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GET Term 2 Take Home Package
Social Science : Geography
Grade 8

SOCIAL SCIENCES: GEOGRAPHY

LESSONS 6 & 7: Application of climate factors on places (towns and cities) in South Africa.

You must know:

- how latitude, distance from the ocean, ocean currents, the plateau (altitude) and escarpment (relief) influences the temperature and rainfall of various places based on its location in South Africa.

SOURCES:

- Lesson on page 3 and 4.
- Textbook*: South Africa’s climate.
- Weather forecast in the media.
- Own weather observations of local place.

LEARNER TASK: *USE THE INFORMATION ON PAGES 3 - 4 AND YOUR TEXTBOOK TO COMPLETE THE FOLLOWING TASK IN YOUR WORKBOOK.*

5. The questions that follow are based on the map and the climate data in the table below the map. Study the data in the table with the map and answer the questions in your workbook.

MAP WITH LOCATION OF PLACES

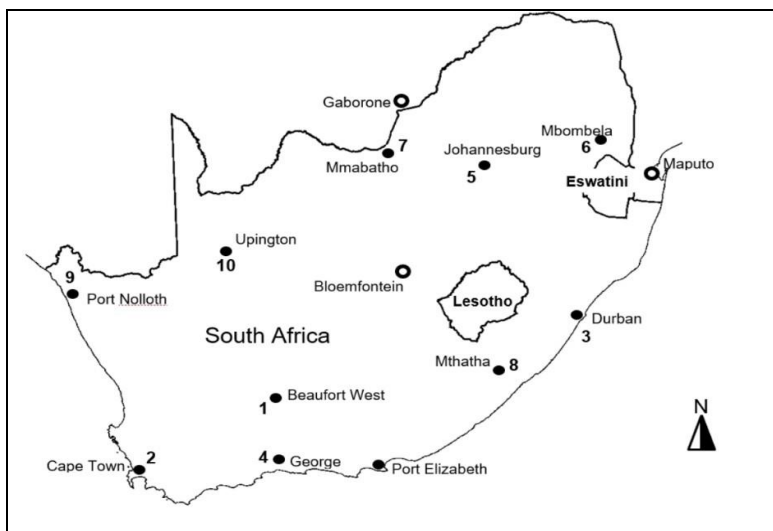


TABLE:

Cities/Towns	Average annual temperature in °C	Annual temperature range in °C	Annual Rainfall in mm	Altitude in meters
Port Nolloth	14.2	7	61	11.6
Durban	18.6	5.6	1008	46
Cape Town	16.9	8	853	42
Johannesburg	16	11	790	1757
Bloemfontein	16.1	15.2	540	1398
Beaufort West	18	13	225	890

- 5.1 The temperature and rainfall information in the table is regarded as climate data and not weather information. What is the difference between climate and weather?
- 5.2 Briefly explain how the annual average temperature for a place is calculated.
- 5.3 The climate rule of latitude states: "Places on the same latitude should have the same temperature and rainfall". According to the map, **Durban** and **Port Nolloth** are more or less on the same latitude, but has significant differences in its annual average temperatures.
- (a) Calculate the difference in the annual average temperature between the two places.
 - (b) Explain why there is a difference in annual average temperatures between the two places.
- 5.4 Discuss the reasons for the low annual rainfall received in **Port Nolloth**.
- 5.5 Study the difference in the temperature range between **Durban** and **Bloemfontein**.
- (a) Define the term temperature range.
 - (b) Which of the two places have a continental climate?
 - (c) Discuss the reasons for the huge difference in the temperature range between the two places.
- 5.6 Study the difference in rainfall between **Cape Town** and **Beaufort West**.
- (a) Calculate the difference in rainfall between the two places.
 - (b) Name the rainfall season for Cape Town.
 - (c) Which of the two places have a maritime climate?
 - (d) Explain the low rainfall received in Beaufort West.
- 5.7 Study the data for **Johannesburg** in the table and its location on the map.
- (a) What is Johannesburg's annual average rainfall?
 - (b) Name the rainfall season for Johannesburg.
 - (c) Explain the fairly high average rainfall for Johannesburg.
 - (d) Explain the cool annual average temperature of Johannesburg.
- 5.8 Discuss the reasons for the high annual rainfall received in **Durban**.

