

# 1. Weather, Climate and Biomes

## What is the difference between weather and climate?

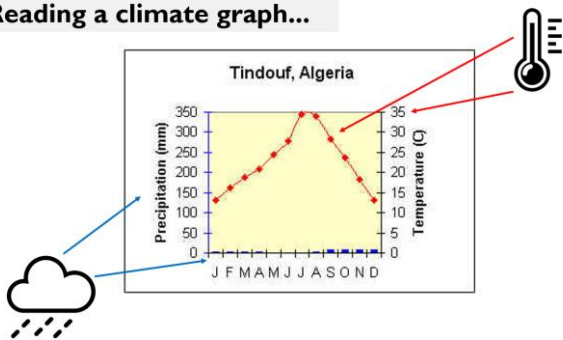


**Weather** is the condition of the atmosphere at a particular place over a short period of time. E.g. temperature, rainfall today.









**Climate** is the condition of the atmosphere in a place over a long period of time... e.g. Spain has a hot climate, England has a wet climate.

### Reading a climate graph...



**Talk like a geographer:**  
Generally, the graph shows...  
Specifically, in August it is...  
Exceptions to this are...

## What are characteristics of different biomes?

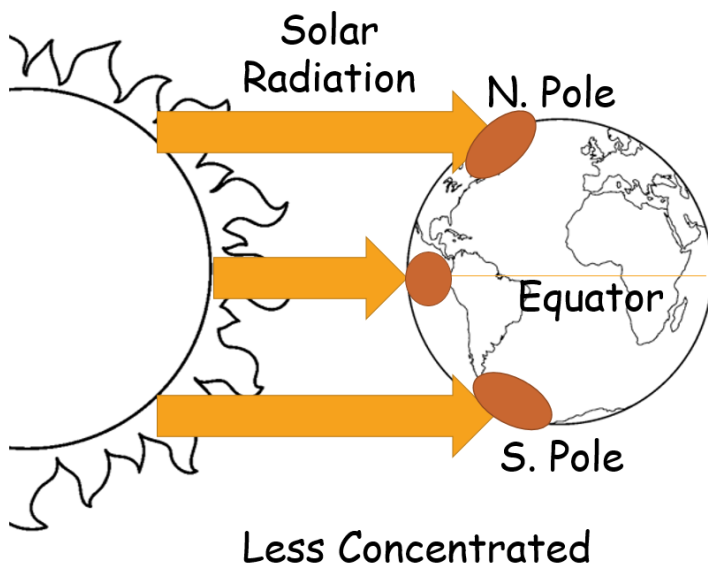
- Rainforest**  Hot and rainy - or very humid. Lots of animals and vegetation. Large biodiversity.
- Tundra**  Very cold - with snow and ice. There is a very small amount of vegetation. Animals have adapted to live in extreme conditions
- Desert**  Very hot with almost no rain! Known as arid. Almost no animals or vegetation.
- Boreal Forest**  Hot summers but cold winters. Rain all-year-round. In the winter, th trees lose their leaves. They are deciduous.
- Taiga**  Warm summers but very cold winters. Rain all-year-round. Trees are 'evergreen' - they have needles instead of leaves and never shed them during winter.
- Grassland**  Fairly hot temperatures. There is little rainfall, but just enough for some grass to grow. There are few trees.

# 2. Hot and Cold



**Solar Radiation** = heat energy from the sun.

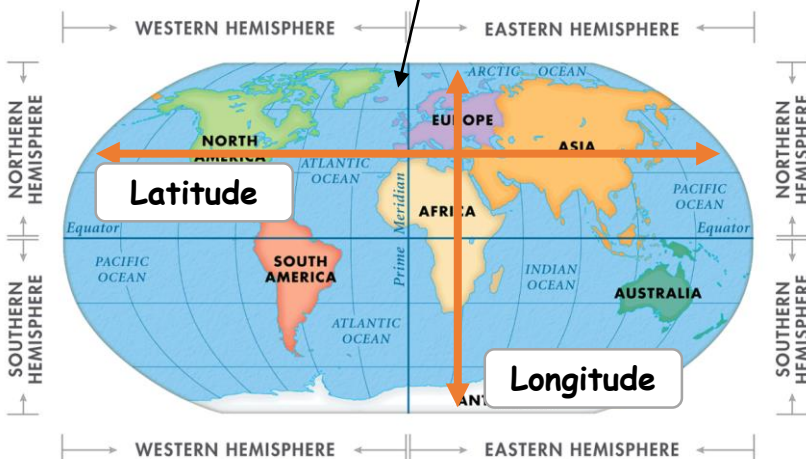
## Why is the Equator hotter than the Poles?



**The rule:**  
The further from the Equator (the higher the latitude), the more solar radiation it gets.

## CONNECT SKILLS: What is longitude and latitude?

Grimsby is 54°N, 0°W



**Talk like a geographer:**

**Lines of Longitude:**  
vertical lines - show how far east or west a place is.

**Lines of Latitude:**  
horizontal lines - show how far north or south a place is.

# 3. Global Warming

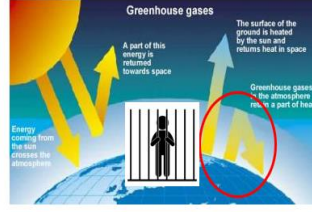
## What is the greenhouse effect?



