



## The Desert Climate Zone



### What are temperatures and rainfall like in deserts?

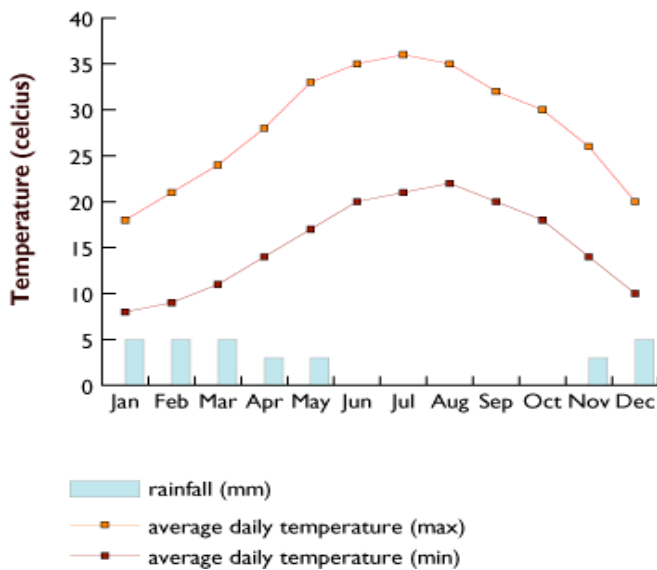


Fig. 1: Climate in an average desert

Deserts are the hottest and driest of all the climate zones. In fact an area has to have less than 25cm of rainfall per year to be known as a desert - that's roughly the length of your wrist to your shoulder. Sometimes deserts can get no rainfall at all for years! The world record temperature of 58°C was recorded in the Sahara Desert in North Africa. Indeed maximum temperatures of 40 to 45°C are common, although during colder periods of the year night-time temperatures can drop to freezing or below! The low humidity (how much water there is in the air) and cloudless skies allow heat from the sun to reach the ground and heat it during the day, whereas at night the lack of cloud and low humidity allow the heat to escape rapidly.

### Where do you find desert climates?

There are several large deserts, found mostly near the equator. The most famous desert in the world is the Sahara, which covers much of North Africa. There are many other deserts too like the Simpson and Great Sandy in Australia, the Kalahari in south-west Africa and the Sonora desert in Mexico, to name just a few. Countries that have large areas of desert include Saudi Arabia, Iran and Iraq (all in the Middle East) and South Africa.

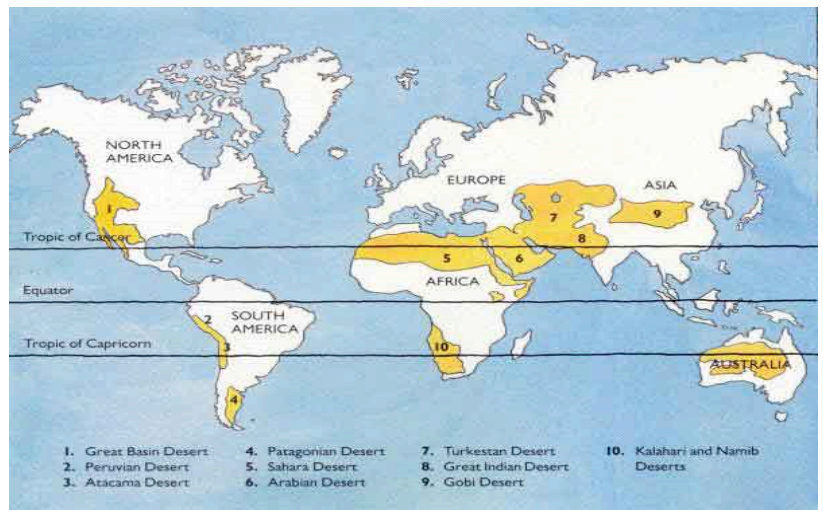


Fig. 2: Map of the globe that shows where the main deserts are

### How do deserts influence people's lives?

The harsh climate makes life difficult for people. Life is difficult because the lack of water and rain means there is little water to drink or to use to grow crops. Many desert tribes such as the Australian Aborigines and the Tuareg of North Africa have survived as nomads. Nomads wander around from one area to the next looking for food, never staying for too long in one place because there is so little to eat, even in a large area.



Fig. 3: Tuareg people

## What impact do people have on deserts?

Desertification, when areas become drier and sandier, is an increasing problem in the world. People can cause further desertification by removing trees and farming livestock (cows and sheep) which eat plants. The plants and trees help stop the soil being eroded. Erosion is when soil is washed or blown away: without soil trees and plants find it harder to grow.

## Do deserts have seasons?

Deserts tend to be hot all year round with no real seasons, as they are always hot and dry. The Gobi desert in Mongolia is an example of a cool desert. Though hot in summer, it does have a cold winter.

## Do any plants survive in the desert?

There are some plants in the desert. Indeed a common misunderstanding people have about deserts is that they are barren and lifeless; however several kinds of plants and animals are able to live in the desert. The plants that do survive have special adaptations. For example, the cactus has a tough outer skin to resist the heat and is able to store large amounts of water on the rare occasions when rain falls. Some seeds can survive for long periods, months or even years, waiting for rain. When rain does eventually fall they mature and bloom very quickly and shed more seeds, which in turn, will lie in wait for the next rains.



