1 What are clouds made of?
2 Which ingredients do clouds need to form?
3 When do stratus clouds form?
4 Why are clouds white?
5 What colour are the clouds when there is not much light?
6 How do clouds move?
7 How many layers are there in the Earth's atmosphere?
8 In which sphere is the ozone layer?
9 What can happen in the ionosphere?

**3 Read again the paragraph *Types of Cloud* and complete the table.**

| | means in Latin | height of clouds | looks like |
|---|---|---|---|
|  Cumulus | | | |
|  Stratus | | | |
|  Cirrus | | | |
|  Nimbus | | | |

# Earth's Atmosphere

• **cooling air** – water vapour that condenses when the air temperature decreases;
• **dust and dirt** – provide surfaces that the water molecules can hold on to[5]. When billions of these water droplets come together, they form a visible cloud.

## Types of Cloud

There are many different types of clouds. **Cumulus** clouds are clouds that are piled up[6] on top of each other. Cumulus means 'pile' in Latin. They look like pieces of cotton wool[7] or candyfloss[8] in the sky. Another type of low clouds is called **stratus**, which in Latin is 'spread out' or 'layer'[9]. Stratus clouds mean light rain when the weather is warm and light snow when the weather is cold. Often they look like a huge grey blanket[10] hanging low in the sky. These clouds form when warmer wet air blows in. The warm air condenses into drops of water that make a cloud. High clouds are **cirrus**, which are thin wispy[11] clouds made of ice crystals, not water drops. Cirrus means 'curl of hair' in Latin. They form where it is high enough to freeze the water drops into ice. When you see **nimbus** clouds there will soon be a storm. Nimbus in Latin means a 'rain cloud', 'cloudburst'[12] or 'shower'[13] and this cloud has rain or snow falling out of it. Nimbus clouds are low. Sometimes cloud names are combined. A **cumulonimbus** is a puffy thick cloud dropping rain and causing thunderstorms.

## Why are Clouds White?

Clouds are white because they reflect the light of the sun. Light contains all the colours of the rainbow and when the colours are put together the colour is white. When there are lots of clouds and not much light, the clouds look grey.

## The Earth's Atmosphere

The atmosphere of the Earth is divided into several layers. The first layer is the **troposphere**. This is where all the weather takes place.
The **stratosphere** is above it and this is where the ozone layer[14] is. Above the stratosphere is the **mesosphere** and above that is the **ionosphere** where atoms are ionised. The ionosphere is where aurora takes place.

### Vocabulary

**4 Choose the correct word.**

1 The sun *cools / heats* the ground and the *warm / cold* air rises.
2 The rising air looks like a *round / square* parcel and it *increases / decreases* in size.
3 When the air around the parcel is *a different / the same* temperature, it stops.
4 Clouds are made of *big / tiny* droplets of water.
5 Clouds need *moisture / heat* and then *dust / leaves* for the water molecules to hold on to.
6 When *thousands / billions* of water droplets come together, they form a cloud.

### CLIL Project

**5 Become a sky watcher. Make a chart for a month and watch the sky every day. Write down what clouds you can see and any interesting details about the weather.**

1 Check the online cloud chart (science-edu.larc.nasa.gov/SCOOL/cldchart.html) and over a month write down:
   a the number and the names of different clouds you see;
   b the colour of the sky: deep blue, light blue, milky-white;
   c the weather.
2 Report back to the class with your findings. Did you all record the same information or was it very different?

### Words you need

| | | | |
|---|---|---|---|
| 1. ground | suolo | 8. candyfloss | zucchero filato |
| 2. parcel | pacchetto | 9. layer | strato |
| 3. droplet | gocciolina | 10. blanket | coperta |
| 4. float | librarsi, galleggiare | 11. wispy | a ciuffi |
| 5. hold on to | aggrapparsi a | 12. cloudburst | nubifragio |
| 6. piled up | impilato | 13. shower | acquazzone |
| 7. cotton wool | ovatta | 14. ozone layer | strato di ozono |