LEARNER TASKS:

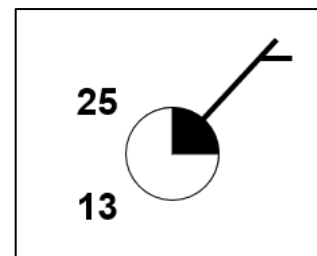
USE THE INFORMATION ON PAGES 3 - 4 AND YOUR TEXTBOOK TO COMPLETE THE FOLLOWING TASKS IN YOUR WORKBOOK.

8.1 Copy the table below in your workbook and complete the missing information.

	Element	Description	How measured?	Unit of measurement
1	Precipitation			
2	Temperature			
3	Wind speed			
4	Wind direction			
5	Humidity			
6	Air pressure			
7	Dew point temperature			

8.2 Study the weather station model below and give the readings for the following weather elements.

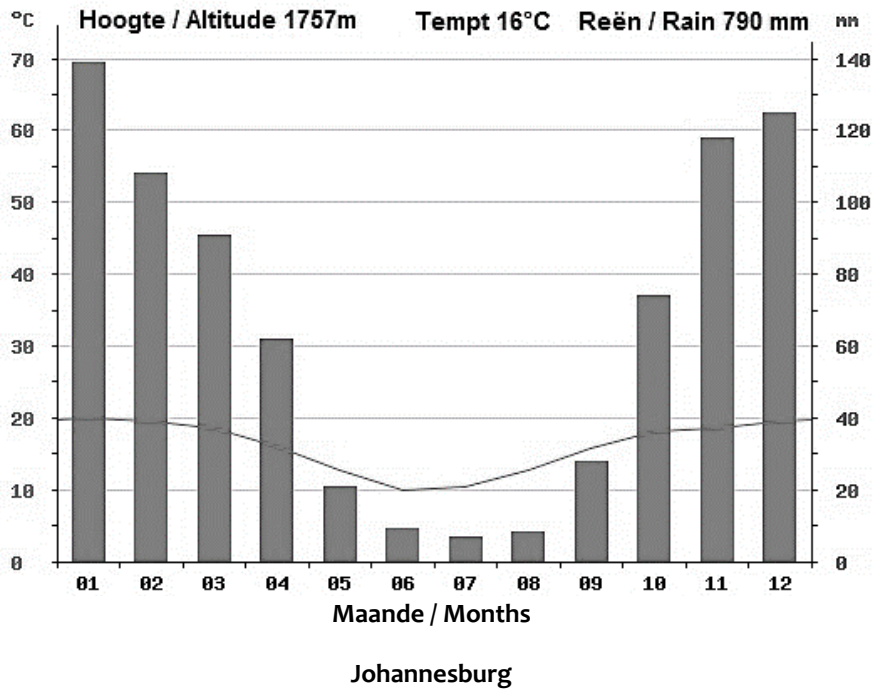
- (i) temperature
- (ii) dewpoint temperature
- (iii) cloud cover
- (iv) wind speed
- (v) wind direction
- (vi) precipitation



8.3 You will have to observe and record the weather in the table below. Look outside through your window and complete the questions by choosing the correct option in the boxes next to the question:

Name your place:		Give the date		
Questions		Options to the questions		
(i)	It is ... outside	hot	cool	cold
(ii)	It is ... outside.	raining	sunny	snowing
(iii)	It is ... outside.	windy	calm	moderate
(iv)	The wind is blowing from the ...	SE	NW	
(v)	It is ... outside.	cloudy	clear	partly cloudy

8.4 Study the climate graph of Johannesburg, South Africa and then answer the questions that follow.



- 8.4.1 Distinguish between the terms weather and climate.
- 8.4.2 Name the month in which Johannesburg receives its highest rainfall.
- 8.4.3 State the amount of rainfall recorded during the month you mentioned in QUESTION 8.4.2.
- 8.4.4 State the average annual rainfall of Johannesburg.
- 8.4.5 Which month is the coolest month in Johannesburg?
- 8.4.6 During which season is the coolest month in Johannesburg?
- 8.4.7 State the temperature of the coolest month.
- 8.4.8 State the temperature for the warmest months in Johannesburg.
- 8.4.9 Calculate the average annual temperature range for Johannesburg.
- 8.4.10 Describe the seasonal distribution of rainfall in Johannesburg.