Fig. 4: Cactus

## How do animals survive in the desert?



Fig. 5: Sidewinder snake

Animals such as insects, camels, lizards, snakes, and cougars live in deserts. Similarly to plants that live in the desert they have special adaptations. The sidewinder snake has a distinctive side-winding movement to ensure that not all of its body is touching the burning sand at any one time. A camel can store great amounts of water to sustain it for long periods without drinking. The camel also has the capacity to foam at the mouth when it overheats, just like we sweat. The foam spreads over parts of the animal's body and then evaporates in the sun, so reducing its temperature.



Fig. 6: Camel

## Summary

Deserts are usually near the equator and are the hottest and driest of the major climate zones. It is difficult for plants, animals and people to survive in the desert because of the lack of water and rain. The few people who do live in the desert have to constantly move around to find food and the animals and plants that live there have special adaptations to help them survive.

## References and sources

### Text

[http://www.bbc.co.uk/weather/features/weatherbasics/zones\\_desert.shtml](http://www.bbc.co.uk/weather/features/weatherbasics/zones_desert.shtml)

[http://www.ace.mmu.ac.uk/eae/Climate/Older/Desert\\_Climate.html](http://www.ace.mmu.ac.uk/eae/Climate/Older/Desert_Climate.html)

### Images

Fig. 1:

[http://www.bbc.co.uk/weather/world/city\\_guides/results.shtml?tt=TT000180](http://www.bbc.co.uk/weather/world/city_guides/results.shtml?tt=TT000180)

Fig. 2: Map of the globe that shows where the main deserts are

<http://www.leo.lehigh.edu/envirosoci/weather/bitsofbiomes/deserts.htm>

Fig. 3: Tuareg people

<http://www.aworldtowin.net/reviews/Touareg.html>

Fig. 4: Cactus

<http://cdevroe.com/photos/arizona-cactus/>

Fig. 5: Sidewinder snake

<http://www.greatestplaces.org/questions/week24a.htm>

Fig. 6: Camel

[http://images.google.co.uk/imgres?imgurl=http://fohn.net/camel-pictures-facts/the-pictures/Arabian-Camel-800x600.jpg&imgrefurl=http://bsnyderblog.blogspot.com/2009/02/do-you-need-integration-patterns-you.html&usq=\\_\\_Hd8IybV1JaSAgrzqjIxod8wbpN8=&h=600&w=800&sz=57&hl=en&start=1&um=1&tbnid=kEQCTZihmRfTM:&tbnh=107&tbnw=143&prev=/images%3Fq%3Dcamel%26hl%3Den%26sa%3DG%26um%3D1](http://images.google.co.uk/imgres?imgurl=http://fohn.net/camel-pictures-facts/the-pictures/Arabian-Camel-800x600.jpg&imgrefurl=http://bsnyderblog.blogspot.com/2009/02/do-you-need-integration-patterns-you.html&usq=__Hd8IybV1JaSAgrzqjIxod8wbpN8=&h=600&w=800&sz=57&hl=en&start=1&um=1&tbnid=kEQCTZihmRfTM:&tbnh=107&tbnw=143&prev=/images%3Fq%3Dcamel%26hl%3Den%26sa%3DG%26um%3D1)

Date

T: understand a report on desert climates

- 1) What does humidity mean?
- 2) In what way is a camel similar to a human?
- 3) Why has the writer used questions for the subheadings?
- 4) Why has the writer included diagrams in the report?
- 5) What might you need to take with you if you were going to stay in the desert?
- 6) Give one difference between desert climates and temperate climates.
- 7) In your own words explain what 'adaptation' means and give an example of an 'adaptation'.
- 8) Why has the writer used an exclamation mark at the end of 'Some years deserts can get no rainfall at all for years!'?
- 9) Why might plants in the desert need to 'quickly' shed their seeds once they have grown?
- 10) Would it matter if you swapped around the order of the paragraphs? Why?
- 11) Why has the writer used the subtitle 'Do any plants survive in the desert?' instead of a subtitle like 'Which plants live in the desert?'
- 12) Why has the writer said that 25cm 'is roughly the length of your wrist to your shoulder'?
- 13) Why might it be true that the highest temperature ever *recorded* is not actually the highest temperature there has ever been on Earth?

Date

T: understand a report on desert climates

- 1) How much water there is in the air
- 2) A camel is similar to a human because they foam at the mouth just like we sweat.
- 3) To make you want to read on to find out the answer to the question / to make you think about the question before you read the answer (year 3 optional SATs say 'to get you interested is insufficient)
- 4) To show you visually where desert areas are / what temperature / rainfall are like
- 5) Any sensible suggestion e.g. water because it is hot / blanket because it gets cold at night time
- 6) Desert climates are drier / hotter than temperate ones.
- 7) A characteristic of an animal or plant that makes it particularly suited to the conditions of its environment (or anything similar)
- 8) Because years is a *very* long time to wait for rain
- 9) Because the water will quickly evaporate and it won't rain again any time soon
- 10) No because it is non-chronological / not like a story with a beginning, middle and end
- 11) Because the harsh conditions mean most people expect deserts to be lifeless
- 12) Because you might not have an idea how long 25cm is otherwise
- 13) There may have been a hotter temperature in a place where no one records the temperature / at a time when no one was around to record it