



Master Lesson Plan

For

Life in the Deserts

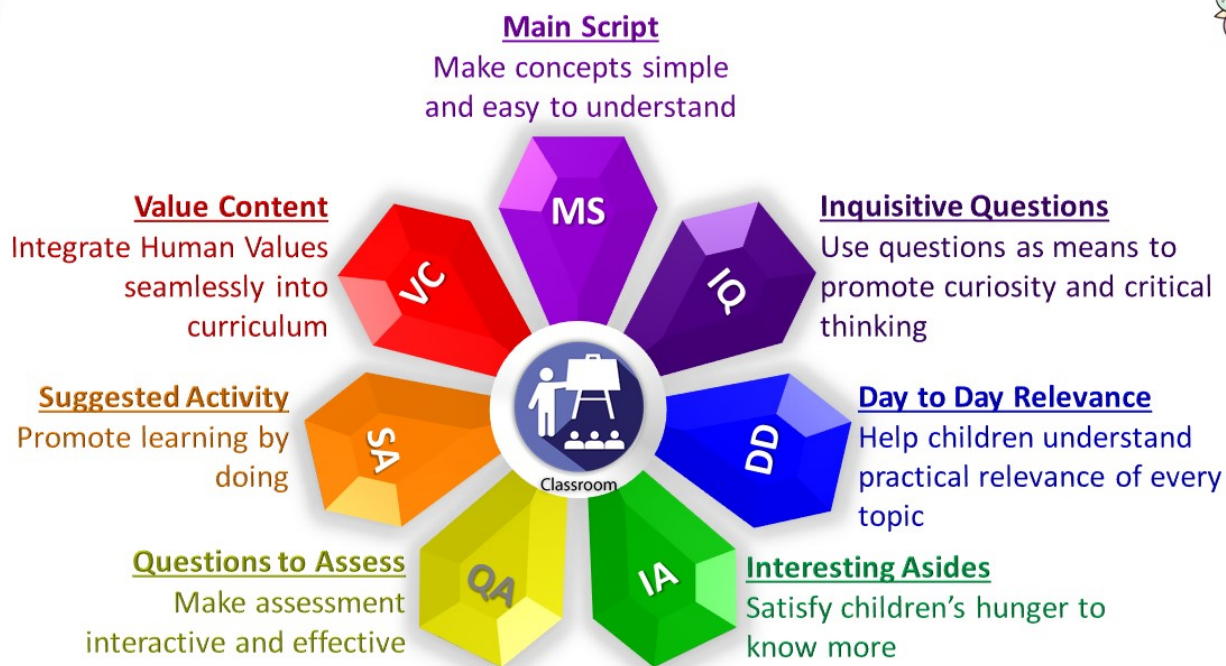
Board	Standard	Subject	Chapter	Language	Reference Link	Creation date
CBSE	STD VII	Social Science	Life in the Deserts	English	Life in the Deserts	2021-04-24 22:19:25

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Master Lesson Plan (MLP) - Covers the entire chapter with the help of these 7 asset types



For more information on how to use the lesson plan effectively, please scroll to the guidelines at the end of this document.

Life in the Deserts

1. MS_Objectives of Life in the Deserts

Objectives of 'Life in the Deserts'

Notes to the teacher:

This asset lays down the proposed plan for transacting this chapter.

It states the asset objectives of the MLP.

This asset is for teacher's reference and need not be taught to the students.

The students will be able to...

....appreciate the diverse desert regions located across the globe

...explain the location, extent and climate of the Sahara Desert

... practice tolerance at times of adversity in life

... analyse why certain plants and animals are unique to the Sahara desert

... demonstrate their learning about the climate of hot deserts, and the flora and fauna found there

...infer that the livelihood pattern of the people is determined by the geographical conditions of the region

...analyse how human activity can transform a green fertile region into a dry, arid desert

...evaluate how changes have impacted the people of Sahara Desert

...assess their learning on the location, climate and people of the Sahara

...describe the location, extent and climate of the Ladakh desert

... appreciate an interesting innovation that provides water to villages in times of extreme scarcity

... describe the different plants and animals found in Ladakh

... draw the map, mark the deserts and describe the life in the Sahara and Ladakh deserts

... discuss the livelihood patterns of the people living in Ladakh

... correlate the clothes we wear to its raw material originating in the desert

... examine how the people of Ladakh balance their respect for nature with the changes brought by modernisation

...demonstrate the diversity in creatures of hot and cold deserts

...assess their learning on the location, climate and people of the Ladakh

...summarise the characteristics, flora and fauna, and lifestyles of the people of hot and cold deserts, in the topic 'Life in the Deserts'.

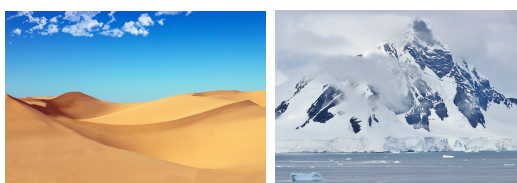
Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Main Script	Resources	Water Scarcity , Types of wild life, People living in Ladakh, Natural Environment , Life of tribal groups, Distribution of wild life, Climate , Water Scarcity , Types of wild life, People living in Ladakh, Natural Environment , Life of tribal groups, Distribution of wild life, Climate

2. IA_Desert Areas of the World

Desert areas of the world

[Notes to the teacher: The teacher can begin the session with the following statement: "Let us now explore what a desert is, and how many kinds of deserts there are."]

Hot and cold deserts

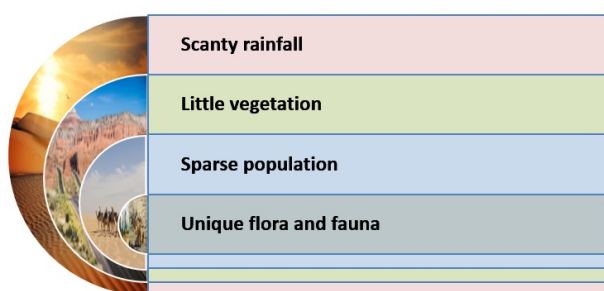


Pics: Hot desert, cold desert

- About 1/5 of Earth's land surface is water-deficient desert.

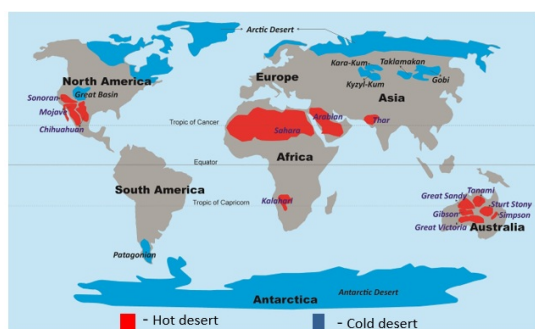
- A desert can be very hot and sandy, or cold with ice and mountainous glaciers: the region is termed 'desert' because it is dry and very little rainfall is received in the area.
- Water is essential to life. Human beings will not settle in areas where water is scarce, since it is required for their own sustenance, for their livestock and fodder, and to engage in agriculture.
- This is why the population is sparse in deserts.

Characteristics of desert



- The dry landscape of both cold and hot deserts have little rainfall, scanty vegetation and is sparsely populated.
- The hostile environment has created a unique community of flora and fauna that has adapted to the harsh physical conditions of the desert.

Deserts of the world



Pic: World map showing major deserts



Pics: Major deserts of the world

Life in the deserts



- Despite its stark and empty appearance, the desert is home to human beings and many creatures.
- Some of them are unique to the desert having adapted to the unusual environment and its conditions.

Image sources:

- 1.Hot desert: <https://pixabay.com/photos/desert-dune-sand-dry-hot-sahara-4306805/>
- 2.Cold desert: <https://pixabay.com/photos/antarctica-sea-ocean-snow-ice-sky-352394/>
- 3.Desert: <https://pixabay.com/photos/desert-sand-landscape-sun-sunset-790640/>
- 4.Vegetation: <https://pixabay.com/photos/desert-highway-roadtrip-landscape-864988/>
- 5.Population: <https://pixabay.com/photos/caravan-desert-sahara-sand-camel-4483792/>
- 6.Cactus: <https://pixabay.com/photos/desert-catus-cacti-dirt-road-392747/>
- 7.Animal: <https://pixabay.com/photos/warthog-kalahari-desert-animals-4823802/>
- 8.Desert map: SSSVV gallery (Deserts)
- 9.Great sandy desert - <https://pixabay.com/photos/clouds-over-dunes-great-sand-dunes-3865707/>
- 10.Thar: <https://pixabay.com/photos/desert-sand-dry-dunes-landscape-4385508/>
- 11.Antarctic - <https://pixabay.com/photos/ave-flying-ice-snow-fly-animals-4082766/>
- 12.Gobi- <https://libreshot.com/gobi-desert-in-mongolia/>
- 13.Namib: <https://pixabay.com/photos/namibia-wolwedans-namib-edge-desert-646902/>
- 14.Desert plant: <https://pixabay.com/photos/africa-landscape-desert-scenery-70229/>
- 15.Kangaroo rat - https://www.flickr.com/photos/usfws_pacificsw/6554996147/by

USFWS Pacific Southwest Region

- 17.Iguana:
https://en.wikipedia.org/wiki/Desert_iguana#/media/File:DesertIguana031611.jpg
- 19.Polar Penguin - <https://pixabay.com/photos/polar-bear-penguin-arctic-3277930/>
- 20.Bedouin tribes:
<https://flickr.com/photos/wikimediacommons/16570251195/in/photolist-rffSo8-dhhVfT-5v3pFM-8YV9X6-69VWDQ-8HV94J-2kdbqfD-jZwdmS-9Da9uJ-S5kg2q-bMqBVD-5v3nft-S7UsR8-5MYUY-8prBhK-7yNhyJ-bqmGGu-gSF1tG-6nNHjq-6nNHjo-hveKD8-guoxz6-mKC5fh-68Xk5E-eFVTSF-N3PxW-eG2BRY-6kD4tz-mKAhWc-f5WqTV-8fatDd-9iJKUw-eFVrpK-6kD4tT-6hPjos-6kD4tP-6kD4tF-6kD4tK-7EgSZ6-6kD4tH-eaJK53-efUw86-zgzjb8-eg1gF3-9DaBa7-eg1gJb-efUwdt-51yLnB-9Day3A-f1m1et> (by **Ashley Van Haeften**)
- 21.Gobi desert: <https://pixabay.com/photos/tropical-desert-gobi-drought-4962783/>
- 21. Desert plant: <https://pixabay.com/photos/africa-landscape-desert-scenery-70229>
- 22.Acacia- <https://www.maxpixel.net/Flowers-Fluffy-Wattle-Yellow-Acacia-4383485>

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Interesting Asides	Resources	Natural Environment , Natural Environment

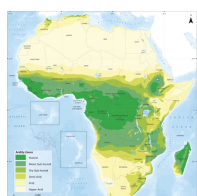
3. MS_Sahara-Location and climate

Sahara-Location and climate

Notes to the teacher:

The teacher can begin the asset with the following statement: “Let us now learn about the largest hot desert in the world.”

