

GRADE 6 GEOGRAPHY

TERM 1

LATITUDE AND LONGITUDE (degrees)

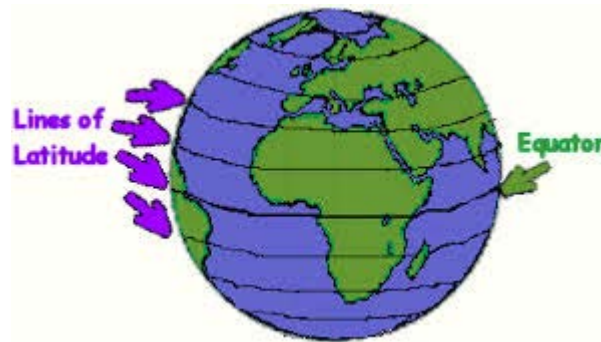
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Lines of Latitude

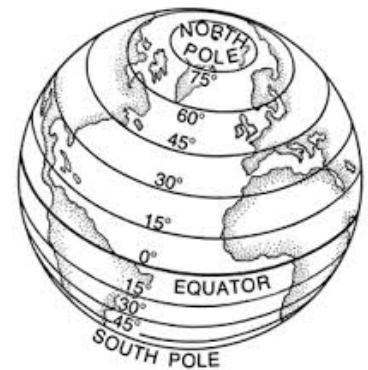
Lines of latitude: These are imaginary lines, on a map, that show the distance, in degrees, measured from the equator to the poles. The lines of latitude run across the map, horizontally.



DID YOU KNOW?

Lines of latitude each show ONE degree. The length between two degrees of latitude is 111km. For example, the distance between 21° latitude and 22° latitude is 111km.

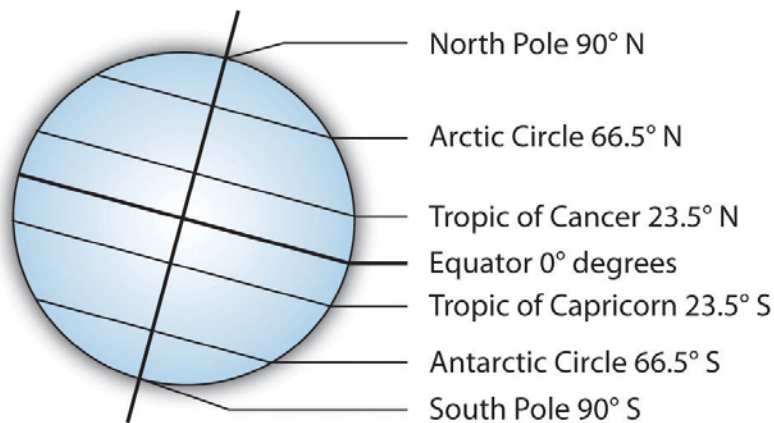
In Grade 5 you learnt that the equator is an imaginary line. This line is not found on the earth. This line can only be found on maps. The equator is a **line of latitude**. It divides the world into two equal parts. The equator line is drawn from west to east (left to right); across the map. If you move north from the equator you will get to the top of the earth. The top of the earth is called the North Pole. If you move south from the equator you will get to the bottom of the earth. This is called the South Pole.



A degree of **latitude** is a measurement of distance over the earth's surface, from north to south. This starts at the equator with zero (0) and ends at the North Pole when you move up towards the South Pole when you move downwards on the map. The symbol for degrees is °. The equator is found at 0° latitude.

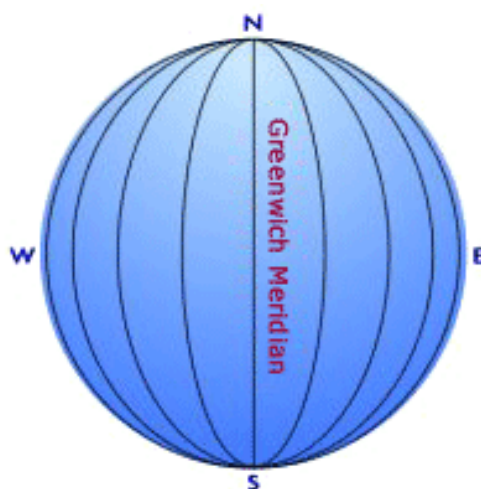
- There are 90° of latitude between the equator and the North Pole.
The North Pole is 90°N (Ninety degrees north of the equator).

