

Learning Objective

- Can I explain how clouds form?

Success Criteria

- To explain how clouds form.
- To identify the different types of clouds.
- To observe weather conditions.

Starter



What do you already know about clouds?

1. Clouds are made up of billions of tiny droplets of water.

2. Very high clouds are made of ice crystals as their temperature is so low (-30°C).

3. Clouds reflect the sunlight, which makes them appear white!

4. Some clouds appear to be grey because they are thicker, so sunlight cannot pass through!

5. There are 10 main types of clouds, each one bringing its own type of weather.

6. A cumulus cloud can hold an amount of water equal to the weight of ten elephants!

<https://www.youtube.com/watch?v=q87Ekar3emA>

How Do Clouds Form?



Can you define these key terms?

evaporation

the process when water turns from a liquid to a gas (water vapour).

condensation

the process when water vapour turns into a liquid.

water vapour

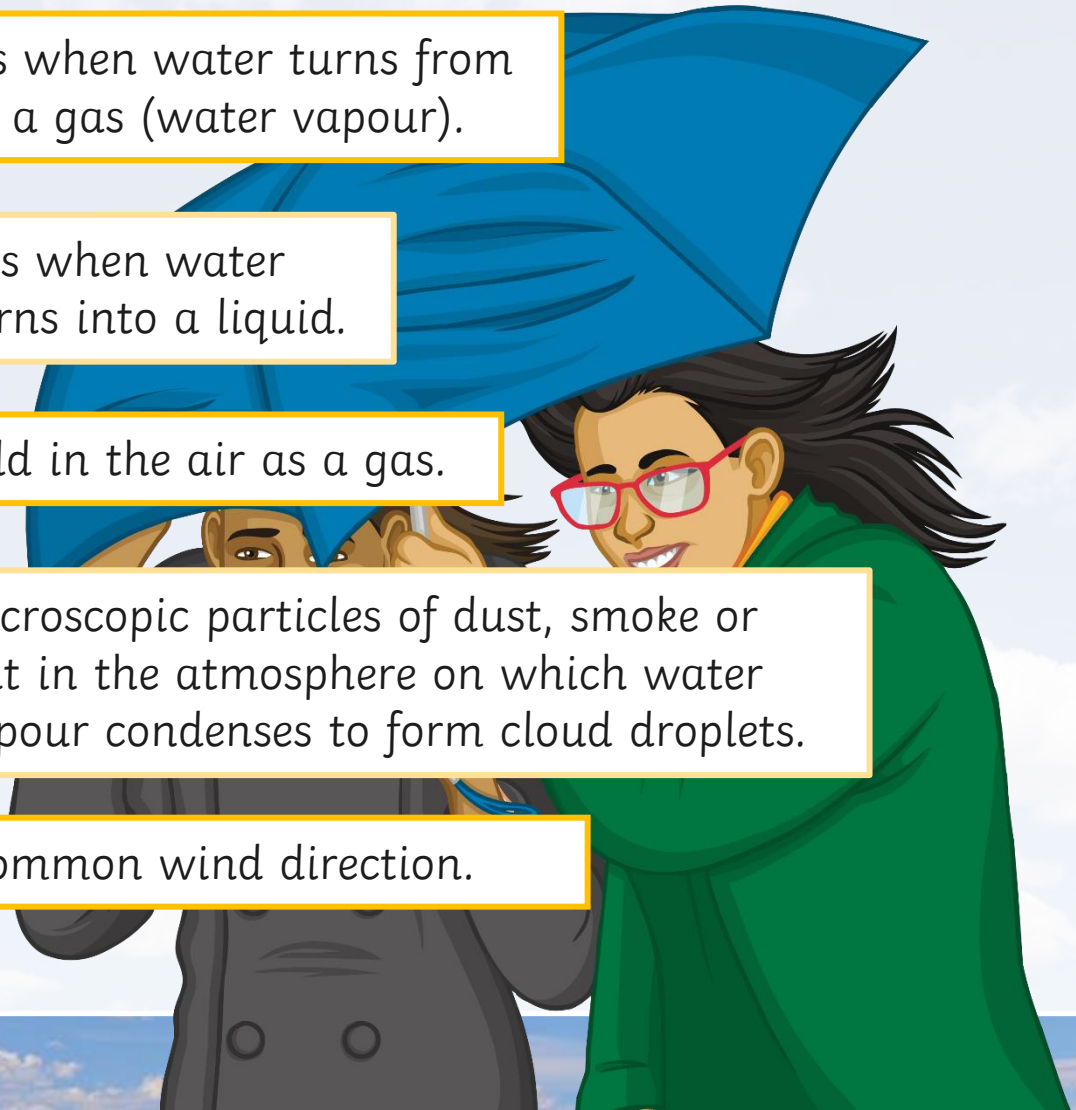
water held in the air as a gas.