TOPIC: Climate and Weather

Study this lesson (8) with the following questions in mind!

What is the difference between climate and weather? [Concepts]

Weather:

- Short term, day-to-day changes in conditions of the atmosphere such as rainfall, temperature and wind direction.



Climate:

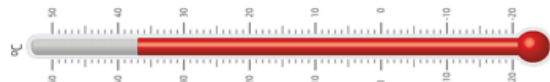

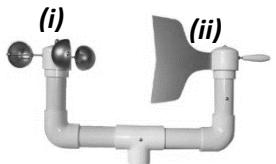

- Average weather conditions recorded over a long period of time e.g. 20 years

Video on the difference between climate and weather (2 min).

<https://tinyurl.com/y8q86xnq>



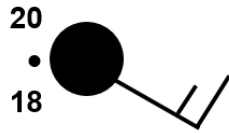
What causes the day- to-day changes in our weather?

Weather elements	What is it?	How is it measured?
Temperature:	is a measure of how hot or cold the air is.	Measured in degree Celsius (°C) with a thermometer. 
Humidity:	is the amount of water vapour in the air. Water vapour is water in the air in the form of a gas. Water vapour enters the air when water evaporates. Warm air holds more water vapour than cold air.	Expressed as a percentage (%) measured with a hygrometer. 
Wind:	is the horizontal movement of air. Wind is described by its direction (the direction from where the wind blows) and speed (force).	Wind speed is measured in knots with an anemometer (i) . Wind direction is determined with a wind vane (ii) from where the wind blows using compass direction. 
Precipitation:	is any liquid or frozen water that forms in the atmosphere and falls back to the earth e.g. rain, hail and snow	Rainfall is measured in millimeters, using a rain gauge. 
Dew point temperature:	is the temperature to which air must cool for water vapor to condense into liquid e.g. water	Dew point can be calculated using the air temperature and a relative humidity value, which is measured with a hygrometer.
Air Pressure:	is the force exerted by the weight of the atmosphere on the surface of the earth in all directions due to gravity	Air pressure is measured in hectopascal (hPa) or millibar (mb) with a barometer.

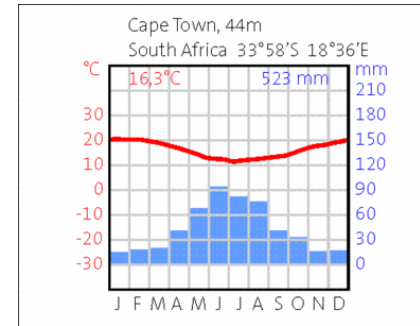
How is weather shown on a weather map?

How is climate shown?

- Weather of a place is shown by a symbol known as a weather station model:

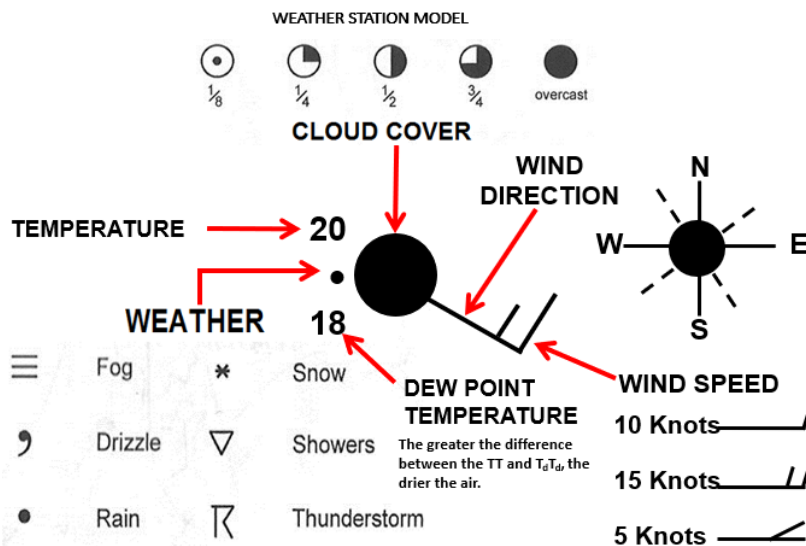


- Climate of a region can be indicated by means of a climate graph:



How do we read a weather station model?

How do we read a climate graph?



- Climate graphs show the typical monthly rainfall and temperatures for a location.