- There are 90° of latitude between the equator and the South Pole.
The South Pole is 90°S (Ninety degrees south of the equator).
- There are 23.5° of latitude between the equator and the Tropic of Cancer.
The Tropic of Cancer is 23.5°N (Twenty three and a half degrees north of the equator).
- There are 23.5° of latitude between the equator and the Tropic of Capricorn.
The Tropic of Capricorn is 23.5°S (Twenty three and a half degrees south of the equator).



Lines of Longitude

Lines of longitude are also imaginary lines but they are drawn from top to bottom across the earth, from north to south on a map.



Lines of longitude

There are two lines of longitude that have names. One is the **Greenwich Meridian** which is found at 0° longitude. It is the equivalent of the equator but from top to bottom instead from left to right. At 180° longitude we find the second named line of longitude - the **International Date Line**. Between the Greenwich Meridian and the International Date Line there are 180 degrees of longitude. The International Date Line is not a straight line. The reason is because it does not pass through any land or country, so it has to 'miss' them.



Lines of longitude

The hemispheres of The Earth

The equator divides the earth into two equal halves. The top half is called the Northern **Hemisphere**¹ and the bottom half, the Southern Hemisphere.

The Greenwich Meridian also divides the earth into a left and a right side, or rather into a west side and an east side. The Greenwich Meridian divides the earth into a western hemisphere and an eastern hemisphere.

So the Equator, at 0° latitude, divides the earth into the northern and southern Hemispheres, while Greenwich Meridian, at 0° longitude, divides the earth into the western and the eastern hemispheres.

NEW WORDS

Greenwich Meridian: This is a line of longitude on a map found at 0° and runs north to south from the North Pole to the South Pole.

International Date Line: This is a line of longitude on a map found at 180° and runs north to south from the North Pole to the South Pole.

¹ **Hemisphere** (say: hem-ee-sfeer) - Hemi means half. Sphere means circle or round shape.

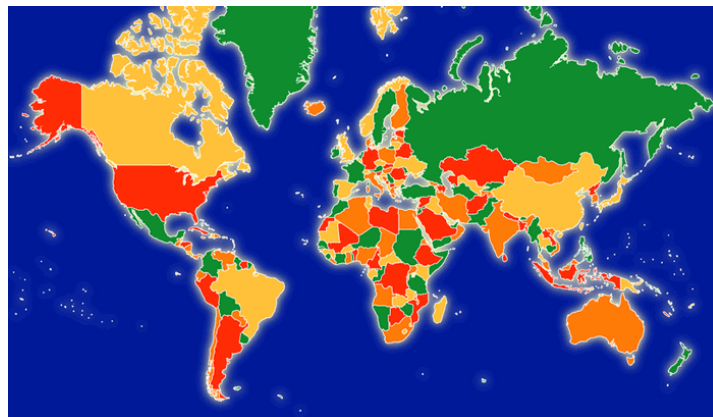
Finding countries and cities on a map using latitude and longitude

We use lines of latitude and longitude to find positions or locations on maps. You have learnt to show positions on a map by using a grid of numbers and letters. Can you remember doing something like this?

A numbers and letters grid

	1	2	3	4	5
A					
B					
C					
D					
E					

A political map of the world



Scale

NEW WORDS

Scale: This is the method used to work out the real distance as it would be on the earth from a map

Small scale and Large scale maps

Drawings of areas of the world are called maps. The **scale** of a map helps the reader work out the real size and distances between places on earth.

Maps can be either small scale or large scale.