condensation nuclei

microscopic particles of dust, smoke or salt in the atmosphere on which water vapour condenses to form cloud droplets.

prevailing wind

most common wind direction.



How Do Clouds Form?



3. Water vapour condenses onto tiny dust particles (called **condensation nuclei**) in the air, forming a **cloud droplet**.



4. Cloud droplets are so tiny, they can stay afloat on air currents. Billions of cloud droplets together form a **cloud**.



2. As the warm air rises, it cools. Cool air can't hold as much water vapour as warm air.



1. Warm air starts to rise upwards. The air contains **water vapour** that has been evaporated from the sea, river, lakes, etc.



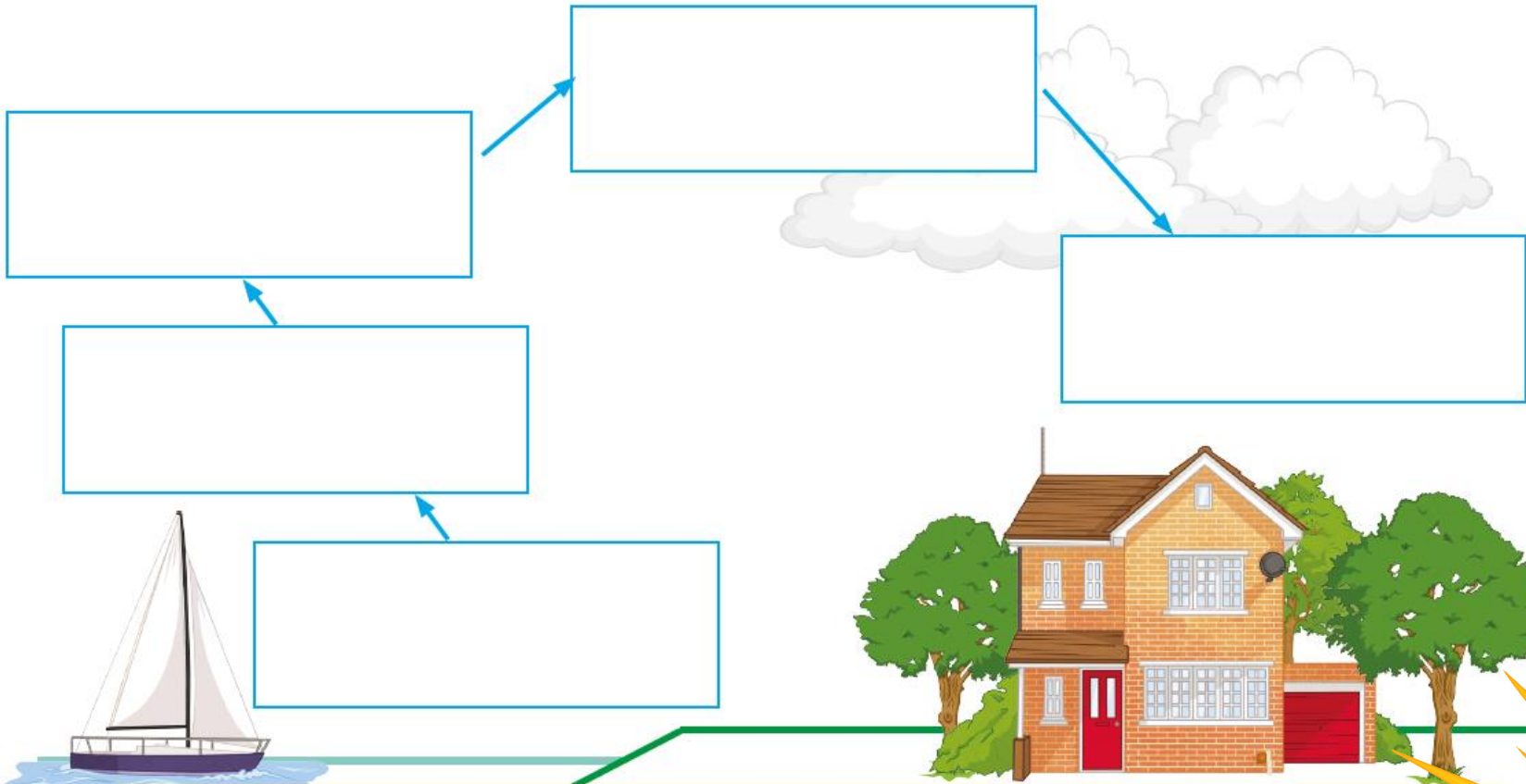
5. If the cloud droplets join up to make larger, heavier droplets (around 2mm), they can fall as **rain**!