The gigantic Sahara desert



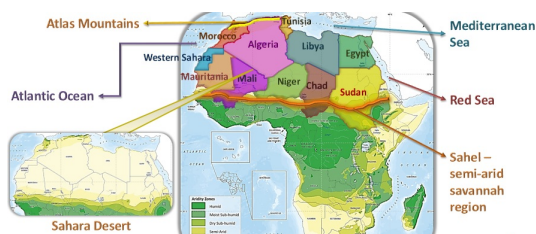
Pic: Africa

- The enormous Sahara desert is the world's largest hot desert, and one of its driest regions.
- It is also the third largest desert in the world, preceded only by the cold deserts of

Antarctica and the Arctic.

- The Sahara Is more than two-and-a-half times the size of India with a total area of 8.54 million sq. km.
- The name Sahara is Arabic for deserts. It is derived from 'sahra' which refers to a single desert.

Sahara- spans many countries



Pic: Countries touched by Sahara desert

- The Sahara desert covers most of the northern part of Africa.
- It touches eleven countries - Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Sudan, Tunisia and Western Sahara.
- The desert is bound by the Atlantic Ocean, Atlas Mountains, the Mediterranean Sea, Red Sea and a semi-arid savannah region called the Sahel.

Variety in topography



Pic: Sand dunes, plateaus, gravel plains, salt flats, oasis

The Sahara desert has vast and seemingly endless stretches of sands, especially sand dunes.

- However, it has other features like high plateaus, which could be as higher than 2500 m in places. These have barren surfaces strewn with rocks.
- There are gravel plains which are surfaces of the desert covered by rock fragments.
- Dry valleys and salt flats are other features of the Saharan landscape.

- Some areas of the desert have large underground storehouses of water, or aquifers. Lush, green oases can be found on the surface of these areas.

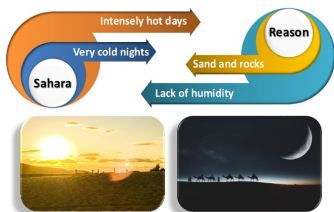
Climate - inhospitable



Pic: Sahara climate

- The Sahara Desert has an extremely harsh climate.
- It is searingly hot and dry, with scanty precipitation; this rainfall is received over a short season.
- Since the humidity is low in the dry desert, there is not enough water vapour to create clouds, and the skies are clear and without clouds.

Climate – scorching days and freezing nights



Pic: Desert day and night

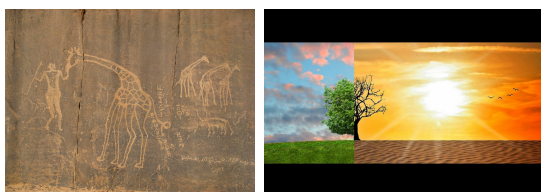
- The Sahara experiences intensely hot days, and very cold nights. The reason for this is two-fold; the sand and bare rocks, and the lack of humidity.
- The sun's energy heats the sand and rocks which radiate the heat resulting in scorching day temperatures that can go up to 50 degrees C.
- However, at night the sand releases its heat into the atmosphere, which rapidly dissipates, since there is no water vapour in the dry desert air to trap and store the heat.
- This lack of humidity is because in the desert, water evaporates at a greater rate than it collects.
- The quick loss of heat energy results in a dramatic drop in temperature after sunset, and night temperatures can touch freezing point.

A record temperature

About a century ago, in 1922, Al Azizia, entered the record books as the hottest place on earth with a sizzling temperature of 57.8 degrees C.

Al Azizia is a small town located near Tripoli, the capital of the North African country, Libya.

Change in climate



Pic: Cave painting and climate change

- Ancient cave paintings discovered in the caves in the Sahara desert suggest that the climate was not always hot, dry and inhospitable.
- Many thousands of years ago it was once a fertile green plain with grasslands, forests, lakes and rivers that supported wildlife such as elephants, crocodiles, lions, hippos, giraffes and antelope.
- Naturally occurring climate change transformed what was once a green area into what we now know as one of the driest and hottest regions of the world.

The gigantic Sahara Desert covers most of North Africa and has an extremely harsh and inhospitable climate.

Image sources

1. Africa physical map - <https://www.flickr.com/photos/nglklm/5257878245> – Attribution - **Nathan Laurell**
2. Sand dunes - <https://pixabay.com/photos/desert-sand-dunes-dunes-dry-1270345/>
3. Sahara Plateau - <https://www.flickr.com/photos/m1key-me/14726104624/> - Attribution - **Michał Huniewicz**
4. Sahara Plains - <https://pixabay.com/photos/desert-algeria-rustic-landscape-17642/>
5. Tunisia Salt Flats - <https://pixabay.com/photos/salt-lake-tunisia-sand-desert-915493/>
6. Libya Oasis - <https://pixabay.com/photos/oasis-libya-desert-palm-trees-67549/>
7. Sahara Sky - <https://pixabay.com/photos/desert-the-sand-dunes-morocco-4939663/>
8. Sun n sand - <https://www.flickr.com/photos/68166820@N08/49615543796> – Attribution - **cattan2011**

9. *Desert Night* - <https://pixabay.com/photos/landscape-fantasy-moon-camels-sky-5009868/>
0. *Cave Paintings* - <https://pixabay.com/photos/sahara-tassili-cave-paintings-649445/>
1. *Climate change* - <https://pixabay.com/illustrations/climate-change-global-warming-2063240/>

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Resources	Natural Environment , Natural Environment

4. VC_Tolerance is a Sign of Strength

Tolerance is a Sign of Strength

Note to teacher:

Teacher can start the Value asset with these words-"We will now learn how people, when faced with adversity and difficult circumstances, can show tolerance."

This attitude is seen in people of the desert who have learned to cope with exceptionally harsh extremes of temperature, and limited resources, especially water."



Tolerance is accepting without any reservations.

Tolerance is being patient, calm, understanding and accepting of anything which is difficult and different.

When we practice **tolerance**, we can accept everything that comes to us in life.

We can accept other's ideas and beliefs without any reservations.

"Tolerance is not a sign of weakness, but a sign of Strength." -Dalai Lama

Story – Salt water



Once a lady was disturbed, feeling humiliated and finding it difficult to cope with the situations in her life.

She heard of a great sage who taught ways to cope with difficulties.

She decided to go and ask him for advice.

After hearing her problems, the sage instructed the unhappy lady to put a handful of salt in a glass of water and then drink it.

"How does it taste?" he asked.

"Very bad and salty " replied the lady.

Then the sage asked the lady to walk with him to a nearby lake.

There he asked her to take another handful of salt and put it in the lake.

After the lady swirled a handful of salt into the lake, the sage said, "Now, go get a glass of water from the lake and drink it."

When she finished drinking the glass of lake water, the sage asked, "How does it taste?"

"Good!", replied the lady.

"Do you taste the salt?", asked the Master.

"No, not at all " said the lady.

The wise sage said, "The problems, and the pain you feel are just like handful of pure salt, no more, no less.

The amount of pain and problems in life remains exactly the same.

But the amount we learn to tolerate the 'pain' depends on the container we put it into.

So when you are in pain, the only thing you can do is to accept it with calm and patience and learn to solve the problems with calmness.

Stop being a glass, become a lake!"

Learning –



Students,

- ***Tolerance is a great value to practice.***
- ***Adversities in life are bound to happen, accept them and think of them as pinch of salt and learn to live with them.***
- ***Learn to accept all situations of pain and happiness in the same way.***
- ***Learn to practice smiling, not because of something but in spite of everything.***

Source:

Story from Hindu parable. Public domain story.

Adapted from: <http://spreadingthewisdom.blogspot.com/2012/04/become-lake.html>

<http://www.awakin.org/read/view.php?tid=175>

Image sources:

- Tolerance-<https://pixabay.com/photos/empathy-compassion-friendship-4181896/>
- Disturbed lady-http://media.radiosai.org/journals/vol_10/01OCT12/09_yagna.htm
- Sage and lady - http://media.radiosai.org/journals/Vol_04/01APR06/equanimity_nonduality.htm
- Desert oasis-<https://pixabay.com/photos/oasis-desert-caravan-palm-trees-3281084/>
- Tolerance in adversity-<https://pixabay.com/photos/taj-mahal-indians-india-agra-2309888/>

Time to teach	Value Type	Value Sub Type	Value Attribute
5 Minutes	Love	Tolerance	Stories

5. MS_Sahara_Flora and Fauna**Sahara- Flora and Fauna****Notes to the teacher:**

The teacher can begin the asset with the following statement: “Let us now see how even the inhospitable desert supports many plants and animals that thrive under these difficult conditions.”

Unique community of flora and fauna

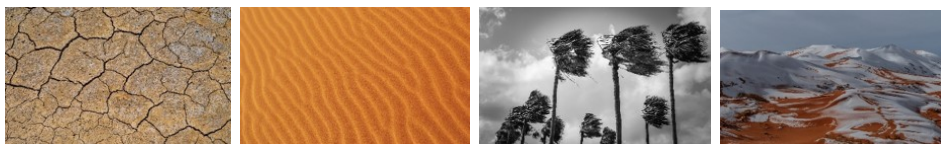
Pics: Camels and cactus

Early cave paintings and fossils reveal that animals such as elephants, giraffes, buffaloes and rhinoceros once roamed the Sahara region, before it became dry, arid and inhospitable.

Today these animals cannot be seen in these areas.

Instead, the harsh conditions have given rise to a unique community of plant and animal life that have adapted to the desert environment.