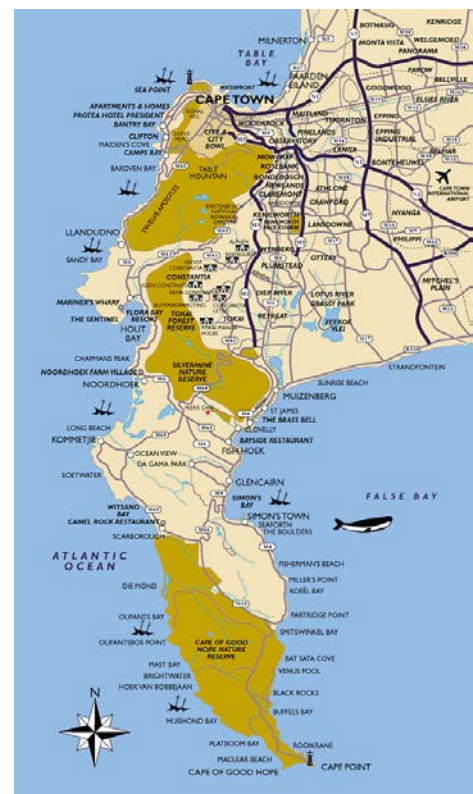
Because the world, in reality, is so large, if we want to show it on a map we have to make the world smaller. That is why we call maps showing the world **small scale maps**. Our homes and schools are a much smaller part of the world. That is why we call maps showing the size of our homes or schools **large scale maps**.

Small scale maps show big areas with few small details. Look at the map of the world, below. It is an example of a small scale map. It shows the entire area the world, but a lot of the details are missing. You are able to see the earth, but the map is too small to see any details such as rivers, towns and roads.



On the small scale map of Cape Town and its surrounding area, the position of Cape Town can be seen, Robben Island although 11km away from the harbour in Cape Town cannot be seen.

The reason why you cannot find Robben Island is because this is a small scale map. Robben Island is too small to be shown on this map.

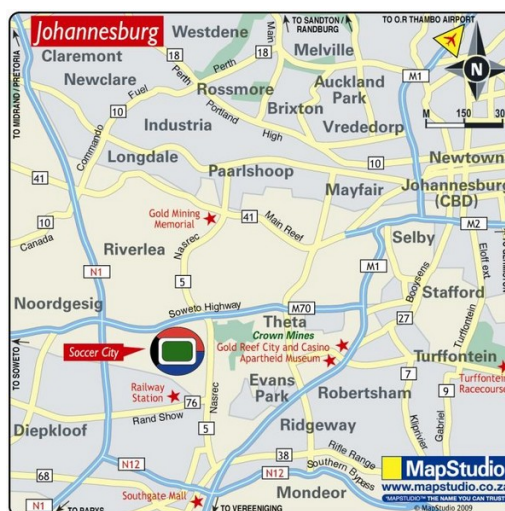


A large scale map shows a small area with more details. On this map of Robben Island we can see lots of details and information. This is called a large scale map even though it is 25 000 times smaller than the real island. The map above, showing the position of Robben Island, is 100 000 times smaller.



Street maps are large scale maps. This is because they have to show much more detail of streets for map users to be able to read them accurately.

A street map



Types of map scales

NEW WORDS

Line scale: This is a line on the bottom of a map that shows measurements in kilometers.

Word scale: Words are used to tell you how to work out distance on the map.

There are three types of map scales. This year you will learn to use the **line scale** and the **word scale**.

Using a line scale on a map is the same as using a ruler to measure distance. The only difference is that line scale measurements are in kilometers (km), while the measurement on a ruler is in centimeters (cm).

A line scale shows the measurement in kilometers. To use a line scale, you have to measure the distance using a ruler. You then have to mark off the distance on the line scale.

Measure a 5cm distance on the line scale. Begin at the 0km mark. The distance on the line scale is 5km. Well done! You can use a line scale.



The **word scale** tells you about link between the measurement in centimeters on the map and the real or true distance in kilometers on the earth's surface.

