

## GRADE 5 GEOGRAPHY: TERM 3

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## GRADE 5 GEOGRAPHY

### TERM 3

## Weather

### The elements of weather

Weather is about the temperature, clouds, wind and rainfall. Weather tells us what is happening in the atmosphere around us at any given time. When you walk outside you can see or feel if it is hot or cold, windy or still, rainy or dry. What you are experiencing is called the weather.



We experience weather every day



A Thunderstorm

### Activity 1

Look at the pictures above and answer the following questions:

1. Are there clouds in the sky?
2. Is the wind blowing?
3. Is it raining?
4. Do you think the temperature is hot or cold? Why do you say this?
5. Do you think the season is summer or winter?
6. What is your favourite season?

The weather describes the conditions outside and the weather can change at any time. When you wake up in the morning the weather can be warm and there are no clouds in the sky. Later on, the weather can become cold and rainy.

The weather is also different at different places. You can wake up and the weather can be

warm and sunny. You can drive for an hour or two to another area and the weather can be cold and rainy.

## Precipitation

We have all heard of rain, dew, snow, frost, hail and mist. These, as we know, are all formed from water vapour. They are made in the air and are types of precipitation. Dew and frost are made on the ground and rain, snow and hail fall from the sky.



Photo A



Photo B



Photo C

## Activity 2

Name the type of precipitation shown in each photograph. Write the letter of the photograph and the type of precipitation.

### **DID YOU KNOW:**

When you make a cup of tea the temperature of the water will be 100 degrees Celsius as the water has just boiled. That is why you need to wait for the drink to cool down before drinking so that you do not burn your tongue.



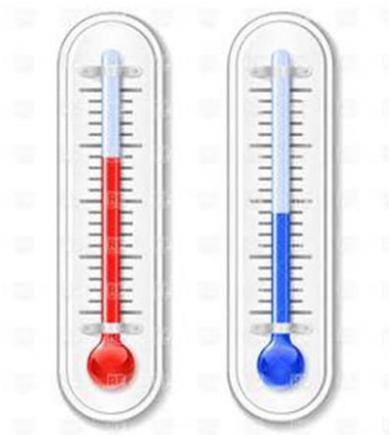
## How temperature and rainfall is measured

### Measuring temperature

We measure temperature with a thermometer. Temperature is measured in degrees Celsius ( $^{\circ}\text{C}$ ). Thermometers have a tube filled with a liquid called alcohol or mercury. These liquids are used because alcohol and mercury does not freeze as easily as water. Water becomes a solid at  $0^{\circ}\text{C}$  but alcohol only freezes at  $-115^{\circ}\text{C}$  and mercury freezes at  $-38^{\circ}\text{C}$ . If water was used in a thermometer, very cold temperatures would not be able to be recorded because the water would freeze and thus block the thermometer. As the temperature in a thermometer gets hotter, the liquid inside the tube of the thermometer expands and moves upwards. When the temperature cools, the liquid contracts and moves down the tube.

### Measuring rainfall –

Rainfall is measured by using an instrument called a rain gauge. The unit of measurement for the rain gauge is millimetres. A rain gauge is a bottle or can that has a funnel-shaped top. The rain that falls will collect in the can. The height of the water is then measured in millimetres.



Examples of thermometers



A rain gauge

### Activity 3:

Look at the picture of the thermometer and the rain gauge that will be provided by your teacher in class and answer the questions.

1. What is the temperature of thermometer A?
2. Is it a warm or a cold temperature?
3. What is the temperature of thermometer B?
4. Is it a warm or a cold temperature?

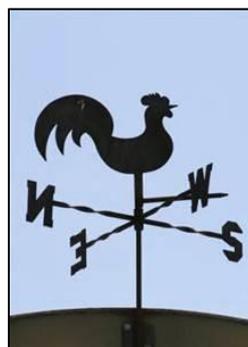
5. How much rainfall is shown in the rain gauge?
6. Do you think this is a light or a heavy rainfall?
7. What do you think is the temperature outside today?
8. When you get home today remember to watch the weather report on the news and record the weather for tomorrow.

### **Direction of the wind**

In Term 1 you learnt about the eight compass points of direction namely north, south, east, west, north east, north west, south east and south west. We use these names to describe which way the wind is coming from. For example, the name of a wind could be a southerly wind. This means that the wind is coming from the south. One instrument used to show the direction in which the wind is moving is called the wind sock. The sock blows away from the wind. Another instrument, called the weather vane, is also used to show the direction of the wind.