Challenges to life in the desert



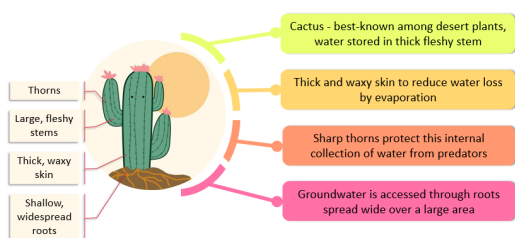
Pics: Water scarcity, sand, wind, temperature extremes

One of the most difficult places to live in is the desert.

Conditions in these areas are hostile to life, and animals and plants that survive here do so due to adaptations that minimise the impact of these conditions:

- Water scarcity
- All-pervasive sand
- Fierce winds
- Extreme temperatures

Flora-how a plant adapts



The cactus plant is among the best-known of desert plants.

- They store water in their thick fleshy stems.
- The skin is thick and waxy to reduces water loss by evaporation.
- Sharp thorns protect this internal collection of water from predators.
- Groundwater is accessed through roots that spread wide over a large area.

Flora of the desert



Pics: barren desert, cactus, acacia tree

In the arid parts of the Sahara, vegetation is thin and scarce, except in oases., which are few with vast distances between them.

The desert surface is scattered with cacti, shrubs and grasses that can tolerate heat and drought.

Fauna - how an animal adapts

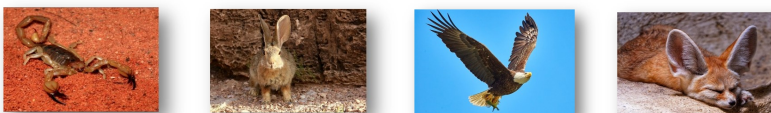


The camel is symbolic of desert life and, unlike smaller creatures, cannot escape the desert heat.

It is however, well-adapted to the harsh desert.

- The humps on its back store fat which can be used for nutrition and moisture, allowing them to go long periods without food or water.
- It is insulated from the scorching heat by their thick fur.
- Thick double rows of eyelashes and closable nostrils give eyes and nose protection from airborne sand.
- Its' large, flat feet allow it to walk on the soft sand without sinking into it.

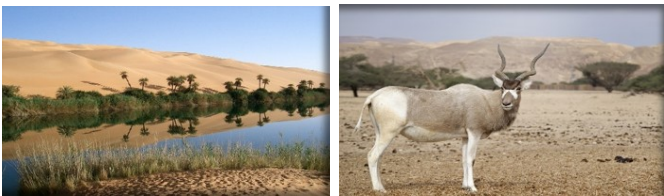
Fauna (reptiles, insects and mammals)



Pics: Scorpion, desert hare, eagle, desert fox

- Reptiles, such as snakes and lizards, and creatures such as beetles, spiders and scorpions, dominate the desert landscape.
- Both in number and diversity reptiles have best adapted to the challenges of the desert.
- Small creatures are able to escape the temperature extremes by finding shelter, perhaps under a rock or boulder.
- Larger mammals such as camels, hyenas, jackals, addax or antelope, desert foxes and wild dogs can also be found in the desert.

Oases



Pics: Oasis, Addax

- Fertile oases in the desert have sufficient water from underground sources, and these support a large variety of flora such as date palms, olive trees and other shrubs.
- The larger mammals too are supported by this green habitat in the otherwise dry and barren desert.

Desert animals are able to live under exceptionally hostile conditions by adapting to them; this has created a unique community of animal and plant life that is not found anywhere else.

Image sources

1. Camel - <https://pixabay.com/photos/camel-wadi-rum-desert-travel-1120371/>
2. Cacti - <https://pixabay.com/photos/cacti-green-prickly-needles-1453793/>
3. Dry Ground - <https://pixabay.com/photos/ground-dry-structure-contrast-4257252/>
4. Sand - <https://pixabay.com/photos/roter-sand-africa-namibia-desert-2042738/>
5. Wind - <https://pixabay.com/photos/palm-trees-wind-windy-weather-4069748/>

6. *Snow on Sand* - <https://pixabay.com/photos/nature-panoramic-snow-travel-3104009/>
7. *Cactus* - <https://pixabay.com/illustrations/cactus-plant-desert-flower-5960117/>
8. *Barren Desert* - <https://pixabay.com/photos/desert-landscape-desert-landscape-1081829/>
9. *Cacti* - <https://pixabay.com/photos/prickly-pear-opuntia-succulent-1501307/>
0. *Acacia Tree* - <https://pixabay.com/photos/israel-negev-timna-park-rocks-4764747/>
1. *Fennec Fox* - <https://pixabay.com/photos/desert-fox-fennec-fox-zoo-animal-5324789/>
2. *Acacia Tree* - <https://pixabay.com/photos/israel-negev-timna-park-rocks-4764747/>
3. *Camel* - <https://pixabay.com/illustrations/camel-desert-dunes-sand-sahara-1936653/>
4. *Scorpion* - <https://www.flickr.com/photos/55999899@N00/3051859135> "*Desert Scorpion*" by *teejaybee* is licensed under *CC BY-NC-ND 2.0*
5. *Desert Hare* - <https://pixabay.com/photos/desert-cottontail-rabbit-bunny-hare-3041513/>
6. *Eagle* - <https://pixabay.com/photos/bald-eagle-bird-in-flight-bif-usa-3545609/>
7. *Addax* - <https://pixabay.com/photos/addax-negev-desert-desert-dweller-4764789/>

Time to teach	Asset Type	Theme	SubTheme
7 Minutes	Main Script	Resources	Natural Environment , Natural Environment

6. SA_Sahara_Quiz Me

Sahara-Quiz Me

Notes to the teacher: The teacher can introduce the activity with the following statement: "Let us now have a short quiz on deserts".

Aim:

Through participation in the quiz the students will be able to gauge their knowledge on the climate, flora and fauna of hot deserts.

Material required:

Paper and pen/pencil for scoring

Setting for the activity:

Indoor, group activity

Type of activity:**Quiz****Procedure:****A few days before the activity:**

- The class is informed about the quiz and instructed to prepare for it.
- Teacher can form the students of the class into 4 groups, naming each one after a desert (e.g. Atacama, Thar, Kalahari, Patagonia),
- Each team should nominate one member to answer for the team.

On the day of the activity:

- The teacher can use the PPT to display the questions, and answers when required.
- The teacher can do the scoring or nominate a responsible student to do it.
- Each question is offered in rotation the teams.
- Scoring - If the first team answers correctly they are given full points. If the first team is unable to answer, the next team is given a chance to answer; in this case the correct answer is awarded half the points.
- The Word puzzle can be given after the quiz, as a follow-up activity. If time is short, it can be given as homework.

QUIZ

Q1 _____ of the land surface of the earth is covered by desert



A. $\frac{3}{4}^{th}$

B. $\frac{1}{2}$

C. $1/5^{\text{th}}$

D. None of the above

Ans: C. $1/5^{\text{th}}$

Q2 Which of these is not a desert?



A. Sandy desert

B. Amazon

C. Oasis

D. Antarctica

Ans: B. Amazon

Q3 Name the largest desert in the world



A. Kalahari

B. Antarctica

C. Thar

D. Sahara

Ans: B. Antarctica

Q4 Which of these is not a hot desert?



- A. *Gobi*
- B. *Thar*
- C. *Sahara*
- D. *Atacama*

Ans: A. Gobi

Q5 Which of the following definitions best defines a desert?



- A. *Hot, arid, high humidity*
- B. *Arid, low humidity, scanty vegetation*
- C. *Hot, sandy, low rainfall*
- D. *Dry, water-scarce, dense population*

Ans: B. Arid, low humidity, scanty vegetation

Q6 Identify this desert creature



- A. *Scarab beetle*
- B. *Desert spider*
- C. *Scorpion*
- D. *Wild shrimp*

Ans: C. Scorpion

Q7 The renewable energy source in a hot desert



- A. *Solar energy*
- B. *Thermal energy*
- C. *Wind energy*
- D. *Tidal energy*

Ans: A. Solar energy

Q8 A cactus is a thick fleshy succulent found in hot deserts. It survives desert conditions by:



- A. *absorbing sunlight*
- B. *giving shade from sun*
- C. *storing water*
- D. *none of above*

Ans: C. storing water

Q9 Desert creatures are mainly nocturnal. This means that they:



- A. *sleep during the day, active at night*
- B. *not active in summer, active in winter*
- C. *avoid sand dunes, live only near oases*
- D. *none of the above*

Ans: A. sleep during the day, active at night

Q10 Hot deserts are typically:



- A. hot during day and warm at night
- B. humid during day and cold at night
- C. hot during the day and cold at night
- D. None of the above

Ans: C. hot during the day and cold at night

Conclusion

Students demonstrate their understanding of the climate, flora and fauna of deserts.

Troubleshoot

NA

WORKSHEET:

Note to the Teacher: The teacher can distribute this worksheet with word puzzle after the Quiz. After completion the students can attach the worksheet to their notebooks.

A. Choose the correct word:

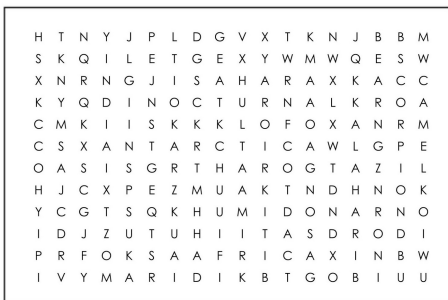
Check the clues and choose the correct word from the given options.

OPTIONS: Oasis, Egypt, Camel, Africa, Gobi, Antarctica, Arid, Thar, Cactus, Sahara, Olives, Humid, Nocturnal, Fox

1. All deserts – hot and cold – share this characteristic (***Ans: ARID***)
2. A fleshy desert plant with sharp spikes for leaves (***Ans: CACTUS***)

3. Largest desert in the world (**Ans: ANTARCTICA**)
4. Desert animal that can go several days without food and water (**Ans: CAMEL**)
5. Animals that are active at night when desert temperatures are cooler (**Ans: NOCTURNAL**)
6. Cold desert in Mongolia (**Ans: GOBI**)
7. Largest hot desert in the world (**Ans: SAHARA**)
8. Underground spring creates this (**Ans: OASIS**)
9. This is not desert climate (**Ans: HUMID**)
10. The Sahara, Namib and Kalahari deserts can be found here. (**Ans: AFRICA**)

B. Find the correct word in the puzzle and circle it.



Find the following words in the puzzle.
Words are hidden → ↓ and ↘.