1. Heat comes from the sun as solar radiation.



2. Some of this solar radiation escapes into space.



3. Some is trapped by 'greenhouse gases' in the Earth's atmosphere.



4. The most well-known greenhouse gases are carbon dioxide or methane.



5. It is like wrapping the Earth in a big blanket.



6. The more greenhouse gases humans release in the atmosphere, the hotter the planet gets.

Write like a geographer:

Consequently,  
As a result,  
Therefore  
This means that...



How are humans causing global warming?

1. **Farming** - cattle and rice production produce methane, a very strong greenhouse gas.
2. **Energy** - burning fossil fuels to produce electricity generates carbon dioxide.
3. **Transport** - flying and driving petrol / diesel cars produces carbon dioxide and nitrous oxide.
4. **Industry** - demand for goods (e.g. TVs, phones) increases use of energy / transport etc.

## What are some of the possible impacts of global warming?



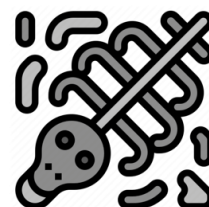
Sea Level Rise



More Frequent Storms



Food and Water Shortages

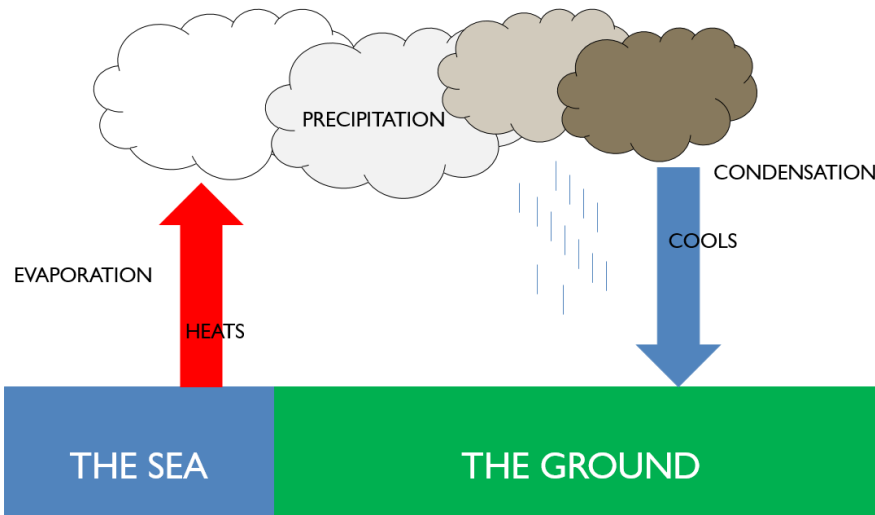


Animal and Plant Extinctions

# 4. Wind and Rain

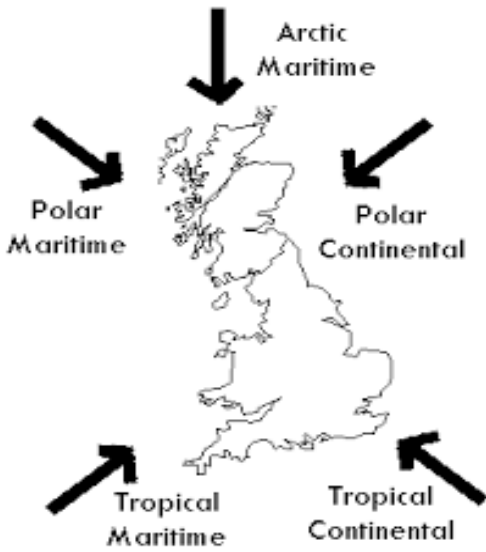
Keyword	Definition
<b>Water Vapour</b>	Water after it has evaporated and become a gas - 'steam'.
<b>Precipitation</b>	Rain, sleet or snow.
<b>Condensation</b>	A gas turning into a liquid.
<b>Evaporation</b>	A liquid turning into a gas.

## What is convectional rainfall?

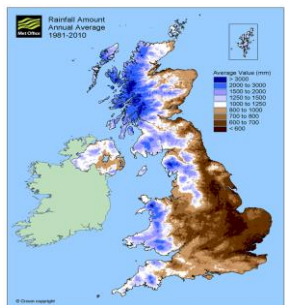


1. When water on the surface heats up it evaporates.
2. As it evaporates, it rises as a gas.
3. It eventually cools, and precipitates - forming clouds.
4. Eventually the water vapour in these clouds condense and it turns back into water droplets.
5. These droplets fall back to the ground in the form of rain.

## How do air masses affect the UK?



**The Golden Rule:** Air moves from an area of high pressure to an area of low pressure. It wants to **spread out**.



- Arctic / Polar = Cold**
- Tropical = Warm**
- Continental = Dry**
- Maritime = Wet**