A wind sock



A weather vane

### **Weather maps in newspapers and on television**

In Grade 4, you learnt that a key appears on most maps. Each symbol on the key has words next to it which tell you what you are looking at. Weather maps are maps which show you what the expected weather is. Weather maps use easy to understand symbols to show the weather for the day so that most people can understand this type of weather map.

The symbols on a weather map show the following:

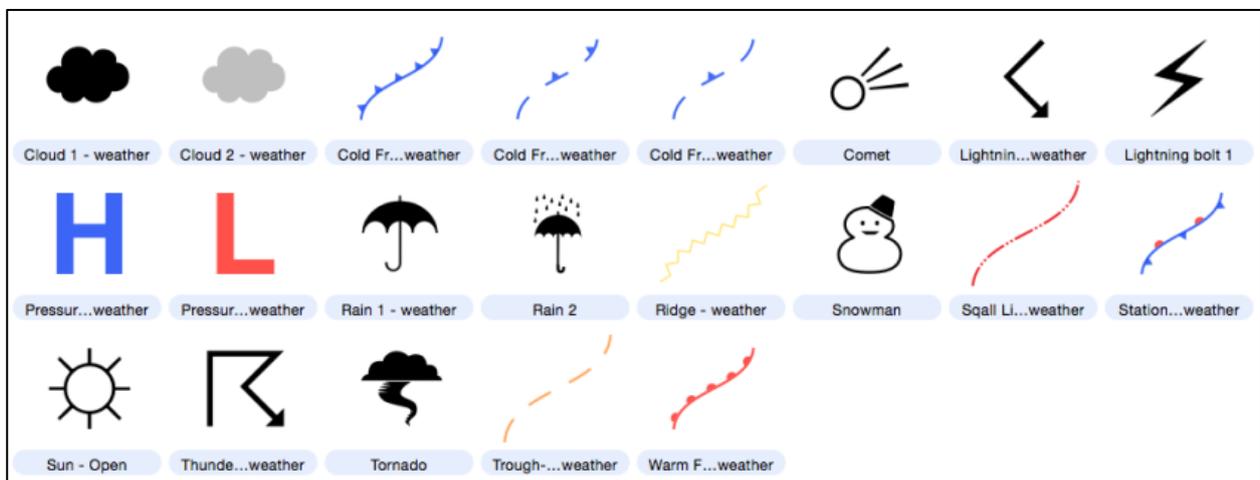
- Cloudy: a picture of clouds
- Sunny: a picture of the sun
- Temperature: is written in degrees Celsius
- Rain: a picture of rain falling from the clouds, or a jagged flash of lightning if it is a storm

Wind direction: it is shown by an arrow pointing in the direction the wind is blowing. The speed of the wind is written inside the arrow.

If we want to find out about the weather every day we can do so by looking at the weather reports in the newspapers or by watching the weather report on television. These reports make use of weather maps which can be understood by everyone.



A weather map



Some weather symbols

### Activity 4

1. In your workbook, write down what the weather is like today.
2. Draw a picture (symbol) for each weather element you have written down.

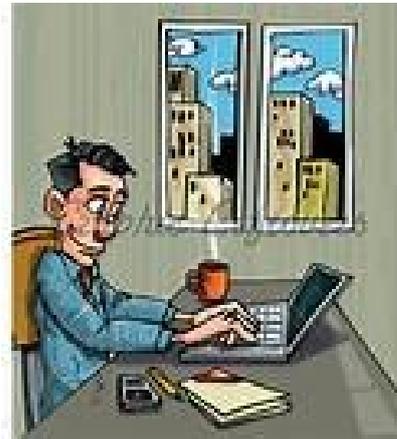
## How weather affects the daily lives of people

Most people are affected by the weather. For some people, the weather can affect their outdoor activities or what they will wear for the day. For others, the weather affects the way they live and earn an income. For example, a farmer needs rainfall and the correct temperature so that crops can grow. Fishermen make a living from catching fish but if the seas are rough due to bad weather, their lives can be endangered. Droughts can cause food to become scarce and expensive. This is because crops cannot grow and animals die from water shortage. Stormy weather that causes floods affects people in a number of ways: Roads and railways are washed away, food sources are destroyed, drinking water is affected and buildings are damaged.