Solution:

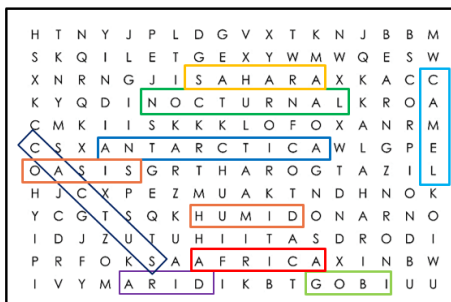


Image sources:

1. Desert area: <https://www.flickr.com/photos/53871588@N05/5630241115/> "The

- edges of the Sahara desert" by TREEAID is licensed under CC BY 2.0
2. Amazon <https://www.flickr.com/photos/10816734@N03/2366494349> "A road in the Amazon" by World Bank Photo Collection is licensed under CC BY-NC-ND 2.0
 3. Antarctica <https://commons.wikimedia.org/w/index.php?curid=30473524> "File:Penguin in Antarctica jumping out of the water.jpg" by Christopher Michel is licensed under CC BY 2.0
 4. Gobi desert <https://pixabay.com/photos/mongolia-desert-gobi-clouds-sky-1041539/>
 5. Desert definition: <https://www.flickr.com/photos/ainet/2760141515> "Golden Sand - white Desert" by www.alfieianni.com is licensed under CC BY 2.0
 6. Scorpion <https://www.flickr.com/photos/55999899@N00/3051859135> "Desert Scorpion" by teejaybee is licensed under CC BY-NC-ND 2.0
 7. Solar energy <https://www.flickr.com/photos/91981596@N06/29187082493> "Renewable Energy Development in the California Desert" by Bureau of Land Management is licensed under CC BY 2.0
 8. Cactus: <https://www.flickr.com/photos/84346589@N00/22464336256> "Prickly pear Cactus. Sonoran Desert. Tucson, Arizona." by drburtoni is licensed under CC BY-NC-ND 2.0
 9. Cotton tail rabbit <https://www.flickr.com/photos/67390803@N02/14695938297> "Desert Cottontail on August 9th, 2014" by Joel Tonyan is licensed under CC BY-NC-ND 2.0
 0. Day in Desert - <https://pixabay.com/photos/desert-sand-barren-dry-arid-790640/> AND Night in desert - <https://pixabay.com/illustrations/moon-moonlight-night-sky-dark-2372573/>

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Resources	Natural Environment , Climate , Natural Environment , Climate

7. MS_Sahara-How People Live

MS_Sahara – How People Live

[Note to the teacher: The teacher can introduce the asset with this statement:

"Have you wondered how human beings live in an environment so harsh and hostile, that even plants and animals cannot survive? Let us find out."]

Sparsely populated region

- The Sahara desert is one of the least populated areas on earth.

The population is very small because the desert environment is harsh and inhospitable.

• *Those who live in the desert have adapted over hundreds of years to survive in one of the most difficult environments on earth. There are of two kinds of desert-dwellers:*

- *Nomadic communities who move from place to place, are predominant in the desert.*

The Bedouins and the Tuaregs are some of the better-known nomadic tribes of the Sahara.

- *Settled communities live permanently near water sources.*

Nomadic tribes - Bedouins and Tuaregs

• *Nomadic tribes are pastoralists and wander from place to place looking for suitable grazing grounds for their domesticated animals.*

Nomadic tribes-Bedouins



- *The nomadic Bedouins are animal-herders and nurture their livestock which is usually camels or goats, but can also include sheep and cattle.*
- *Camels are their main source of food and are used extensively for transportation.*

Nomadic tribes-Tuaregs



- *Tuaregs inhabit a very large area of the Sahara.*
- *They are often called the “blue people” because they use an indigo dye to stain their clothes which rubs off on their skin.*

Nomadic tribes - lifestyle



Pics: Tents, milk products, woollen blanket, camel race

- *Nomads live in tents which can be easily transported on their livestock.*
- *The animals, which include, camels, donkeys, horses, sheep and goats, provide milk and dairy products, leather for a variety of products, and wool or hair for use as mats, carpets, clothes and blankets.*
- *On festive occasions camel races are organised, and oral poetry readings are a common art form.*

Settled communities-oases



- *In the dry arid desert, the wind sometimes removes sand causing depressions in the surface; in these hollowed-out areas underground water seeps to the surface, creating a fertile green area called oasis.*
- *Oases can be of many sizes, the Tafilalet oasis in Morocco is the largest Saharan oasis and covers about 13,000 sq. kms.*
- *Due to the availability of water, desert-dwellers form settled communities around an oasis.*
- *Water can be available on the surface or can be tapped using man-made wells.*
- *The water can be from underground springs, or from flowing rivers or rain that seeps into the ground.*
- *In Egypt the Nile River supplies water to one of the largest oases in the world supporting a settled community of people.*

Settled communities-agriculture



- *People and animals and plants gather around these oases as they are a reliable source of the basics needs of food, water and shelter.*
- *Irrigation allows the people who settle in and around oases to cultivate crops such as date palm, figs, olives, pomegranate and beans, and cereals such as barley and rice.*
- *The prized and world-famous Egyptian cotton is a product of these regions.*
- *Strong trees, such as date palms, are normally planted by these communities around the perimeter of the oasis, to protect the wells and agricultural crops from sand.*

Adaptations to desert



- *The clothing of desert dwellers is well-adapted to desert conditions.*
- *They cover their heads and wear heavy robes that are loose and facilitates air circulation.*
- *These robes are also long and full-sleeved for protection from sandstorms and dusty winds, heat and cold.*
- *The clothes are often white to reflect the scorching sunlight.*

Water scarcity

- *Desert communities often tap into underground aquifers to meet their water requirements for sustenance, agriculture, livestock and industry.*
- *Since aquifers take long to replenish, groundwater is used faster than it can be replaced and scarce water resources are depleted further.*

Development attracts lifestyle change



- Oil and minerals have been discovered in the Sahara Desert.
- The exploration and extraction activities for oil and minerals are transforming the Saharan landscape.
- The desert-dwellers are finding it difficult to retain their traditional lifestyle and occupations and are taking up new professions in industries such as oil, mining and tourism industries.

People of the desert show resilience and adaptability to overcome the most challenging of conditions.

Image sources:

1. Bedouins- <https://pixabay.com/photos/egypt-man-bedouin-desert-sheep-1003078/>
2. Tuaregs- <https://pixabay.com/photos/desert-morocco-bedouin-residents-171827/>
3. Tent: <https://pixabay.com/photos/desert-camp-morocco-nature-africa-171825/>
4. Milk product: <https://www.needpix.com/photo/786538/milk-milk-container-cow-milk-production-agriculture-nature-farm-cheese-cheese-dairy>
5. Woollen blanket: <https://pixabay.com/photos/wool-blanket-squares-colorful-627036/>
6. Camel race: <https://pixabay.com/photos/camel-race-algeria-desert-animal-836152/>
7. Oasis: <https://pixabay.com/illustrations/oasis-oases-nature-desert-sand-4701493/>
8. Agriculture: <https://pixabay.com/photos/outdoor-agro-industry-sky-nature-3125692/>
9. Desert clothing: <https://pixabay.com/photos/algeria-tassili-n-ajjer-sahara-2796203/>
0. Ore: <https://pixabay.com/photos/pyrite-pyrites-mineral-sulfide-345637/>

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Main Script	Resources	Life of tribal groups, Life of tribal groups

8. IQ_Making of a Desert

IQ-Making of a Desert

Notes to Teacher:

Teacher can encourage the students to come out with as many answers as possible before giving out the correct answer/answers.

Please have maximum number of students answer each question, to ensure engagement and participation.

1. This ancient painting was found in a cave in the Sahara Desert.



a) What does it show?

Suggested answers

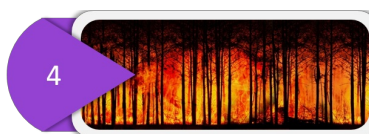
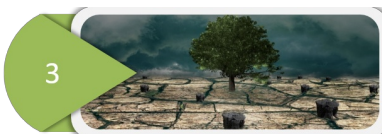
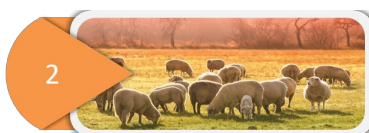
A hunting scene with giraffes and deer

b) What do you think this ancient picture of giraffes and deer means?

Suggested answers

- That giraffes and deer roamed in the Sahara region many thousands of years ago.
- Since these animals can survive only in a fertile green region, the Sahara was once lush with vegetation and abundant water.
- It became a dry, arid water-scarce region after these paintings were created.

2. a) Looking at these pics can you suggest why a fertile land loses vegetation?



Pics: Climate change, over-grazing, deforestation, fire

Suggested answers

Some causes of loss in vegetation, natural or due to human activity, are:

- Climate change
- Over-grazing
- Deforestation
- Fire

b) Why do you think this loss in vegetation can make a region dry, and barren?



Suggested answers

If soil loses its protective cover, it

- loses its nutrients
- ability to retain water when it rains.

3. In what way do you think humans can prevent a fertile region from becoming dry and arid?

Suggested answers



- Reforestation
- Restore soil health
- Managing grazing

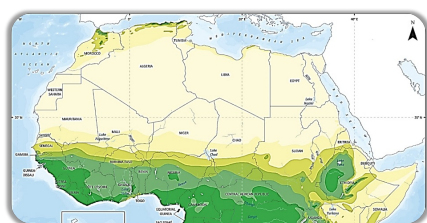
Image sources:

1. Cave Paintings - <https://pixabay.com/photos/sahara-tassili-cave-paintings-649445/>
2. Climate Change – <https://pixabay.com/photos/climate-change-drought-environment-4803653/>
3. Over-grazing – <https://pixabay.com/photos/animal-sheep-flock-of-sheep-meadow-3437467/>
4. Deforestation – <https://pixabay.com/photos/wood-cutting-bale-pine-forest-3662510/>
5. Forest Fire - <https://pixabay.com/illustrations/forest-fire-forest-climate-change-3836834/>
6. Climate Change - <https://www.piqsels.com/en/public-domain-photo-svqzc>
7. Sand – <https://pixnio.com/nature-landscapes/sand-dunes/texture-wasteland-sand-dune-wave-beach-desert-sand>
8. Planting - <https://pixy.org/1776708/> - Attribution – Pixy.org
9. Forest fire- https://www.flickr.com/photos/ervins_strauhmanis/9554405492
0. Grazing - <https://pixabay.com/illustrations/goat-ruminant-horns-fence-5779962/>

Time to teach	Asset Type	Theme	SubTheme
7 Minutes	Inquisitive Questions	Resources	Degradation of soil , Degradation of soil

9. MS_Changing Landscape of Sahara**Sahara - a Changing Landscape**

Note to the teacher: The following asset can be introduced with the statement, “The Sahara Desert is undergoing changes due to development in the region. Let us see what these changes are and what impact it has on the land and its people.”