Complete the How Do Clouds Form? Activity Sheet



How Do Clouds Form?



Write the correct statement in each box.

- A. Cloud droplets join up to make larger, heavier droplets, which fall as rain!
- B. Warm air containing water vapour rises.

- C. As the warm air rises, it cools.
- D. Water vapour condenses on tiny dust particles in the air forming a cloud droplet.
- E. Billions of cloud droplets together form a cloud.



Types of Cloud



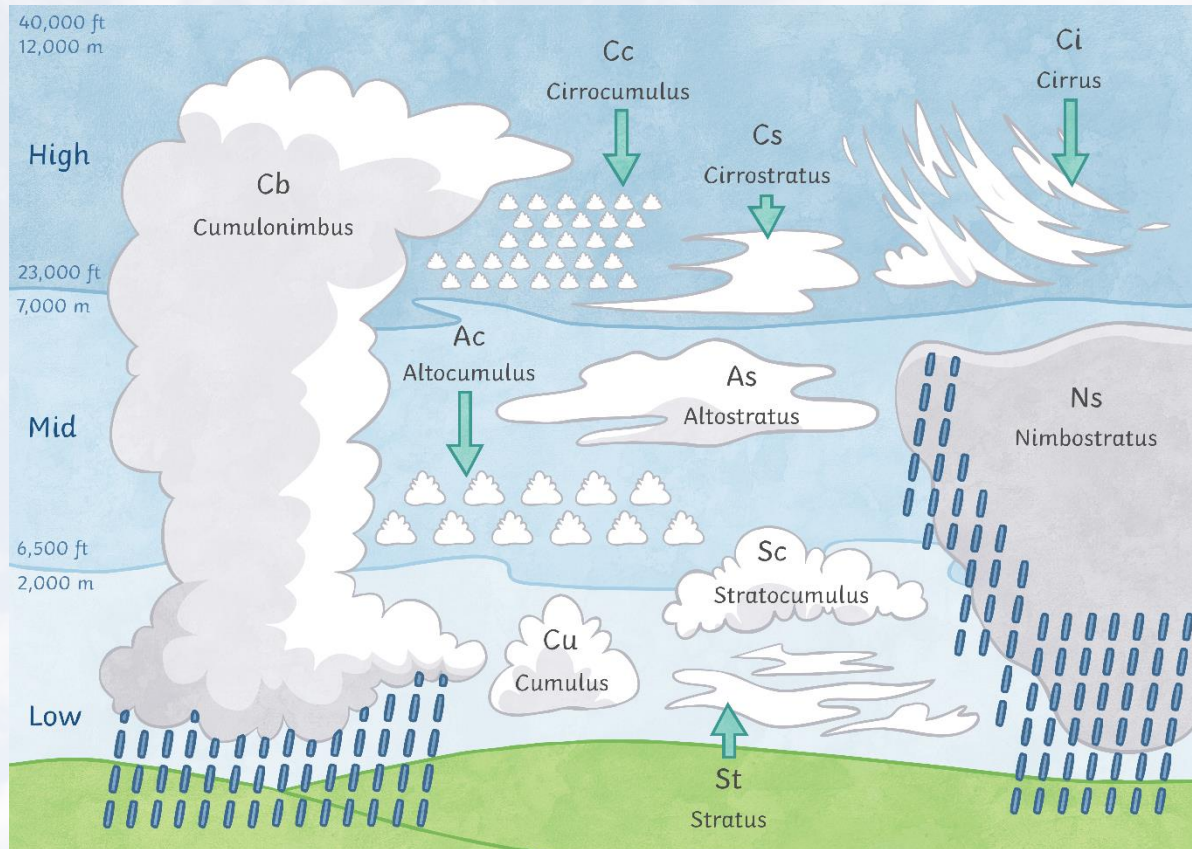
There are three basic types of cloud:

Cirrus clouds are the lightest clouds type of cloud. They are composed of ice crystals and form on sunny days. They are wispy and feathery. **Stratus clouds** are the lowest clouds and form a uniform layer. They are grey and overcast. **Cumulus clouds** are the most common clouds and form in the afternoon. They are puffy and white.



