

Geography Knowledge Organiser: Hot deserts

Term		Meaning and explanations
Lesson 1: Reasons deserts are found where they are		
1	Differential heating	The Earth is heated unevenly because it is curved and the Sun's rays hit at different angles Equator: direct sunlight → hot
2	Global atmospheric circulation	This temperature difference causes air to move, with warm air rising and cool air sinking The Equator receives the most energy from the Sun → Warm air rises → Air spreads north and south → Air cools and sinks around 30° north and south of the Equator
3	High pressure	Sinking air → high pressure + dry conditions (30°N and 30°S of the Equator)
Lesson 2: Hot desert characteristics		
4	Location	Found between 15–30° north and south of the Equator
5	Arid	Extremely dry with very little rainfall
6	Characteristics	Temperatures: High, often above 40°C during the day and below freezing at night Rainfall: Very low, less than 250 mm per year Biodiversity: Low due to a lack of water for plants and less food for animals
Lesson 3: Vegetation in the hot desert		
7	Vegetation	Sparse and widely spaced with shrubs and cacti
8	Plant growth	Slow and concentrated near water sources
9	Soils	Thin and nutrient-poor
10	Decomposition	Slow because there are few dead plants and animals
11	Nutrient recycling	Slow, providing few nutrients for plant growth
Lesson 4: Interdependence		
12	Interdependence	Different parts of the environment rely on each other
13	Climate, water and plants	High temperatures and very little rainfall make it difficult for plants to grow
14	Animals and plants	Camels eat shrub seeds → seeds are deposited in droppings → new shrubs grow
15	Soil	Plants absorb limited nutrients from thin, nutrient-poor soils
16	People	People depend on water sources, tourism and camels for transport
Lesson 5: Hot desert plant adaptations		
17	Adaptation	Plants and animals develop special features to survive
18	Plants adapt to challenges	1. High temperatures (often above 40°C) 2. Very little rainfall (less than 250 mm per year)
19	Thick, fleshy stem	The cactus stores water after rainfall
20	Shallow roots	The cactus quickly absorbs rainfall before it evaporates
21	Thin spines	Reduce water loss and protect the cactus from animals
Lesson 6: Hot desert animal adaptations		
22	Animals adapt to challenges	1. High temperatures (often above 40°C) 2. Very little rainfall (less than 250 mm per year)
23	Camel hump	Stores fat that can be broken down to provide energy
24	Light-coloured fur	Reflects sunlight and helps the camel stay cool
25	Long eyelashes and closable nostrils	Keep out blowing sand
Lesson 7: Opportunities in the Thar Desert		
26	Thar Desert	Located in Asia, mainly in Rajasthan in north-west India
27	Commercial farming	1. The Indira Gandhi Canal provides irrigation, allowing wheat and cotton to be grown

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		2. Some wheat and cotton are exported to other countries
28	Tourism	1. Tourists visit Jaisalmer for attractions such as camel safaris and Jaisalmer Fort 2. Tourism creates jobs and income for local people
Lesson 8: Challenges in the Thar Desert		
29	Extreme temperatures	1. Temperatures often exceed 40°C 2. Farmers find it difficult to work for long periods 3. Farming is less productive and generates less income
30	Low rainfall	1. Less than 250 mm of rainfall per year 2. Population growth puts pressure on rivers and the Indira Gandhi Canal 3. Fewer crops are grown and sold
Lesson 9: Physical causes of desertification		
31	Desertification	When the land becomes dry and degraded Soil loses nutrients → soil becomes less fertile → soil unable to support plant growth
32	Desert fringe	The land around the edge of a desert, a dry area where plants find it difficult to grow
33	Climate change	Higher temperatures and less rainfall Land becomes dry and less fertile → plants die
34	Drought	A long period with little or no rainfall Land becomes dry and less fertile → plants die
35	Wind erosion	Strong winds blow away the dry topsoil → land becomes dry, degraded and less fertile → fewer plants can grow
Lesson 10: Human causes of desertification		
36	Population growth	More food, water and fuel are needed → vegetation is removed → soil erosion increases
37	Overgrazing	Too many animals eat grass and plants so vegetation cannot grow back
38	Overcultivation	Farmers grow crops on the same land repeatedly, causing the soil to lose nutrients
39	Deforestation	The cutting down of trees Tree roots are removed → wind and rain erode the soil → land becomes dry, degraded and less fertile
Lesson 11: Managing desertification		
37	Stone lines (bunds)	Rows of stones slow down rainwater and reduce soil erosion
38	Zai farming	Small pits collect water, while manure improves soil quality
39	Tree planting	Roots hold soil together and reduce erosion by wind and rain
Deeper learning		
Online watching		BBC deserts: https://www.youtube.com/watch?v=2QdIF6Ld1oc
Online reading		BBC Bitesize KS3 geography deserts: https://www.bbc.co.uk/bitesize/topics/ztgw2hv/articles/znnhp4j BBC Bitesize KS3 geography desertification: https://www.bbc.co.uk/bitesize/topics/ztgw2hv/articles/zyysf82
NET Online Quizzing		Retrieval practice quizzes based on the key knowledge from your lessons. https://sites.google.com/northerneducationtrust.org/netgcsegeography/ks3