Natural resources

- The Sahara Desert, so vast that it covers most of North Africa, is rich in natural resources.

- Large quantities of oil and natural gas have been discovered under the desert surface, especially in Algeria, Egypt and Libya.
- Morocco has a significant amount of phosphates from which phosphorus is obtained and iron ore is available in large quantities in Algeria and Mauritania.
- Manganese has been found in significant quantities in the Sahara.
- Substantial quantities of uranium, used in nuclear plants, have also been found across the desert.

Discovery of underground water



- Large underground reserves of water have also been discovered while exploring for other resources.
- However much of these are hard to reach and too expensive to extract for use.

International attention

- The discovery of oil, uranium, iron, phosphorous and other minerals which have great economic value and are in demand across the world, has drawn international attention to the Sahara desert.
- Investments have been made in these regions and modern technology and communications have brought changes to remote, widely scattered locations.

Changes in the desert landscape



- Investments have brought modernity and changes to the desert.
- The ancient skyline that once displayed the minarets of mosques is now dominated by soaring glass-fronted commercial buildings.



- The Sahara is enormous with many areas completely inaccessible.
- This makes transportation of men and materials difficult, requiring changes in infrastructure.
- Roads have been built across traditional caravan routes and paths once trodden by camels.
- Trade continues, but traded products such as salt and dates, are transported by rushing trucks instead of plodding camels.
- Transportation is now faster and easier than it was earlier but increased contact with the outside world is threatening the traditional nomadic lifestyle.

Changes to lifestyle

- Development of the desert has brought positive changes in infrastructure, but opportunities for employment of local people have been few and far between.
- Desert-dwellers are leaving their centuries-old lifestyle of nomadic pastoralism and moving to cities to take up jobs in the oil and mining industries. Fiercely independent warriors, like the Tuaregs, now act as guides in the tourism industry.

Changes to environment



- Modern development has resulted in a growing demand for water. This is being extracted from underground aquifers that have taken thousands of years to fill, and is a precious non-renewable resource. This contributes to water-scarcity in a region already severely water-deficient.
- Mining and extraction activities also degrade the grazing land of the nomadic communities threatening their way of life.
- Renewable energy projects based on solar and wind energy are being explored.

The Sahara Desert is being developed at a cost to traditional lifestyles and the environment.

Image sources:

- Africa physical map - <https://www.flickr.com/photos/nglklm/5257878245> – Attribution - **Nathan Laurell**
- Well - <https://www.flickr.com/photos/68166820@N08/49729911222/in/photostream/> - Attribution - **cattan2011**
- Minarets – <https://picryl.com/media/sunset-view-of-cairo-egypt-skyline-showing-minarets-and-temple-spires-exact-c9d2dd>
- Construction skyline - <https://pixabay.com/illustrations/desert-city-columnar-sand-sky-2318399/>
- Road through desert - <https://pixabay.com/photos/barren-desert-dry-hot-landscape-1868260/>
- Truck - <https://pixabay.com/photos/chile-atacama-desert-road-dry-4614397/>
- Water Demand - <https://pixabay.com/photos/africa-people-of-uganda-uganda-2665100/>
- Lone bush - <https://pixabay.com/photos/desert-live-dry-nature-plant-4376898/>

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Main Script	Resources	Life of tribal groups, Life of tribal groups

10. QA_Recap on Sahara

Recap on Sahara

Note for the teacher: The teacher may discuss the answers for the questions A to D using the PPT.

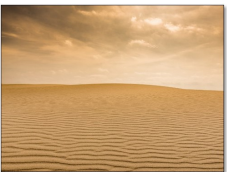
The rest may be given as a home assignment if time is too short.

A. Fill in the Blanks



1. The Sahara Desert is located in the _____ part of Africa. (*northern*)
2. There are 2 kinds of deserts. These are _____ and _____ deserts. (*hot and cold*)
3. The desert climate is _____. (*arid*)
4. The Sahara is a _____ kind of desert. (*hot*)
5. The two desert tribes of the Sahara are _____ and _____. (*Bedouins and Tuaregs*)
6. A lush, fertile piece of land in a hot desert is called _____. (*oasis*)
7. In a desert, moisture _____ faster than it collects. (*evaporates*)
8. In the Sahara the skies have no _____. (*clouds*)

B. Choose the correct answer



1. The climate in a hot desert is

- A. Arid and humid
- B. Arid with scanty rainfall
- C. Hot and humid
- D. Dry with a long rainfall season

(*Ans: B. Arid with scanty rainfall*)

2. Vegetation in the Sahara includes

- A. Grasses, acacia and coconut palms

B. Cotton, date palms and cypress

C. Cactus, ferns and date palms

D. Date palms, acacia and cactus

E. *(Ans: D. Date palms, acacia and cactus)*

3. A commodity traded through ancient caravan routes criss-crossing the desert

A. Chillies

B. Iron ore

C. Salt

D. Oil

(Ans: C. Salt)

4. The traditional settled population of the Sahara live

A. Near an oasis

B. Close to urban centres

C. Near pasture land

D. Near caravan trading routes

(Ans: A. Near an oasis)

5. Oil has been discovered in the Sahara in

A. Mauritania, Libya and Chad

B. Libya, Algeria and Egypt

C. Egypt, Liberia and Kenya

D. Libya, Niger and Chad

E. (Ans: B. Libya, Algeria and Egypt)

C. Identify the images (*Image, clue, answer*)

1. **Desert tribe - TUAREG**



2. **Modern desert activity – OIL DRILLING**



3. **World-famous fabric – EGYPTIAN COTTON**



4. **Yields a sweet fruit – DATE PALM**

D. Answer briefly

- 1. Name any 8 countries touched by the Sahara Desert.** (*Ans: Any 8 of the following: Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Sudan, Tunisia or Western Sahara.*)
- 2. The desert is more than just sand; what else can be seen on the desert surface?** (*Ans: Gravel plains and elevated plateaus*)
- 3. What discoveries drew international attention to the Sahara?** (*Ans: Oil, and minerals like iron, manganese, phosphorous and uranium*)
- 4. Describe how an oasis is formed.**

(*Ans: When the wind blows away sand, a shallow depression is sometimes formed on the desert surface and the underground water seeps to the surface. This creates a fertile area where plants thrive.*)
- 5. How do the traditional heavy robes of desert dwellers help them combat the harsh desert conditions?**

(Ans: Protects them against dust storms and hot winds)

E. Give reasons

1. Why the Sahara Desert becomes scorching hot during the day and extremely cold at night.

(Ans:

- During the day the sun's energy heats the sand and rocks which radiate the heat, resulting in extremely high day temperatures.*
- However, at night the sand releases its heat into the atmosphere, which rapidly dissipates, since there is no water vapour in the dry desert air to trap and store the heat.*
- Since the heat energy is lost suddenly resulting in extremely low night temperature.)*

2. Why modern development activity does not necessarily benefit the traditional desert dwellers.

- Loss of lifestyle – Traditional nomadic lifestyle has been affected, grazing grounds have been lost,*
- Increased accessibility – Infrastructure such as roads have been built over old camel caravan routes. These roads have made remote areas accessible, and trade is done through trucks instead of camels.*
- Water depletion– mining and extracting industries require water and are drawing heavily on the limited water resources of the desert*

Image sources:

- Africa physical map - <https://www.flickr.com/photos/nglklm/5257878245> – Attribution - **Nathan Laurell***
- Sahara - <https://pixabay.com/photos/desert-sand-dunes-landscape-1654439/>*
- Tuareg- <https://pixabay.com/photos/desert-morocco-bedouin-residents-171827/>*
- Oil drilling - <https://pixabay.com/photos/oil-oil-rig-industry-oil-industry-3629119/>*
- Linen - <https://pixabay.com/photos/pillows-linen-sheets-bed-white-820149/>*
- Date palm tree- <https://pixabay.com/photos/date-palms-palm-trees-plamenfrucht-532634/>*

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Assessments	Resources	Natural Environment , Life of tribal groups, Degradation of soil , Climate , Natural Environment , Life of tribal groups, Degradation of soil , Climate

11. MS_Location and Climate of Ladakh

Location and Climate of Ladakh

Notes to the teacher: The teacher can begin the asset with the following statement: “Let us now learn all about a cold desert located in India.”

Ladakh desert-cold and dry



- Ladakh is a high-altitude cold desert. It lies in the Great Himalaya mountains, which are the highest and most northern part of the Himalayan range.
- Like all deserts Ladakh is dry with scanty rainfall. Here too the water evaporates faster from the surface than it collects.
- But while most deserts are extremely hot, Ladakh is one of the highest and coldest regions of the world. In fact, Drass in Ladakh is one of the coldest inhabited places on earth.
- ‘Ladakh’, originating from two words ‘La’ meaning ‘mountain pass’ and ‘Dak’ meaning ‘country’, is described as ‘the land of high passes’.

It is also referred to as ‘Khapa-Chan’ or the snow-land.

Location of Ladakh



- Ladakh is a Union Territory located on India’s northern boundary with the Union

Territory of Jammu & Kashmir to its west.

- It is bound by the Karakoram Range in the North, and the Zaskar Range in the South.

Climate – Arid and Cold

- Ladakh's harsh climatic conditions are largely due to its location and elevation.
- It is dry and arid since it is located on the rain-shadow side of the Himalayas.
- Due to this location, the large volumes of rainwater that the annual monsoon delivers to other parts of India, does not reach Ladakh.
- With the annual rainfall as low as 10 cms, the region is considered a desert biome.
- The high elevation of Ladakh, varying from 3000 m at Kargil to over 8000 m at Karakoram, contributes to the harsh climatic conditions.
- It is extremely cold, windy and dry, with sunlight that is harsh and intense since the air is thin at such high altitudes.

