

GRADE 8-SOCIAL SCIENCES

TERM 2- GEOGRAPHY

TOPIC-CLIMATE REGIONS

- Temperature and rainfall tell us about the climate of an area.
- Air temperature tells how cold or hot a place is.
- Temperature varies from place to place.
- Climate is the general conditions weather conditions that a place can expect.
- Weather is the day to day conditions in the atmosphere
- Climatic region is a large area that has similar climate conditions
- Relief is the shape of the land.

Factors that influence temperature and rainfall

- A) Distance from the equator (latitude)
- Temperature decreases as you move away from the equator into high latitudes
 - At the equator the sun's rays shines directly down on the surface while at the poles sun's rays are spread over a larger area of land
 - The earth is not positioned straight up in space, it is tilted on its axis. The position of earth during its yearly revolution around the sun affects how much radiation certain areas receive from the sun.

b) Distance from the sea

- The sea affects the climate of a place
- Land heats more quickly than the sea.(oceans are liquid and land is solid)
- Coastal areas do not get as hot or cold as places inland
- Coastal areas, temperature during winter are warmer and summers are cooler
- Places near the sea where there are warm currents are likely to get more rain than places that are further inland.

c) Height above sea level (altitude)

- The higher place is, the lower the temperature.
- Temperature decreases with altitude
- Incoming solar radiation solar radiation passes through the atmosphere without heating it.
- Radiation only begins to heat the land and oceans when it strikes the earth surface.
- Air is thinner at higher altitudes.

d) Ocean currents

- Ocean currents can be warm or cold

- Ocean currents affect the temperatures of coastal areas by increasing or decreasing temperature
- Places near warm currents receive more rainfall while cold currents receive less rainfall (drier).
- Water that flows near the equator are warmer than water that flows near the poles.

e) Mountains (relief)

- The relief of the land means that some areas receive more solar radiation than others.
- Some places faces the sun while others faces away from the sun.
- Mountain slopes that face the sun are warmer than those that do not.
- North facing slopes in the Southern hemisphere are warmer than South facing slopes.
- Mountains can bring rain to some areas by forcing air to rise and release moisture content as rain.

South Africa's weather

Factors that influence temperature and rainfall in South Africa

- Distance from the equator (latitude)
- Distance from the sea
- Altitude
- Ocean currents
- Mountains (relief)

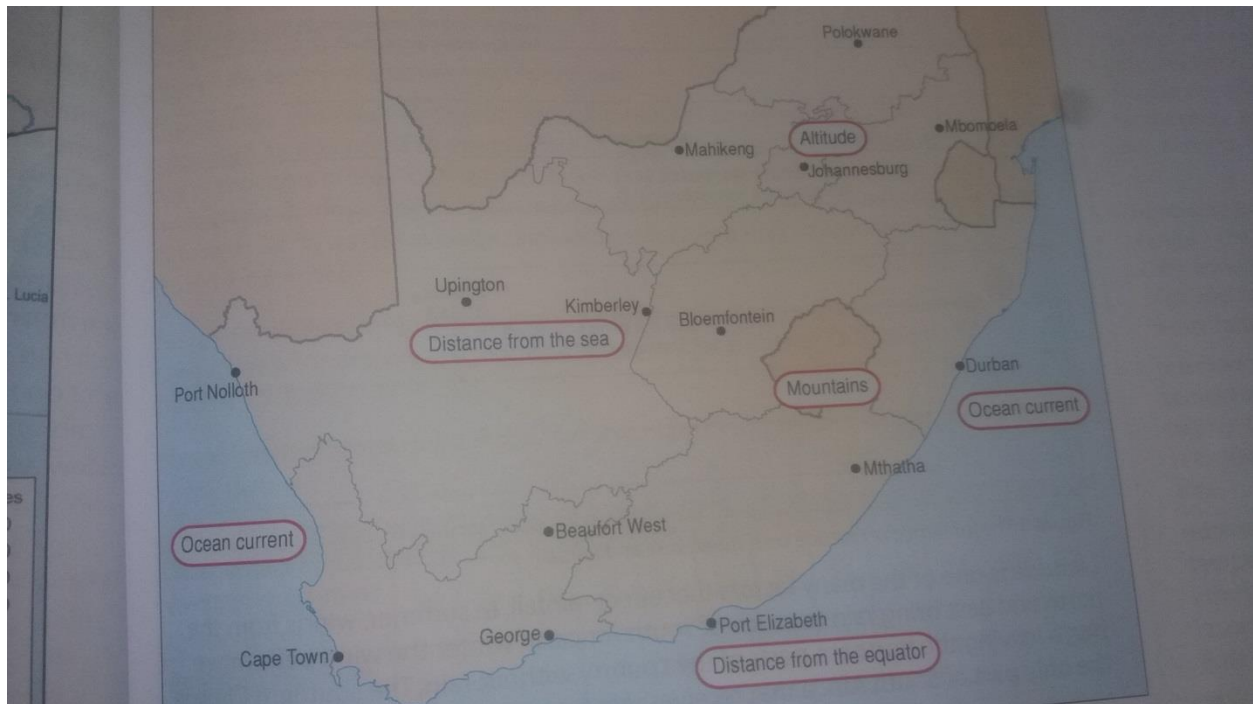


Figure 1: factors that influence temperature and rainfall in South Africa.(platinum social sciences)

a) The influence of distance from the equator.