### Activity 5

Look at the pictures of the farmer and the office worker and answer the questions below:

1. How will too little rainfall affect the farming family?
2. Will the office worker be affected by the rain?
3. Can the farmer control the temperature outside?
4. How do you think the wind and temperature is controlled in the office?



### Recording weather information

You are going to observe and record the daily **weather** for one week. You will use the information below to help you.

**Temperature** – Temperature is recorded using a thermometer. Ordinary people describe the weather using the words ‘hot’, ‘warm’, ‘cold’, ‘cool’ and ‘mild’.

Place a tick in the correct box for each day of the week for temperature, cloud cover, rainfall and wind strength.

Temperature in °C	Temperature in words	Monday	Tuesday	Wednesday	Thursday	Friday
Above 30°C	Hot					
Above 20°C	Warm					
Above 15°C	Cool					
Below 15°C	Cold					

**Cloud cover** – When we talk cloud cover we mean how much of the sky is filled with clouds. The terms we can use are ‘cloudy’, ‘partly cloudy’ and ‘clear’. Please remember never to look directly into the sun when you look up at the clouds as this can damage your eyes permanently.

Cloud Cover	Description	Monday	Tuesday	Wednesday	Thursday	Friday
Cloudy	Lots of clouds in the sky					
Partly cloudy	Few clouds in the sky					
Clear	No clouds in the sky					

**Rainfall** – Rainfall is measured using a rain gauge. We are going to use the words ‘lots’, ‘little’ and ‘none or dry’.

Rainfall in words	Rainfall in mm	Monday	Tuesday	Wednesday	Thursday	Friday
Lot	Above 0mm					
Little	Below 1mm					
None or dry	0mm					

**The strength of the wind** – To describe how strong the wind is blowing we will use the words ‘no wind’, ‘light wind’, ‘strong wind’ or ‘storm wind’.

Wind speed	Wind description	Monday	Tuesday	Wednesday	Thursday	Friday
None or calm	Hardly moves					
Light	Little movement					
Strong	Almost straight					
Storm	A lot of movement					

### **Find a pattern in the weather information you collect**

Sometimes, when weather is recorded, it is easy to see a pattern. For example, in summer on the Highveld, after a very hot day, there could be a thunderstorm or, in summer on the West Coast, there will be no rain if a south east wind is blowing. When things happen in the same way it is called a weather pattern.

### **How the weather affects the daily lives of people around you**

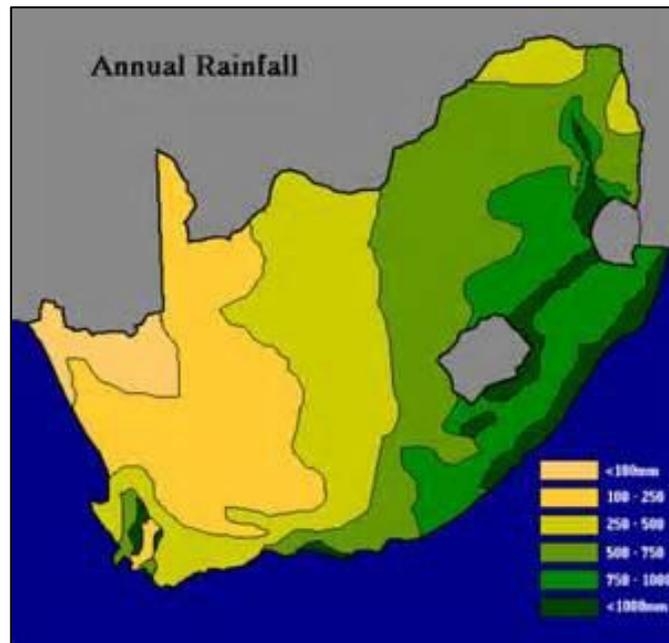
People’s daily lives are affected when the weather changes a lot. Have you ever gone to school and it started raining and you didn’t have an umbrella? People are always talking about the weather because it affects the way you dress and what activities you do for the day. The weather affects our daily lives.

## **Rainfall**

### **Where rain falls in South Africa**

Water vapour evaporates from the rivers, lakes and seas and forms clouds that rain onto the land. You will remember that rivers flow from the mountains to the sea. There are more rivers on the east side of South Africa because that is where more rainfall occurs. The temperature of the ocean, how far places are from the sea, mountain ranges and wind direction all affect rainfall. They affect how much it rains and where it rains. Look at the

**rainfall distribution** map for South Africa below. It shows the **annual rainfall** of different areas.



### Activity 6

You will be given a copy of a rainfall distribution map.