(Note to the teacher: The teacher can explain that the large Himalayan mountains prevent the rain-laden monsoon clouds that deliver large quantities of rain to the rest of India, from crossing them and dropping rain on Ladakh.)

Climate – Short Summers and Long Freezing Winters

- There is great variation in the summers and winters of Ladakh
- Summers are short and the day temperatures are just higher than 0°C while night temperatures are below -30°C .
- But winters are long and freezing with temperatures staying mostly below -40°C . It is windy, and snowstorms and avalanches are common.

Sunburn and Frostbite



- The unusual climatic conditions of intensely strong sunlight and freezing cold can give rise to odd situations.
- It is said if a person were to sit in the sunlight with part of his or her body in the shade, it is possible to suffer from sunstroke and frostbite at the same time.

Topography



- Ladakh has mainly high, windswept plains and deep valleys.
- Among the many rivers that flow through Ladakh, the Indus River is the main river. As the rivers flow they create deep rocky gorges and fertile valleys as it flows on its journey to the Arabian Sea.

(Note to the teacher: The teacher can explain that a gorge is a deep, narrow valley with steep sides formed over time, by a river cutting through rock.)

Glaciers of Ladakh



- Many glaciers lie in the Ladakh region. These are the source of several Himalayan rivers and also supply water to the rivers during the dry season.
- Siachen and Gangri glaciers in Ladakh are well-known.

Mountain Passes of Ladakh



- Ladakh, the land of mountain passes, is true to its name.
- Several of these natural pathways between the high mountain ranges, that were used for both trade and invasions, exist in the Ladakh region.
- Some prominent passes include the Zoji La, Khardung La, Chang La, and the Baralacha La.

Leh



- Leh is the capital city of Ladakh. High-altitude roads connect Leh to the rest of India.
- The capital city is connected to the Kashmir valley through the Zoji La Pass by National Highway 1 A and is the lifeline of the Ladakh region.
- Leh is also connected by air to the rest of India.
- The Manali - Leh highway crosses four passes, Rohtang la, Baralacha la, Lungalacha la and Tanglang la. This highway can be used only between July and September when the road is clear of snowfall.

Image sources

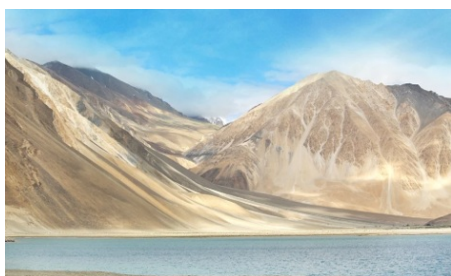
1. Ladakh - <https://pixabay.com/photos/nature-snow-mountain-landscape-3093469/>
2. India Map – Made using PPT shapes
3. Ladakh Map - <https://www.flickr.com/photos/nevilzaveri/4974377620> - Attribution - **nevil zaveri**
4. Sunburn and frostbite - <https://pixabay.com/photos/trees-birch-wood-snow-landscape-5985632/>
5. Windswept plains and valleys - <https://pixabay.com/photos/markha-valley-ladakh-hiking-4085518/>
6. Rivers- <https://pixabay.com/photos/nagold-dam-northern-black-forest-1340110/>
7. Glaciers - <https://pixabay.com/photos/nature-snow-panorama-ice-waters-3067704/>
8. Mountain passes -<https://www.flickr.com/photos/kartikeyakaul/5919543828> – Attribution - **Kartikeya Kaul**
9. Leh - <https://pixabay.com/photos/nature-leh-lad-ladakh-kashmir-5991529/>

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Main Script	Resources	Climate , Climate

12. IA_Ice Stupas of Ladakh

Ice Stupas of Ladakh

Agriculture and water scarcity in Ladakh



- In Ladakh agricultural activities are at its peak in spring;
- Barely any cultivation takes place in winter when the temperature is below freezing and the ground frozen and solid;
- But spring is also the time of highest water scarcity;
- Melted water from glaciers and snow, which is the main source of water, does not arrive till summer.

Artificial glaciers



- Sonam Wangchuk, well-known innovator and engineer, created artificial glaciers or ice stupas next to villages in winter, using water from mountain streams.
- This water would otherwise flow unused, since there are no farming activities during winter.
- He was inspired by age-old traditional practices as well as the work of Chewang Norphel, a Ladakhi engineer, who had created an artificial glacier, but at a place difficult to access by the villagers.

The innovation

- To create the ice stupas, water is piped to the site from upstream, and sprayed into the air.
- This freezes in the cold Ladakhi winter temperatures, slowly forming a huge cone that stored enormous quantities of water.
- As temperatures rise in spring the cone slowly melts, providing water for irrigation until the glacial meltwaters start flowing.
- Wangchuk froze it in the shape of a cone which looked like the Buddhist stupa or shrine; the shape ensures that melting is as slow as possible.
- These stupas are also now an important tourist attraction in Ladakh.

Note to the teacher: *The attached video showing the ice stupas of Ladakh can be shown to the students.*

Video time: 1.04 mins

(Please download the video).

Video source:

Video reference - <https://www.youtube.com/watch?v=nBjvsoVHdA0> – Attribution – Inspirit IAS

Image sources:

1. Ladakh - <https://pixabay.com/photos/ladakh-mountains-river-travel-2818861/>
2. Ice Stupa – Screenshot taken from - <https://youtu.be/nBjvsoVHdA0?t=190> - – Attribution - Inspirit IAS

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Interesting Asides	Resources	Water Scarcity , Water Scarcity

13. MS_Flora and Fauna of Ladakh

Flora and Fauna of Ladakh

Notes to the teacher:

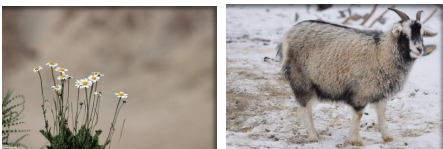
The teacher can begin the asset with the following statement: "Let us see how many plants and animals can be found even under harsh cold desert conditions, and how they survive by adapting."

Inhospitable landscape



- The beautiful landscape of Ladakh is dominated by glaciers and rock faces that are bare and lacking in vegetation.
- Most of the flora is sparse and scattered on this barren plateau due to extreme aridity.

Challenges to life in the desert



Plants and animals struggle to live in the rugged cold desert.

The dry and cold Himalayan region has given rise to a unique community of flora and fauna that is diverse and has adapted to suit the extreme climatic conditions, such as:

- **Water scarcity**
- **Freezing cold**
- **Strong winds**

Flora of the cold desert

Grasses and shrubs



Pics: Grasses, shrubs

- The vegetation in high-altitude Ladakh is thin and scarce due to lack of water.
- It consists mainly of grasses, stunted shrubs and bushes on which the animals graze.

Trees***Pics: Apricots, walnuts***

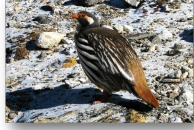
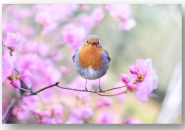
- However, the vegetation is greater along the rivers and streams, in the narrow valleys, on mountain slopes and near human settlements where irrigation is practiced.
- Willow, poplar, apricot and walnut trees thrive under these climatic conditions. The best quality cricket bats are made from the wood of the willow tree which is in abundance in Ladakh.
- In summer the valley is a riot of colour when the fruit trees such as apple, walnut and apricot come into bloom.
- The region is rich in medicinal and aromatic plants.

Fauna of the cold desert (mammals)

- Ladakh has a number of rare animals unique to the region.
- These include ibex, yaks, wild asses and the rarely-seen snow leopard.
- Wild goats and sheep and unique dogs are found here.
- Many animals are endangered due to change in habitat and human activity. Among these is the Tibetan antelope (or *Chiru*) which is prized and hunted for its light-weight and warm wool known as *shahtoosh*. This wool allows the animal to survive in the freezing

conditions of the region, but is now the reason for being hunted by humans.

Fauna of the cold desert (birds)



Pics: Robin, Tibetan snowcock

- Despite the aridity of the region Ladakh is home to a great diversity of birds.
- Many migratory birds come from the warmer parts of India to spend the summer in Ladakh.
- The birds found in Ladakh include robins, redstarts, bar-headed geese, Tibetan snowcocks, black-necked cranes, golden eagles and the hoopoes.

Flora and fauna adaptations

- To survive the extreme cold and scarcity of water, plants and animals are forced to make certain adaptations.
- The roots of some plants go deep into the ground to tap into scarce water sources. To reduce surface evaporation of precious water, the leaves are small.
- Animals have dense fur that keep them warm; long and bushy tails which help in keeping balance on steep terrain, small ears to minimize heat loss and large nasal cavities that help them breathe the thin mountain air.

(Note to teacher:

Teacher can explain how diverse flora and fauna have survived by adapting to the harsh, inhospitable environment of the cold desert.

Some examples include:

FLORA

- *Small leaves reduce water loss due to evaporation*
- *Roots go deep in search of scarce water*

FAUNA

- *Dense fur to beat the intense cold (yak)*

- *Long tail to maintain balance in uneven terrain (snow leopard)*
- *Large nostrils to get maximum oxygen in high altitude thin air (yak)*
- *Small ears reduce heat loss in the freezing cold (lynx).)*

Diverse flora and fauna can be found even in the harsh, inhospitable environment of the cold desert.

Image sources

1. Mountains - <https://pixabay.com/photos/pangong-tso-lake-high-grassland-lake-1650946/>
2. Flowers - <https://pixabay.com/photos/flower-ladakh-dessert-natural-1646746/>
3. Goat - <https://pixabay.com/photos/goat-cashmere-goat-himalayas-1160961/>
4. Grasses - <https://pixabay.com/photos/mountains-mountain-range-valleys-5558476/>
5. Shrubs - <https://pixabay.com/photos/bushes-grass-landscape-grasses-2928444/>
6. Apricot - <https://pixabay.com/photos/apricots-apricot-tree-fruit-yellow-824626/>
7. Walnuts - <https://pixabay.com/photos/nuts-tree-nuts-walnut-shell-nature-3747483/>
8. Ibex - <https://pixabay.com/photos/nubian-ibex-young-desert-israel-4764738/>
9. Snow Leopard - <https://pixabay.com/photos/snow-leopard-predator-big-cat-1972724/>
0. Yak - <https://pixabay.com/photos/yak-pangong-lake-pangong-tso-lake-2674346/>
1. Mountain Goat - <https://pixabay.com/photos/manali-himachal-goat-snow-rohtang-1112833/>
2. Tibetan Antelope - <https://www.flickr.com/photos/150012178@N06/50069098262> – Attribution - **Acabashi**
3. Himalayan Sheep - <https://pixabay.com/photos/sheep-mountain-nature-animals-919072/>
4. Robin: <https://pixabay.com/photos/bird-robin-spring-flowers-perched-2295436/>
5. Tibetan snowcock: <https://www.flickr.com/photos/mckaysavage/497764784/in/photolist> - **Mckaysavage**

Time to teach	Asset Type	Theme	SubTheme
7 Minutes	Main Script	Resources	Types of wild life, Types of wild life

14. SA_Desert Life

Desert Life

Note to teacher:

The activity can be introduced with these words, “Let us now have an activity through which you can demonstrate the location of the Sahara and Ladakh Deserts, and describe the climate and lifeforms of the two deserts”.

