

Cheat Sheet

Weather and Climate

Learn about the terms associated with weather and climate, and discover resources and search tips for the ongoing discussion on climate change.

Weather versus Climate

Weather

Condition in the atmosphere at a specific place during a specific period of time.

Climate

The pattern of weather at a specific location over a long period of time, usually for 30 years.

Elements of the Weather

Weather Elements

Temperature

how warm or cold something is

Air Pressure

The weight of atmosphere pressing on the Earth's surface

Humidity

Amount of water vapour held in the air

Wind

Movement of air masses

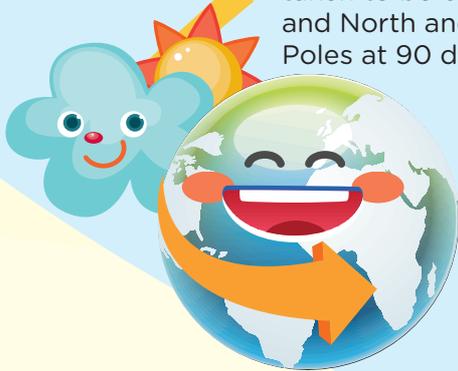
Precipitation

Any water that falls from the sky. This can be in the form of rain, snow or even hail.

Variations in weather and climate

Latitude:

imaginary lines drawn horizontally around the Earth. The equator is taken to be 0 degrees, and North and South Poles at 90 degrees



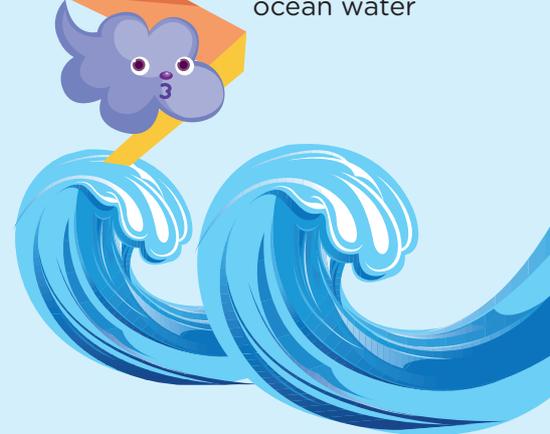
Altitude:

the height of something in the sky



Ocean Currents:

continuous, directed flow of ocean water

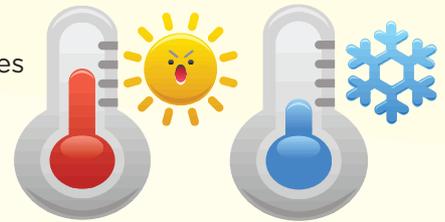


Find out more on what these terms are, and how they affect weather and climate using the resources and search tips at the end!

Types of Climate

The most widely used climate classification system is **Koppen Climate Classification**, which divides the world's climate into different categories based on the profiles at different latitudes. It is based on observable features such as temperature and precipitation.

The Earth can be divided into 5 major climatic zones:



Tropical



Dry



Temperate



Continental



Polar

Climate Change

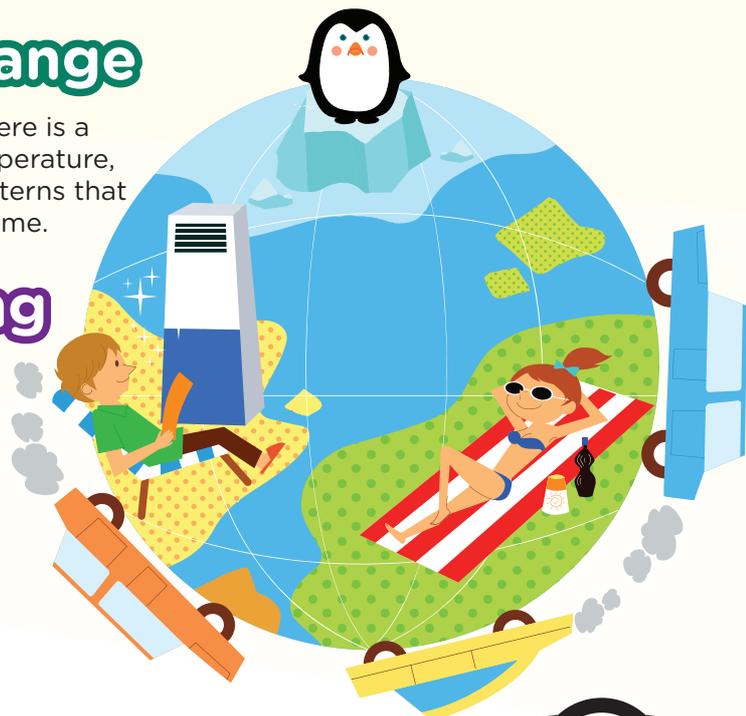
Climate Change: when there is a significant change in temperature, precipitation, or wind patterns that last for a long period of time.

What has been happening recently?