1. Fill in the warm Indian Ocean and the cold Atlantic Ocean on the map.
2. Is more rainfall found along the east coast or on the west coast?
3. Place a green dot to show the position of your home on the map.
4. Does your area get more rain in summer or winter?

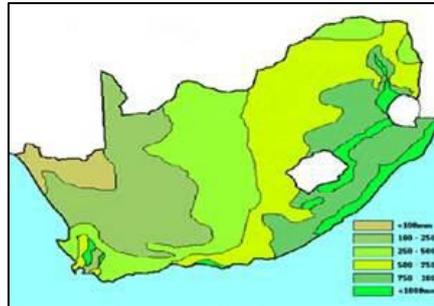
### Rainfall patterns in South Africa

Rainfall patterns show us how much rain falls over South Africa and when. The winter rainfall areas are the Western Cape and the southern part of the Northern Cape as well as a small part of the Eastern Cape coast. The summer rainfall areas are KwaZulu-Natal, Gauteng, Limpopo, Eastern Cape, Free State, Mpumalanga, North West and the Northern part of the Northern Cape.

### Summer Rainfall in South Africa

Summer rainfall areas are found in the east and the central parts of South Africa. The east wind blows from the warm Indian Ocean. This wind brings lots of moisture and clouds into South Africa. The coast and the high mountains of the escarpment get over 1000mm of rainfall every year. The areas further inland get less rainfall. As you go further away from the Indian Ocean the rainfall gets lower. The Atlantic Ocean water is not as warm as the

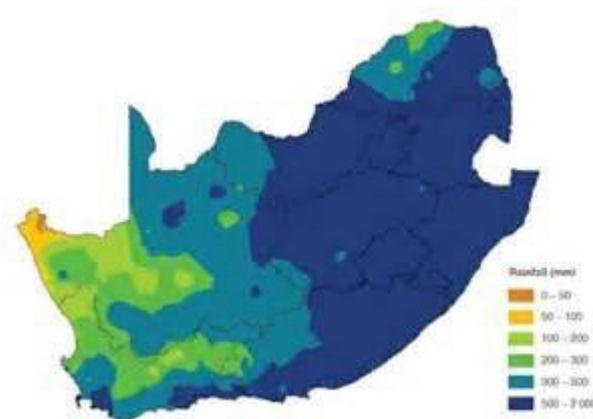
Indian Ocean. That's why the western side of South Africa does not get summer rainfall. This means that there is less moisture and rain clouds to bring rain.



Summer rainfall map in South Africa

### **Winter rainfall in South Africa**

In winter, more rainfall is found on the west coast and also on the east coast of South Africa. The rain clouds are brought to South Africa from the west in big rain storms. The rain storms bring lots of rain and very cold temperatures. Very little rain falls in the interior and north of South Africa because the high mountains of the escarpment block the clouds.



Winter rainfall map in South Africa

## **Climate**

### **The difference between weather and climate**

Weather tells us about the conditions outside right now and it can change at any time. When we talk about weather we talk about the wind, cloud cover, temperature and rainfall.

Climate describes the weather over a long period of time. For example, the climate for

Gauteng is hot, rainy summers and cold, dry winters.

People determine the climate of an area by observing and recording the weather for a long period of time. So, climate is the average of all the weather information that has occurred in a region over a long period of time.

### The different climates of South Africa

The same types of areas usually experience the same types of climate. Look at the following:

- Hot climates are inland.
- Dry climates are in areas that do not get much rainfall. This can be inland or on a coast.
- Cold climates are on mountain ranges very high above sea level.
- Wet climates are in areas that get a lot of rainfall.
- Cool climates are in places near the sea or places that are high above sea level.
- Humid climates are in places that are hot and get good rainfall at the same time.

