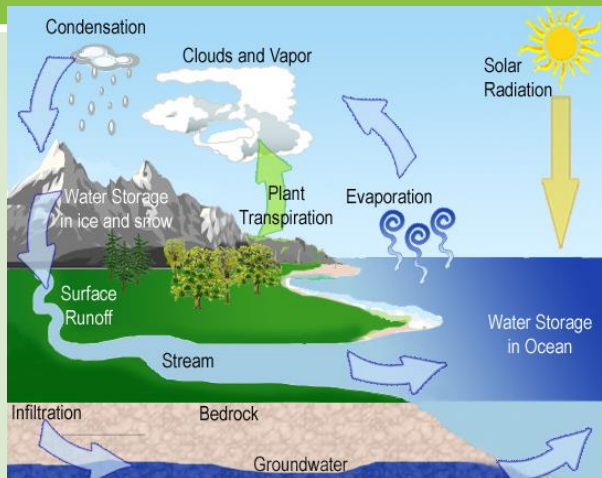


## The difference between weather & Climate

<b>Weather</b>	describes the day-to-day conditions of the atmosphere. Weather can change quickly - one day it can be dry and sunny and the next day it may rain.
<b>Climate</b>	describes average weather conditions over longer periods and over large areas.

## Water Cycle



<b>Evaporation</b>	When the sun heats up water from the sea and it goes into the air
<b>Condensation</b>	When water vapour cools and turns into droplets.
<b>Precipitation</b>	Rain, snow, sleet, or hail that falls to the ground
<b>Transpiration</b>	The process by which moisture is carried through plants from roots and is released to the atmosphere.
<b>Surface Runoff</b>	When water runs off the surface of the ground
<b>Infiltration</b>	The process by which water on the ground surface enters the soil.

## Year 8

# Weather & Climate

## What is Climate Change?

**Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion years.**

## Recent Evidence for climate change.

<b>Global temperature</b>	Average global temperatures have increased by more than <b>0.6°C since 1950.</b>
<b>Ice sheets &amp; glaciers</b>	Many of the world's glaciers and ice sheets are melting. E.g. the Arctic sea ice has declined by <b>10% in 30 years.</b>
<b>Sea Level Change</b>	Average global <b>sea level has risen by 10-20cms</b> in the past 100 years. This is due to the additional water from ice and thermal expansion.


## Enhanced Greenhouse Effect

Recently there has been an increase in **humans burning fossil fuels** for energy. These fuels (gas, coal and oil) emit **greenhouse gases**. This is making the Earth's atmosphere thicker, therefore trapping more solar radiation and causing **less to be reflected**. As a result, the Earth is becoming warmer.

## Evidence of natural change

<b>Orbital Changes</b>	Some argue that climate change is linked to how the Earth orbits the Sun, and the way it wobbles and tilts as it does it.
<b>Sun Spots</b>	Dark spots on the Sun are called Sun spots. They increase the <b>amount of energy Earth receives</b> from the Sun.
<b>Volcanic Eruptions</b>	Volcanoes release large amounts of <b>dust containing gases</b> . These can <b>block sunlight</b> and results in cooler temperatures.

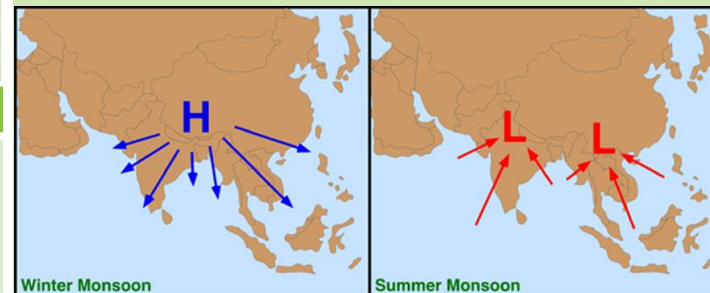
## Managing Climate Change

<b>Carbon Capture</b> This involves new technology designed to reduce climate change.	<b>Planting Trees</b> Planting trees increase the amount of carbon is absorbed from atmosphere.
<b>International Agreements</b> Countries aim to cut emissions by signing international deals and by setting targets.	<b>Renewable Energy</b> Replacing fossil fuels based energy with clean/natural sources of energy. 

## Extreme Climate Systems: Asiatic Monsoon

**This is the name of the great wind system which dominates the Indian climate. It's completely different from wind systems which dominate many other countries in the world.**

This is because the monsoon changes direction at different times of the year, whereas other wind systems tend to always blow in the same direction.



From June to October the monsoon arrives from the southwest. On some mountain ranges facing the sea, rainfall can be very heavy. The coolest, driest time over most of the country is from December to February, then from March to May the climate gets hotter and hotter until the monsoon arrives.

The monsoon rains are really important for farmers – if their crops do not get enough water then they will die, and then there will not be enough food for people to eat. It's also important to people in the cities because it helps provide their drinking water for the rest of the year.