A word scale is shown in the following way:

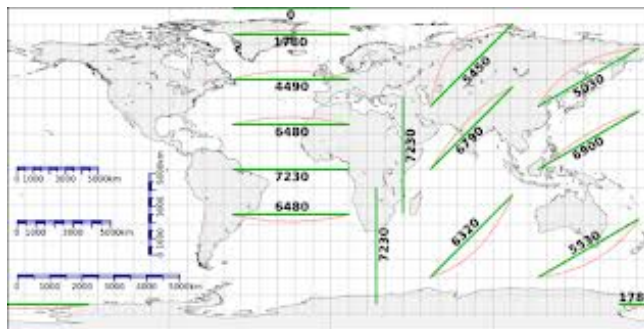
One centimeter represents 3 kilometers. (1cm = 3 km)

Using the word scale above, one centimeter on the map is equal to 3 kilometers on the earth's surface. This is the real distance. You can measure the distance on the map with a ruler and then multiply that number by the 3. This will give you the total distance in kilometers on the earth's surface.

$$6 \text{ cm on map} \times 3\text{km} = 18\text{km}$$

Measuring straight-line distance between places on a map

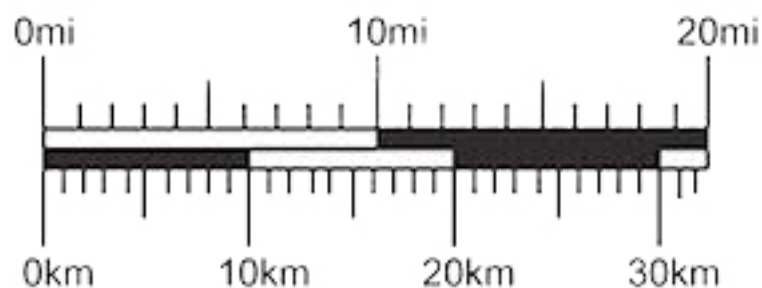
A **straight-line distance** on a map is the distance between two places along a straight line. This distance is measured and then the scale of the map is used to work out the real distance.



We hardly ever travel from place to place in a straight line. This is because there are things in the way such as mountains, rivers, farmlands, towns and cities. We use straight-line distances to give us an idea of the distance.

In order to measure the straight-line distance between two places, you need to put your ruler on the map, placing it to run from one place to the other places. You will use the number of centimeters to work out the straight-line distance in kilometers.

To work out the straight-line distance, you can use a line scale or word scale.



Using line scale to work out straight-line distance

You need to place your ruler on the line scale and count the number of centimeters that you have measured. Now, read off the kilometer reading on the line scale. This will give you the straight-line distance in kilometers.

Kinds of information provided in an atlas

There are many different kinds of maps.

In Grade 5, you should have worked with physical maps, which gave you information about oceans, mountains, rivers, rainfall, temperature, climate and natural vegetation. You should also have worked with political maps, which give you information about countries shapes, boundaries, size and position of capital cities and other towns.

An atlas is a collection of maps. Different types of maps are found in atlases, including physical and political maps.

Other types of maps that you find in atlases are:

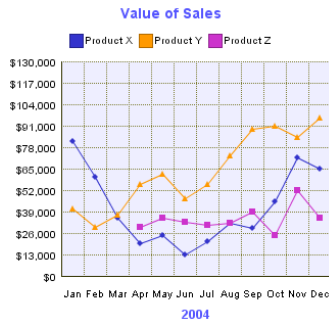
- Star maps and planet maps - show the positions of planets and stars;
- Historical maps - show changes to the land over time, trade, explorers' routes, colonisation and world conflict;
- Economic maps - show information about trade, where minerals are found and food is grown;
- Population maps - show where people live and how they move around the world.

Atlases sometimes give information in ways other than maps. For example:

- bar graphs
- line graphs
- pie charts
- photographs
- tables

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
°C	31	31	31	31	31	31	32	33	33	33	33	32
mm	260	290	310	300	258	120	90	60	80	130	185	220

A table



A line graph



A photograph

Atlases also give information about **current events**. They also provide **global statistics**.

NEW WORDS

Current events: Things that are happening at the moment that is of great interest or importance.