<https://www.youtube.com/watch?v=QWeorIkJ39M>

Types of Clouds



All other clouds are a combination of the names **cirrus**, **stratus** and **cumulus**. For example: Cirrostratus clouds are a high layer of wispy clouds.

NB. **Nimbus** clouds bring rain. **Alto** clouds are mid-level clouds.

Types of Clouds



Cirrus

Cirrocumulus

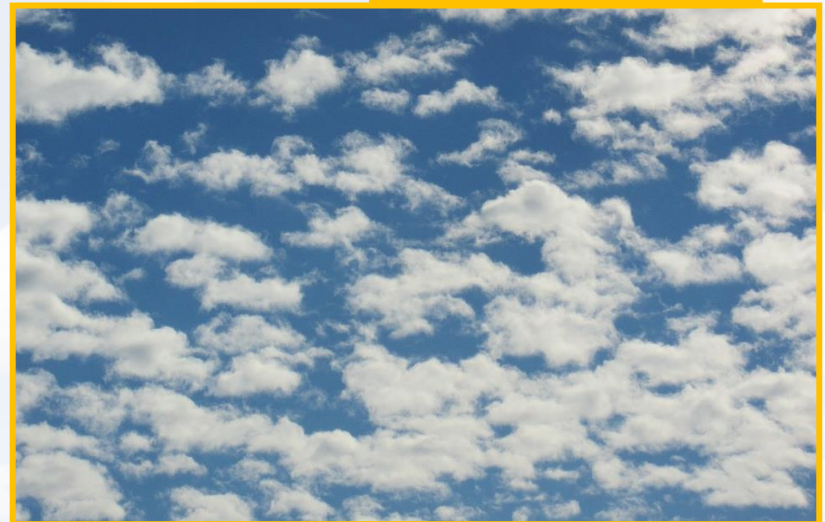


Types of Clouds



Cirrostratus

Altostratus



Types of Clouds



Stratocumulus

Stratus



Types of Clouds



Cumulus

Cumulonimbus



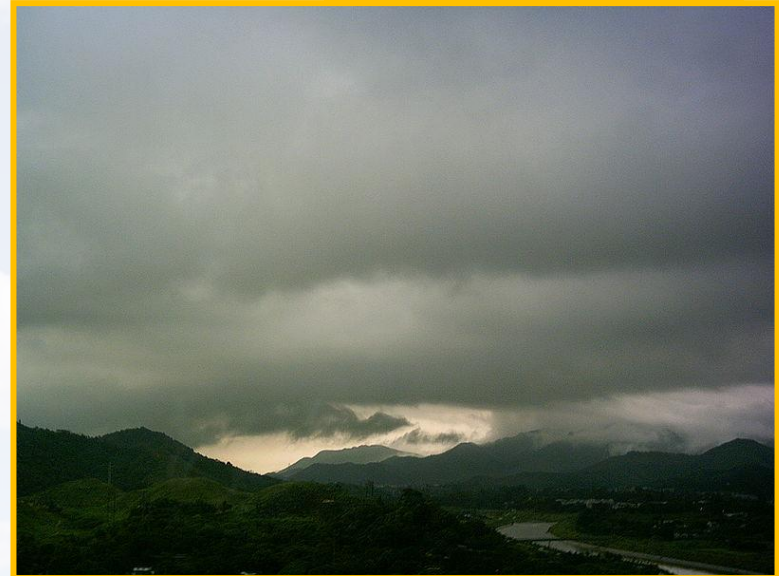
Photo courtesy of [wikimedia commons.org](https://commons.wikimedia.org/)

Types of Clouds



Altostratus

Nimbostratus



Plenary – Crazy Clouds!



Can you name the cloud and explain whether Mrs Jones should hang her washing out or not?



cumulonimbus