**AIM:**

The students will mark the Sahara and Ladakh Deserts, and describe the climate and lifeforms of the two places.

MATERIAL REQUIRED:

Each group will require

1. Text book for reference
2. One half of chart paper
3. Pencil and felt pens

SETTING FOR THE ACTIVITY

Indoor/group activity

TYPE OF ACTIVITY:

Chart activity

PROCEDURE:

A few days before the activity:

- Teacher discusses the activity with the class.

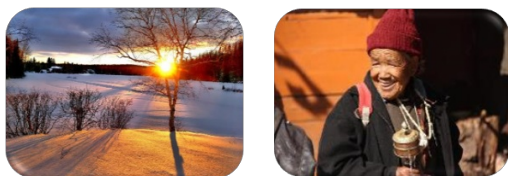
- Students are divided into eight groups.
- Teacher will assign 4 groups to work on Sahara desert, and the other 4 groups to work on Ladakh desert
- Teacher will also assign the topics to each group so that they are well-prepared for the activity.
- Topics are as follows

Sahara-



1. Location of Sahara in Africa and countries touched by the Sahara desert. Students can draw outline of Africa and mark out the countries and places of significance around it.
2. Climate- explaining why days are hot and nights freezing cold in the Sahara.
3. Flora and fauna adaptations (*Suggestion- cactus and camel can be used to explain how flora and fauna have adapted to survive.*)
4. Lifestyle of Sahara dwellers

Ladakh-



5. Location of Ladakh in Northern India. Students can draw North India and places of significance around it.
6. Climate- explaining why Ladakh is an arid region.
7. Flora and fauna adaptations (*Suggestion- shrubs and grasses, and yak or snow-leopard can be used to explain how flora and fauna have adapted to survive.*)
8. Lifestyle of Ladakh-dwellers

On the day of the activity:

- The teacher introduces the chart activity by showing the PPT.
- Groups will work to complete the charts assigned to them.
- Upon completion, the chart papers can be explained by one representative of each group.
- These can then be displayed on the class notice-board grouping Sahara charts together and Ladakh charts together.
- After the chart activity, the worksheets are distributed to the students.

OBSERVATION:

During the follow-up activity the teacher plays a supportive role, guiding only where necessary.

Teacher goes around the class observing each team's work and correcting if required.

PRECAUTIONS:

- Please use latest map of India

TROUBLESHOOTING:

- When the PPT is being shown, care should be taken to pause the PPT so that the slides with follow-up questions and answers are not shown before the activity is completed.

If time permits, this FOLLOW-UP section in the PPT may be shown after the students complete answering the questions.

CONCLUSION:: The students mark the location of the Sahara and Ladakh Deserts, and describe the climate, flora and fauna and lifestyle of people living there.

FOLLOW-UP :**Note to the teacher:**

- *After the students have finished the chart activity the teacher gives the following*

questions and asks the students to write the question and their answers in their note books.

- A word puzzle is also given. Teacher can decide whether to ask the students to do either or both follow-up activities.*
- Before the students start answering the questionnaire, the teacher discusses the questions and lets them come up with their answers.*

A. ANSWER BRIEFLY

Q.1. From which country does the Indus River enter Ladakh and to which country does it drain into from Ladakh.

Ans: The Indus enters India through Pakistan and leaves the country through Tibet/China.

Q.2. As we have just seen, most of the vegetation and animals we find in these two regions are different from any found elsewhere. Give reason.

Ans: The extreme climatic conditions in the desert region has forced animals and plants to adapt to survive. These adaptations have created a unique plant and animal life that is only found in these desert regions.

B. WORD PUZZLE

Unscramble the following

1. GNARGI
2. GURTAE
3. HEL
4. SCUTAC
5. DSINU
6. KAY
7. RMAKAAKOR
8. MAGOPS

Ans: GANGRI, TUAREG, LEH, CACTUS, INDUS, YAK, KARAKORAM, GOMPAS

Image sources

1. Ladakh - <https://pixabay.com/photos/ladakh-traveler-travel-nature-leh-2300904/>
2. Desert – <https://pixabay.com/photos/abu-dhabi-emirates-desert-arabic-3478986/>
3. Day in desert - <https://pixabay.com/photos/desert-sand-barren-dry-arid-790640/>
4. Night in desert - <https://pixabay.com/illustrations/moon-moonlight-night-sky-dark-2372573/>
5. Tuareg - <https://pixabay.com/photos/morocco-bedouin-turban-profile-3533395/>
6. Climate - <https://pixabay.com/photos/trees-birch-wood-snow-landscape-5985632/>
7. Ladakhi - <https://pixabay.com/photos/woman-ladhaki-woman-old-woman-1070477/>

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Resources	Natural Environment , Natural Environment

15. MS_People of Ladakh**People of Ladakh****Origin*****How is it that they look so similar?***

(Notes to Teacher: Teacher can explain why the Ladakhis look different from the rest of Indians.

- *The ancestors of present-day Ladakhis came from Tibet and Central Asia.*
- *This connection is visible in the faces and physique, and even the clothes they wear, which are different from those of the rest of India.)*

Religions



- The people of Ladakh follow Buddhism or Islam.
- An attractive feature of the region are the Buddhist monasteries, or 'gompas', that dominate the mountainous landscape of Ladakh.
- These are places of worship for the Buddhists, and annual festivals are joyful celebrations with ritual chanting and colourful mask dances.
- Many monasteries have splendid examples of religious art.



- *Some of the better-known monasteries are the large and popular Hemis, the beautiful Thiksey, the serene Shey and the ancient Lamayuru gompas.*

Agriculture



- Agriculture activities start in spring and goes on till end of summer.
- Traditionally the land is irrigated with water from melted snow and ice.
- Barley is a staple crop, while vegetables such as potatoes, beans, peas and turnip are also cultivated.

Rearing of animals



- Livestock plays an important role in Ladakh.
- Animals such as yaks, sheep and goats, are reared.
- Dairy products such as butter and cheese are obtained from yak's milk, while sheep and goat hair is made into woollen clothing.
- The animals are also reared for their meat and leather products.

Winter activities



- Agriculture is not possible in winter season since the ground is hard in the sub-zero temperatures.
- During these harsh months the people of Ladakh spend their time in social and religious gatherings.
- Festivals are celebrated, and ritual ceremonies are conducted.

Cultural activities



- Ladakhis enjoy playing a version of polo using local ponies.
- Archery competitions are conducted with great enthusiasm especially in summer.

Women of Ladakh



Women of Ladakh are very hardworking making significant contributions not only in the home and in farming, but in running small businesses as well.

Tourism



- Tourism is a major source of revenue for the people of Ladakh.
- The dramatic and breath-taking landscape of Ladakh attracts many domestic and international visitors who are drawn by the majestic mountains, glaciers, valleys, meadows and beautiful lakes.
- Ladakhis cherish their cultural heritage and tourists are attracted by the beautifully located monasteries or 'gompas', diverse customs, rituals and festive celebrations.
- Tourists seeking adventure sports enjoy activities like white water rafting, mountaineering and paragliding.
- The tourism industry creates employment opportunities and generates income having a socio- economic effect on the region.

The lives and livelihood patterns of the people of Ladakh are deeply intertwined with the climatic conditions of the region.

Image sources

1. *Ladakhi Woman* - https://commons.wikimedia.org/wiki/File:Woman_from_Ladakh_edit1.jpg – Attribution - Steve Evans
2. *Tibetan Woman* - <https://pixabay.com/photos/woman-elderly-tibet-nepal-portrait-1749355/>
3. *Mountaintop Monastery* - <https://pixahive.com/photo/a-monastery-on-mountain-top/>

4. *Mask Dance* - <https://www.flickr.com/photos/krsaurabh/40900365083/in/photostream/> - Attribution - **Saurabh Chatterjee**
5. *Art* - <https://pixabay.com/photos/buddhist-buddhism-temple-monastery-315294/>
6. *Hemis Monastery* - <https://www.flickr.com/photos/madpai/249373551> – Attribution - **Madhav Pai**
7. *Thiksey Monastery* - <https://pixabay.com/photos/monastery-ladakh-india-397885/>
8. *Shey Monastery* - <https://www.flickr.com/photos/krayker/2580062828/in/photolist> – Attribution - **Karunakar Rayker**
9. *Lamayuru Monastery* - <https://www.flickr.com/photos/rietje/218552332> – Attribution - **Rita Willaert**
0. *Sowing* - <https://www.flickr.com/photos/axelrd/10718464245/> - Attribution - **Axel Drainville**
1. *Livestock* - <https://pixabay.com/photos/ladakh-himalaya-mountains-nature-5916077/>
2. *Festivals* - <https://pixabay.com/photos/ladakh-india-tibet-trumpet-489297/>
3. *Polo* - <https://www.flickr.com/photos/albedo20/29623299080/in/photostream/> - Attribution - **albedo20**
4. *Archery* - <https://www.flickr.com/photos/albedo20/29803668152/in/photostream/> - Attribution - **albedo20**
5. *Women Working* - <https://www.flickr.com/photos/sandeepachetan/11875614564> - Attribution - **sandeepachetan.com travel photography**
6. *Landscape* - <https://pixabay.com/photos/ladakh-reflection-mountains-sky-6051984/>
7. *Mask Dance* - <https://www.flickr.com/photos/krsaurabh/40900365083/in/photostream/> - Attribution - **Saurabh Chatterjee**
8. *Paragliding* - <https://pixabay.com/photos/gerlitz-glacier-mountains-190955/>

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Resources	People living in Ladakh, People living in Ladakh

16. DD_Textiles from the Desert

Textiles from the Deserts

Summer clothing



- In summer when the temperatures are high we like to wear light clothes that allow for air circulation.
- Of these cotton fabric is best suited for high temperatures.