In South Africa we have eight climate types. The climates are linked to the areas where they occur. These are the following eight areas of South Africa that experience different climates:

1. **Subtropical coast:** hot and high summer rainfall. Warm and average winter rainfall.
2. **Subtropical lowveld:** Hot and high summer rainfall. Warm and low winter rainfall.
3. **Temperate coast:** warm and high summer rainfall. Dry and cool winters.
4. **Plateau slopes:** warm and high summer rainfall. Dry and cool winters.
5. **Temperate eastern plateau:** Warm and good summer rainfall. Dry and cold winters.
6. **Semi-arid plateau:** Hot and low rainfall summer. Dry and cold temperatures in winter.
7. **Desert regions:** hot and very little summer rainfall. Cold and very little rainfall in winter.
8. **Mediterranean region:** Warm and low rainfall in summer. Cool and heavy rainfall in winter.

### Natural vegetation

Natural vegetation refers to plants that have grown in a place without interference from people. These plants have adapted to the soil type, temperature and the amount of rainfall in that area. Natural vegetation does not need to be watered by anyone. These plants grow in this area because they can live with as much or as little rain that the climate provides.

They are a group of plants that have similar needs. Natural vegetation is often indigenous vegetation. This means the plants have been growing in the area for a long time.

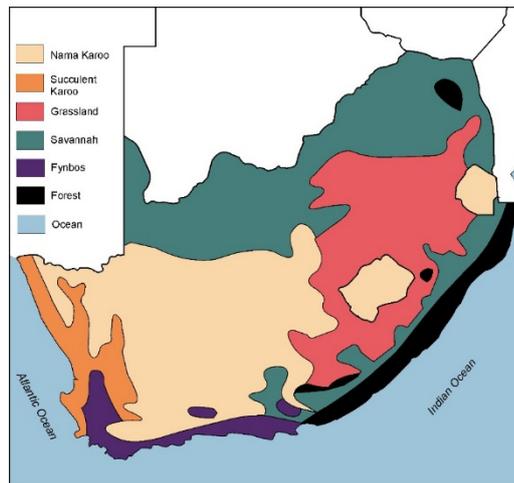
A hot house is not a natural environment. A hot house is heated and the plants are watered often. A hot house is also a building that has been built so that plants can grow at all times of the year. A hot house is also sometimes called a green house.



### How is natural vegetation linked to climate?

The eight climatic regions in South Africa are linked to the temperature and rainfall distribution. Natural vegetation regions in the country are also linked to climatic regions, but not as closely. If you look at the natural vegetation map of South Africa you will see that the Mediterranean climate and the fynbos vegetation regions cover almost the same area. The savannah vegetation region covers the subtropical coast, subtropical lowveld and semi-arid plateau. The type of soil and the climate also affects where these plants grow.

<b>Natural vegetation type</b>	<b>Province</b>	<b>Trees and plants</b>
Fynbos	Western Cape	Erica mimosa and King Protea
Forest	Coast of Western Cape and Eastern Cape	Black Stinkwood trees and Rumohra fern
Succulent Karoo	Northern Cape	Quiver tree and vygies
Nama Karoo	Northern Cape and northern part of the eastern Cape and Western Cape	Acacia sweet thorn trees and Namaqualand daisies
Savannah	KwaZulu-Natal, Mpumalanga, Limpopo and northern part of North West province	Baobab, Barberton daisies
Thicket	Small parts of Eastern Cape and KwaZulu-Natal	Albany cycad and "spekboom"
Grassland	Free State, Gauteng, Eastern Cape	Sweet grass and red hot poker

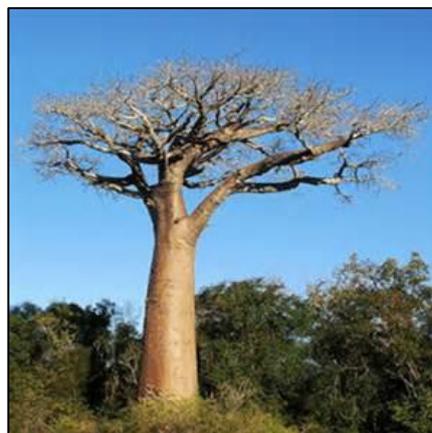


Natural vegetation regions in South

**Some of South Africa's indigenous natural vegetation:**



**Quiver trees** store water in their trunks and leaves. They are found in the Nama and Succulent Karoo regions.



**Baobab trees** have shiny bark that reflects the sun to stay cool and long roots to find water. They are found in savannah regions.



**Protea plants** have small hairy leaves so they do not lose water. They are found in fynbos regions.

Bibliography - Angier K, Carr D, Cockburn J, Wallace J – Our World, Our Society grade 5