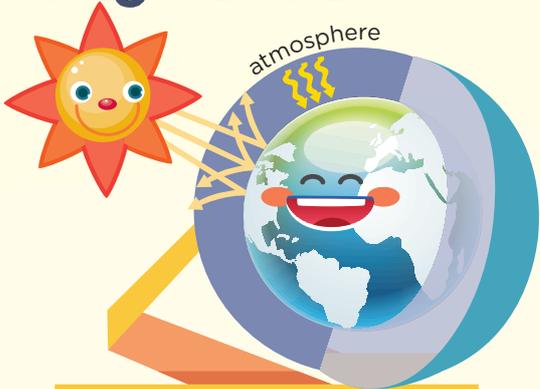
Some clues that indicate that our climate is indeed changing include:

- Rise in sea levels
- Increase in carbon dioxide emissions
- More extreme weather
- Melting glaciers
- Higher temperatures

*Make use of the search tips below to scan through current information on climate changes around the world



Key Terms



Greenhouse effect:

The action of the layer of greenhouse gases in the atmosphere that trap heat close to the Earth and prevent its escape



Global warming:

An increase in the average temperature of the earth's atmosphere



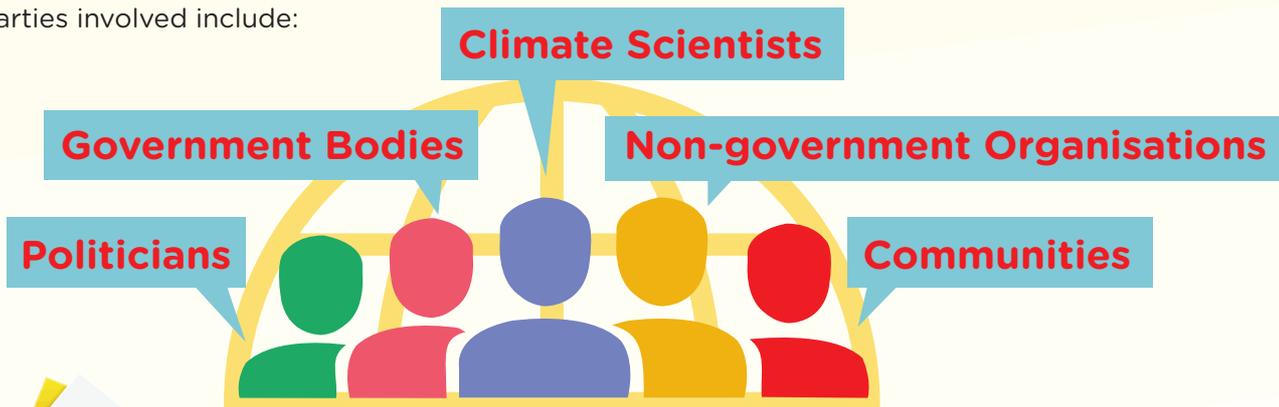
Ozone Layer:

A layer in Earth's upper part of the atmosphere that helps to absorb the sun's ultraviolet rays

The **El Nino** and **La Nina** are also common terms associated with climate and weather changes. They are results of cyclical changes and interactions between ocean and atmosphere in the Pacific Ocean. Find out more on how they affect weather through the resources at the end.

Who is involved?

There is a constant debate on the extent and consequences of climate change. Parties involved include:



Search Tips

With the massive amount of information available on the Internet for the topic of climate change, how do you sieve through the information effectively?

Keywords

You will be more likely to find what you are looking for if you enter keywords that are specific to your search topic.

Be as detailed as possible when keying in your search terms. If you are looking for updated articles of climate change in Asia, entering 'Climate Change Asia 2014' will give you more relevant results than just 'Climate Change'.

Evaluate

You should also be aware of the following when reading articles or viewpoints on climate change. Ask yourself:

- What is the intention of the author?
- Is the information based on factual information or personal opinions?
- Are the topics broad in coverage or only covering one aspect?
- Does the article aim to entertain, persuade, inform or educate?
- Is the source an updated one?

Cross-check

Your information can also be more reliable if you practice cross-checking of online information with:

- Encyclopaedias
- Journals
- Official Reports

*NLB eResources page (eresources.nlb.gov.sg) offers a wide selection of these sources.

As a student, you can also use the recommended resources below to explore more about weather and climate in an interesting and fun manner.

Resources



Scholastic Study Jams	http://studyjams.scholastic.com/studyjams/jams/science/weather-and-climate/weather-and-climate.htm	Through the narration of two boys, this animated video brings users on a journey that introduces the key concepts of weather and climate.
NASA Climate for Kids	http://climatekids.nasa.gov/menu/weather-and-climate/	This website has various interactive and activities that can help students understand weather and climate in an engaging manner. Use Bingo, Picture Scrambles and videos to learn more about changing global climate.
'El Nino', NOAA Education Resources	http://www.education.noaa.gov/Weather_and_Atmosphere/El_Nino.html	This page offers a comprehensive coverage of multimedia resources that explains El Nino and La Nina. They include animations and online modules.
National Geographic Education	http://education.nationalgeographic.com/education/encyclopedia/climate/?ar_a=1	National Geographic offers detailed explanations and images on how different climate zones affect cultures and lifestyles around the world.
Koppen Climate Classification System	http://www.eoearth.org/view/article/162263/	Learn more about the specific characteristics and locations of each climate zone through this website.
Intergovernmental Panel of Climate Change (IPCC)	http://www.ipcc.ch/	The IPCC, as an international body, offers assessment reports covering scientific, technical and socio-economic information on global climate change.

Books in Library

Rowell, R. (2014) *Weather and Climate through infographics*. Minneapolis: Lerner Publications

This book exposes students to different concepts of weather and climate through colourful infographics and bite-sized information.

Watts, F. (2008) *Is our climate changing?* London: Arcturus Publishing Limited

Get in touch with the debate of climate change by considering quotes from experts in the field. Learn about how climate was like in the past, how humans may have affected the climate, and how climate change will impact on people's lifestyles.

The books on weather and climate are mostly in the 551 Call Number series. Browse through the bookshelves for more selections!

Sources

Rowell, R. (2014) *Weather and Climate through infographics*. Minneapolis: Lerner Publications

Watts, F. (2008) *Is our climate changing?* London: Arcturus Publishing Limited

Taylor, B. (2003) *Weather and climate* London: Aladdin Books Ltd