Global statistics: Information that is shown in numbers, about the world.

The Contents Page of an Atlas

The contents page of an atlas tells the user how the atlas is organized, and where information can be found. It shows what types of information is found and which pages it will be.

An atlas is a book with information which has been organised in sections or 'chapters'. Each section will deals with similar kinds of information.

The contents start with information about the whole world and will look at world maps and information. Thereafter, the atlas contains information about each continent or region.

School atlases are made for learners to learn things about maps. For example, they will also explain how maps are made and how the earth was formed by volcanoes and earthquakes.

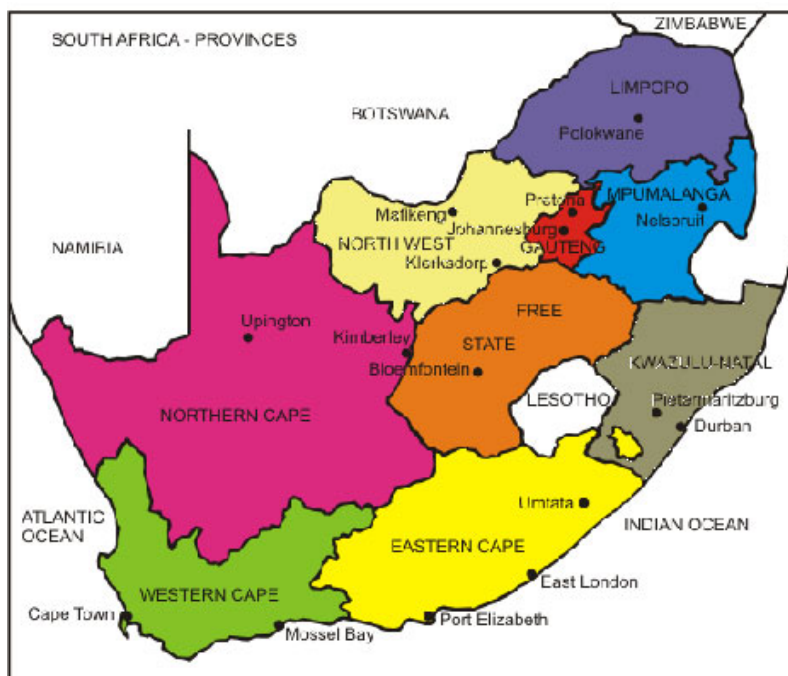
NEW WORDS

Index: This shows the names in an alphabetic list starting at the letter 'a' and ending with letter 'z'.

GPS or Global Positioning Systems: These are very advanced instruments that show a person's position on a map.

At the back of the atlas is the **index**. You can use the index to look up the name of a place or feature. Once you find the name, in the index, it will give the page number where you can find information. It also gives you the latitude and longitude readings of places.

An atlas gives information about provinces



The provinces of South Africa

An atlas gives information about the longest, highest and biggest features of the world

Look at the pictures below of some of the world's greatest natural features. By using an atlas, you can find out where they are. You can also find out where they are. You can also find out a lot more about these features in an atlas.



The Sahara desert



The Amazon River



Mount Everest



Shanghai, China

Places in the newspapers, on maps

Current events are things that are interesting or important and that are happening now. These can be natural events, caused by nature, such as floods, droughts, earthquakes or volcanic explosions. They can also be events caused by people. Events caused by people are things like poverty, spread of disease, mining of minerals and changes of governments. Other happenings of interest are political stories about famous people's actions.

Global statistics is information that is shown in numbers about the world events. It shows information about natural events or information about people, for example, how many people need jobs or houses.

For example, a story about an earthquake is often told using maps to show people where the earthquake happened and how many earthquakes have occurred in the area over the last 100 years.

Newspapers and television news reports give information about many different current events around the world and in South Africa.



In newspapers, you will find the following main sections:

- news from all over the world and news from South Africa
- economic or business news
- entertainment news, which includes television, movies, plays and books
- sport

Bibliography:

Angier, K. Carr, D. Cockburn, J. Wallace, J. **Our World, Our Society**