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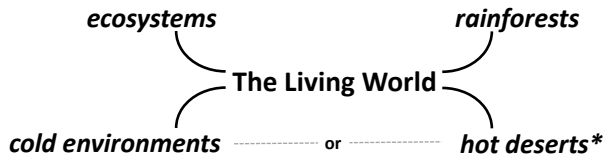
THE LIVING WORLD

Hot Deserts

quiz



The Big Picture



Key Terms



Appropriate technology – Technology suited to the needs, skills, knowledge and wealth of local people.



Biodiversity – The variety of life in the world or a particular habitat.



Desertification – The process by which land becomes drier and degraded.



Hot desert – areas with high average temperatures and very low precipitation.



Mineral extraction – The removal of solid mineral resources from the earth.



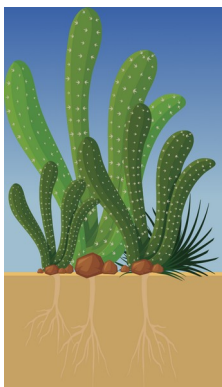
Over cultivation – Exhausting the soil by over-cropping the land.



Over grazing – Grazing too many livestock for too long on the land, so it is unable to recover its vegetation.



Adaptations



Reduced number of stomata to reduce water loss by transpiration.

Needles instead of leaves, reducing loss by evapotranspiration.

Large capacity to store water in fleshy stems.

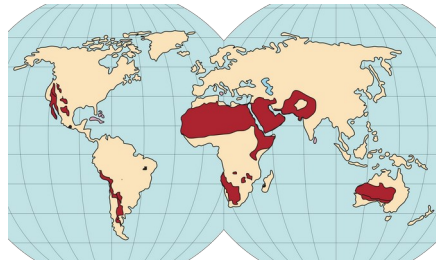
Large, network of roots absorb water rapidly after rainfall.

Camels

- humps store fat which a camel can break down into water and energy.
- broad, flat, leathery feet to spread their weight and provide protection from hot sand.



Location



Around the Tropics of Cancer and Capricorn

Between 15° and 30° north or south of the equator



Characteristics



Climate – Arid (rainfall <250mm/year, summer temperatures >40°C and high pressure.



Water – Short supply, downpours when it rains, high evaporation rates.



Soil – Sandy or stony and dry. Very little organic matter and generally not very fertile.



Biotic – Low level of biodiversity. Many plants and animals have adapted to conditions.



People – Sparsely vegetated desert fringes = livestock farming.



Interdependence

Interdependence includes:

- complex food webs
- sustainable coexistence of people, plants and animals in fragile semi-arid environments
- adaptations of plants and animals to soil and climate characteristics
- potential damage to the ecosystem inflicted by overgrazing etc.



Biodiversity

Rich in small pockets near water.

Threatened by humans.

Low rainfall = low biodiversity.

biodiversity

Generally low.

Fragile to changes.



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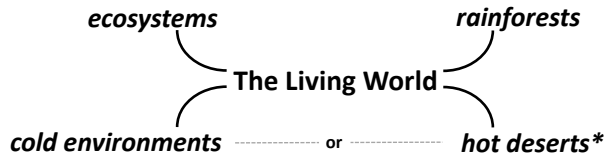
THE LIVING WORLD

Sahara Desert

quiz



The Big Picture



Location



About

The Sahara desert is the largest hot desert on Earth. It stretches across many countries in north Africa including Egypt, Tunisia, Algeria and Morocco covering an area almost the size of the United States of America. The Sahara has one of the lowest population densities on Earth.



Opportunities



Mineral resources – There are significant mineral resources in the Sahara including phosphate in Morocco, oil in Algeria, and gas in Egypt and Algeria.



Solar energy – The Sahara provides ideal conditions for generating solar energy with 12 hrs of sunshine every day. The Noor solar farm in Morocco will be the world's largest.



Tourism – Many people are fascinated by holidaying in extreme environments. Sand-boarding, cross-desert treks and carting a popular attractions on the edge of the Sahara.



Farming – Commercial farming is limited to areas where there is enough irrigation water. The Aswan Dam provides water for Egyptian farmers.



Challenges



Water– It is difficult to meet the growing demand for water for irrigation and industry. Extraction from boreholes is not sustainable as aquifers take 1000s of years to fill.



Inaccessibility – The Sahara covers a vast area. Often, air has to be used to transport people and materials which is very expensive.



Temperature – High temperatures in the Sahara present a threat to human life. With daily temperatures often higher than 40°C exposure to this kind of heat leads to death or illness. In addition to this healthcare may be a long distance away. The hot season is too warm for tourists so tourism is seasonal.



Key Terms



Ecotourism – Travel that conserves the environment and benefits locals.



Inaccessibility – Very difficult to travel or impossible to travel to or reach.



Irrigation – Applying controlled amounts of water to crops.



Non-renewable energy – Energy from sources that will run out e.g. oil.



Population density – a measurement of the number of people in an area.



Renewable energy – Energy from sources that will eventually run out e.g. solar.