- Different cities in South Africa are located on different latitudinal positions.
- These different positions have influence on temperature and rainfall. Mahikeng is located on 25° , Kimberly on 28° and Mthatha is located on 31° this means that Mahikeng is closer to the equator compared to Kimberly and Mthatha.

b) The influence of distance the sea

- The land heats up to a higher temperature than the sea in summer and land cools to a lower temperature in winter. This means inland places that are far from the sea have more extreme temperatures than places near the sea.
- Kimberly is 700km from the nearest ocean, that's why this place experiences very high temperatures in summer and very low temperatures in winter.

c) The influence of height above sea level

- Areas with high altitude in South Africa are colder than those areas in lower altitude.
- Sutherland in the Northern cape is believed to be the coldest place with an altitude of 1460m

d) The influence of ocean currents

- The warm Agulhas current brings warm water from the equatorial areas of the Indian ocean to the eastern coast of South Africa such as Durban
- The cold Benguela current brings cold water from the Southern ocean to the west coast of Southern Africa
- Currents lowers the temperature of places on the west coast

e) The influence of mountains (relief)

- The mountains of Drakensburg cause rain in the eastern part of the country and prevent rain from passing westwards.
- The presence of Ukhahlamba- Drakensburg partly explains why the western parts of South Africa are so much drier than the eastern parts.

Activity

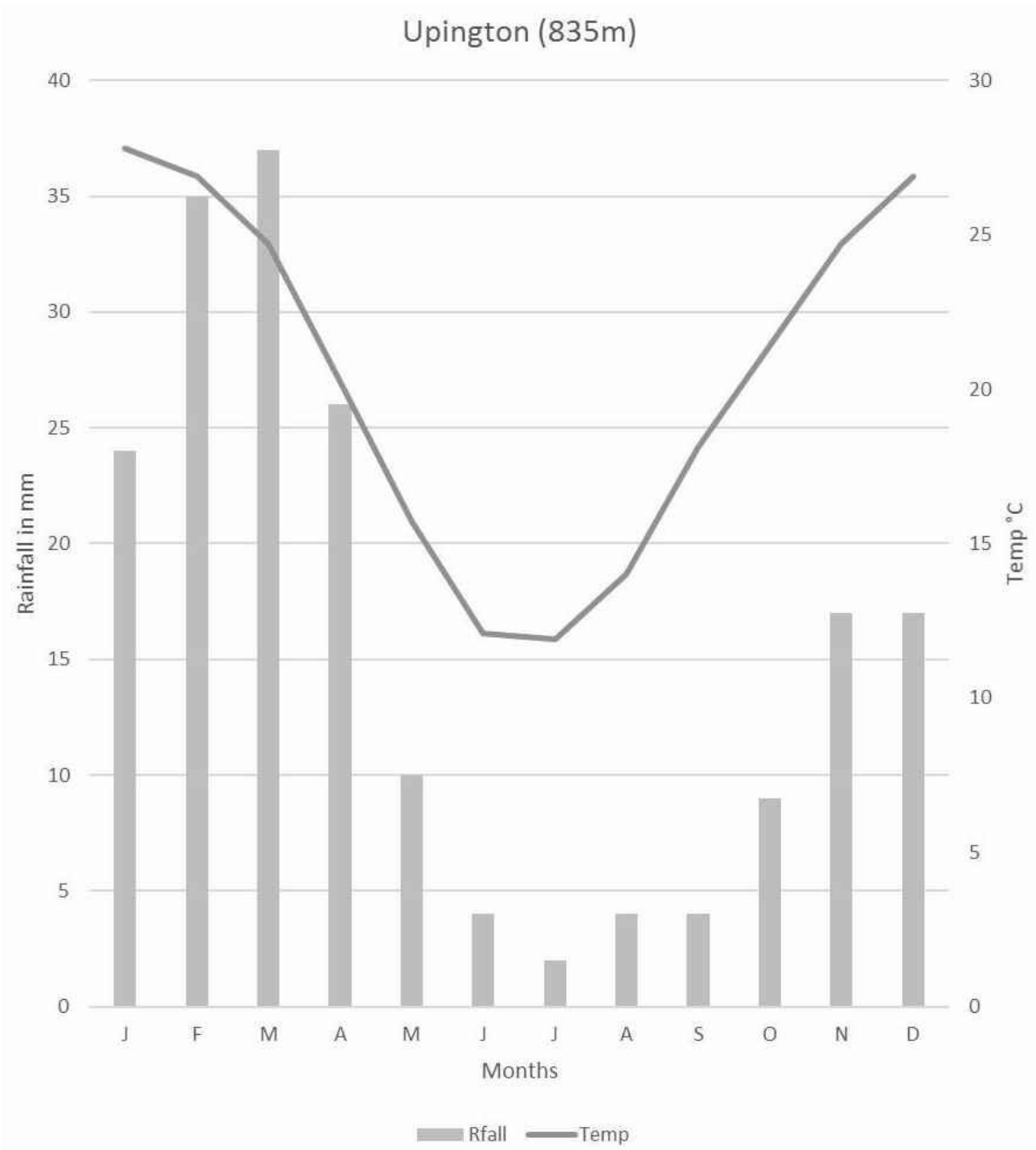
Question 1

1.1 Refer to the climate graph below of the town of Upington and then answer the questions that follow:

- (a) Name the month which has the highest rainfall. (1x2=2)
- (b) Name the month which has the lowest temperature. (1x2=2)

(c) Prove that Uppington has dry winters.

(2x2=4)



1.2 The following table shows the atlas index for Upington.

Upington RSA 13 28°26' S 21° 12' E

- (a) Name the two hemispheres in which Upington is located. (2x1=2)
- (b) Using the climate graph above state how the January temperature and the July temperature can be used to describe Upington's climate as continental. (3x1=3)
- Total 15**