Year 8 - Spring Term - Geography: BQ2 - Why are hot deserts so hostile?

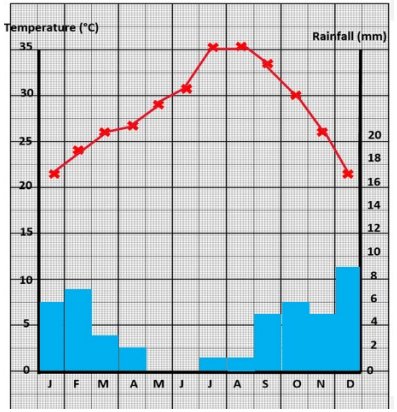
Biomes are large scale ecosystems. They are defined by factors such as climate, soils and vegetation. The world's major biomes include rainforest, desert, savanna grassland and tundra.

Where are deserts found?

Deserts are mainly found around the Tropics of Cancer and Capricorn, between 15° and 30° north and south of the equator. The main temperate deserts are found in the middle latitudes. Deserts are found in North Africa, central Australia and towards the southwest of the USA. Deserts are often found on the west coast of continents.

Desert Climate

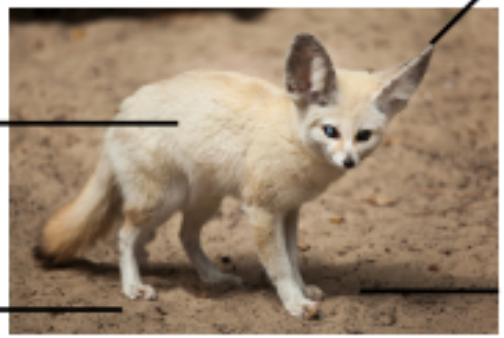
Deserts have extreme temperatures. During the day, the temperature may reach 50°C, when at night it may fall to below 0°C. This means the desert has a high diurnal range (difference between the highest and lowest temperature within a day). Deserts have less than 250 mm of rainfall per year. The rain can be unreliable. Several years can pass between rainfall events.



Animal adaptations

The desert fox is nocturnal. They sleep underground during the day when temperatures are high and come out at night when temperatures are cooler and more comfortable

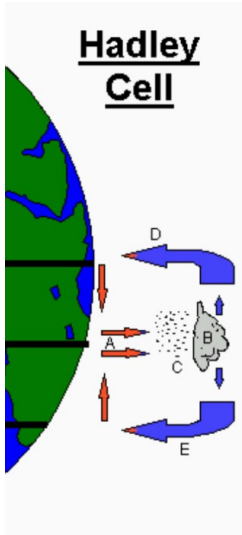
The desert fox has large ears which allows it to radiate body heat and help keep them cool in the hot desert environment.



The fox's feet are effective shovels for frequent digging— fennec foxes live in underground dens.

The fox's feet are hairy, which helps them perform like snowshoes and protects them from extremely hot sand.

Climate Explained



A. As you would expect, temperatures at the equator are highest. Warm air rises containing evaporated moisture.
B. The air cools, condenses and forms clouds.
C. Heavy equatorial rainfall occurs (like in the rainforest!)
D. The cool, dry air then begins descending. The air warms up. Any remaining moisture in the air is held as water vapour.

Year 8 - Spring Term - Geography: BQ2 - Why are hot deserts so hostile?

Desertification

When an area becomes a desert or the rapid depletion of plant life/loss of topsoil in semi-arid areas.

- Over Cultivation – Land is overused for crops and does not have chance to recover.

- Overgrazing – Where animals eat all the vegetation, soil is left exposed and easily erodes
- Deforestation – Cutting down trees for fuelwood exposes the soil, which is then easily eroded.

- Climate change – reduced rainfall and increased temperatures causes vegetation to die leaving the soil exposed.

- Population Pressure – With increasing number of people more crops need to be grown, more fuelwood is needed. Which leads to more strain on the land.

Common misconception

- **Noone lives in the desert - Over a billion people live in the desert.**
- **It never rains in the desert**
- **There is no vegetation in the desert – Many plants have adapted to live in the desert environment.**
- **The equator is hot because it is closest to the sun – The spread of the sun's rays is more concentrated closer to the equator**
- **Camels store water in their humps – They store fat.**

READ THIS

https://www.bbc.co.uk/bitesize/topics/ztgw2hv/articles/znnhp4j

KEYWORDS

Biome	A large-scale ecosystem such as a desert.
Camouflage	Colourings which allow a plant or animal to blend into their surroundings.
Canyon	A deep, narrow valley with steep sides.
Climate graph	A graph with three axis which shows the monthly temperature and precipitation for one location.
Convection Cell	The circular movement of warm and cold air.
Desert	An area of land that receives no more than 25cm of rainfall per year.
Desertification	The process of land turning into desert as the quality of the soil declines over time
Erosion	The process in which materials are worn away and transported by wind and water.
Global atmospheric circulation	A model to show how air currents in the atmosphere move. The model is split into three sets of cells – Hadley, Ferrel and Polar Cells.
Habitat	An environment where an organism lives throughout the year.
Humidity	The amount of water vapour in the air.
Indigenous	The first people living in an area.
Low pressure	Where air is rising and cooling producing clouds and rainfall.
Over grazing	the practice of grazing too many livestock for too long a period on land unable to recover its vegetation.
Over cultivation	The practice of excessive farming on a piece of land to the point of degradation of the soil as well as the land itself
Precipitation	Water released from clouds in the form of rain, snow, hail or sleet.
Rain shadow effect	Land that has been forced to become a desert because mountain ranges blocked rain getting to a particular location.
Succulent	Plants with thick fleshy tissues which are adapted to store water.
Weathering	The breaking down of rocks by water, ice, plants and animals.