Egyptian cotton



- Among the world's finest and sought-after cotton fabrics is the soft Egyptian cotton.
- This is made from cotton grown in Egypt which has the perfect climate required to make high quality cotton.

Winter clothing



- In winter we require clothing that will protect us from the cold and will keep us warm.
- Wool from sheep and goats can be fashioned into clothes ideal for winter.

Woollens from Ladakh



- The nomadic pastoralists of Ladakh rear animals such as yaks, sheep and goats for their wool which keeps them warm during the harsh winters.
- This wool is used to create woollens which are sold and used all over the country.

Image sources

1. Cotton Clothes - <https://pixabay.com/photos/desert-camels-arab-mauritania-733728/>
2. Cotton Field - <https://www.flickr.com/photos/kimberlykv/6288224329/in/photostream/>
– Attribution - **Kimberly Vardeman**
3. Linen - <https://pixabay.com/photos/pillows-linen-sheets-bed-white-820149/>
4. Desert Night - <https://pixabay.com/photos/desert-night-starry-sky-person-2897107/>
5. Sheep - <https://pixabay.com/photos/sheep-ram-lamb-animal-nature-farm-1039661/>
6. Woollen Yarn - <https://pixabay.com/photos/wool-shop-hobby-craft-store-2742119/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Day-to-day Relevance	Resources	Land as a Resource, Land as a Resource

17. MS_Nature vs Development in Ladakh

MS_Nature vs Development in Ladakh

Changes in Ladakh vs Living with nature



- Change in the form of modernisation has come to Ladakh.
- Development and tourism has affected the environment negatively. Sewage, increased use of energy resources for needs such as heating and transportation, and increased use of water, have put great stress on the environment.
- But the majority of Ladakh's population follow a traditional, centuries-old lifestyle which is finely balanced with nature.

Traditional lifestyles- in balance with nature



- Since resources such as water and fuel are scarce, they are treated with care and respect as precious commodities. For instance, crops that require less water are cultivated.

There is no waste and nothing is discarded.

The people of Ladakh have traditionally lived with respect for nature; modern development has come with a cost to the environment and to their traditional lifestyles

Image Sources

1. Tourism in Ladakh - [https://commons.wikimedia.org/wiki/File:Ladakh_\(14686912113\).jpg](https://commons.wikimedia.org/wiki/File:Ladakh_(14686912113).jpg) - Christopher Michel
2. Tourism - [https://commons.wikimedia.org/wiki/File:Ladakh_\(14480635218\).jpg](https://commons.wikimedia.org/wiki/File:Ladakh_(14480635218).jpg) – Attribution - Christopher Michel
3. Lake - <https://pixabay.com/photos/lake-mountain-ladakh-india-2594425/>
4. Water, Power - <https://pixabay.com/photos/energy-inspiration-ideas-planet-3073847/>
5. Water - <https://pixabay.com/photos/hands-water-wash-color-source-4903050/>
6. Barley - <https://pixabay.com/photos/barley-field-in-the-field-harvest-4320682/>
7. Mountains and lake - <https://pixabay.com/photos/ladakh-reflection-mountains-sky-6051984/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Resources	People living in Ladakh, People living in Ladakh

18. SA_Game Time

Game Time

Note to teacher:

The activity can be introduced with these words, “Let us now have an activity through which you can demonstrate the diversity in creatures of hot and cold deserts”.

AIM: This game will enable students to understand the lifeforms in the desert.

MATERIAL REQUIRED:

Teacher can provide each student with:

- 1 no. index card of size 10 cm x 15 cm.

SETTING FOR THE ACTIVITY

Indoor/group activity

TYPE OF ACTIVITY:

Game

PROCEDURE:



A few days before the activity:

- The teacher creates a list of desert creatures.
- The number of creatures will be the same as total number of students.
- Suggested desert creatures:

Ø **Mammals**- yak, camel, ibex, foxes, antelope, wild goats, wild sheep, horses, hyenas, jackals,

Ø **Birds**- raven, Tibetan woodcock, eagle, redstarts, hoopoe, vulture, turkey, ostrich, robin,

Ø **Reptiles and insects** – scorpion, snakes, lizard,

- Each child is assigned one creature.
- The student has to list three characteristics of the assigned creature (without naming the creature) on a plain sheet of paper or index card of 10 cm x 15 cm.

Eg – For ‘camel’ the characteristics can be

1. Animal of hot desert
2. Has double set of eyelashes to keep away the sand
3. The hide is used for making water bottles

- The children can be encouraged to study the various creatures found in hot and cold deserts.

On the day of the activity:

- Class can be divided into four groups.
- Teacher discusses the activity – a competitive guessing game - with the class.
- Teacher will make three columns on the board with the headings – Mammals, Birds, and Reptiles and Insects.
- The cards prepared by each student will be placed/pasted under the appropriate heading,
- The teacher will read out the characteristics and will give each group a chance to answer, turn by turn.
- Scoring - if a group answers at first try, full marks are awarded; on second chance half the marks are awarded. (Suggestion: Each question can be assigned 2 points on first try and 1 point on second try.)

After the game is completed, the follow-up activity is given for each child to complete individually.

OBSERVATION:

During the game the teacher ensures discipline is maintained.

PRECAUTIONS:

NA

TROUBLESHOOTING:

NA

CONCLUSION: The students gain a better understanding of desert creatures by playing this game.

FOLLOW-UP ACTIVITY:

Note to the teacher: After the students have finished the game the teacher asks the students to do the following activity in their note book.

If time is short, it can be given as a homework assignment.

Write a poem or short paragraph on any chosen desert creature.

Image sources:

1. Ibex - <https://pixabay.com/photos/nubian-ibex-young-desert-israel-4764738/>
2. Yak - <https://pixabay.com/photos/yak-pangong-lake-pangong-tso-lake-2674346/>
3. Mountain Goat - <https://pixabay.com/photos/manali-himachal-goat-snow-rohtang-1112833/>
4. Tibetan Antelope - <https://www.flickr.com/photos/150012178@N06/50069098262> – Attribution - **Acabashi**
5. Himalayan Sheep - <https://pixabay.com/photos/sheep-mountain-nature-animals-919072/>
6. Eagle - <https://pixabay.com/photos/bald-eagle-bird-in-flight-bif-usa-3545609/>
7. Fennec Fox - <https://pixabay.com/photos/desert-fox-fennec-fox-zoo-animal-5324789/>
8. Hyena - <https://pixabay.com/photos/animal-wild-hyena-africa-safari-4589652/>
9. Camel - <https://pixabay.com/photos/dromedary-camel-desert-490420/>
0. Tibetan Snowcock - [https://www.flickr.com/photos/mckaysavage/497764784/in/photolist - Mckaysavage](https://www.flickr.com/photos/mckaysavage/497764784/in/photolist-Mckaysavage)
1. Raven - <https://pixabay.com/photos/common-raven-raven-crow-snow-cold-3184260/>
2. Scorpion - <https://pixabay.com/photos/giant-scorpion-black-sand-namibia-1076314/>

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Resources	Distribution of wild life, Distribution of wild life

19. QA_Recap on Ladakh and Deserts

Recap on Ladakh and Desert Regions

A. True or False



1. Deserts have high humidity. (*FALSE – Deserts are dry and have very low humidity*)
2. Most of the Ladakh population follows Buddhism or Christianity. (*FALSE – most Ladakhis follow Buddhism or Islam*)
3. Ladakh and Sahara are sparsely populated. (*TRUE*)
4. Ladakh is dry because it is located in the rain shadow region of the Himalayas. (*TRUE*)
5. The name Ladakh indicates a land of mountain streams. (*FALSE – Ladakh means Land of mountain passes*)
6. All deserts are hot, dry, and have scanty vegetation. (*FALSE – Deserts can be hot or cold, dry and have scanty vegetation*)
7. Ladakh experiences freezing winds and very hot sunlight. (*TRUE*)
8. Fruit trees thrive in the valleys of Ladakh. (*TRUE*)
9. Indus is the most important of many rivers flowing through Ladakh. (*TRUE*)
10. Animals are reared for recreation in Ladakh. (*FALSE – Animals are reared for dairy products, meat and hides*)

B. Identify



Ladakh Animal

Yak, antelope, Tibetan woodcock, Hemis)



Ladakhi originally from...

Japan, Punjab, Greece, **Tibet**



Cloudless skies due to...

high humidity, high precipitation, **low humidity**, low atmospheric pressure



Building in Ladakh

Hotel for tourists, stable for yaks, **spiritual centre**, military fort

C. Match the following

A	B
Barley	Gangri
Lamayuru	Staple crop
Yak	Church
Leh	Monastery
Finest wool	Mountain pass
Glacier	Long-haired creature
Zoji La	Cricket bat
Willow	Capital city
	Shahtoosh

Ans: 1-B, 2-D, 3-F, 4-H, 5-I, 6-A, 7-E, 8-G

D. Answer briefly

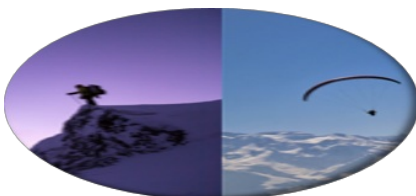
1. Describe the climate of Ladakh.



Ans:

- The climate of Ladakh is that of a cold desert. It is at a high altitude, where the air is thin and the sun's heat can be felt strongly.
- Even in summer the day temperature is near zero and it is freezing cold with biting winds in winter.
- There is very little rainfall since Ladakh lies in the rain shadow of the Himalayas.

2. What attracts domestic and international tourists to Ladakh?



Ans:

- Ladakh attracts tourists with its exceptional natural beauty in the form of glaciers, valleys and rivers.
- Some of these offer activities such as paragliding, white water rafting, trekking and mountaineering.
- The beautifully located monasteries with their ceremonial rituals and festivities are also a huge attraction.

E. Compare and contrast

Give 3 similarities and 3 differences between Sahara and Ladakh deserts.

Ans:

SIMILARITIES *(any three of the following)*

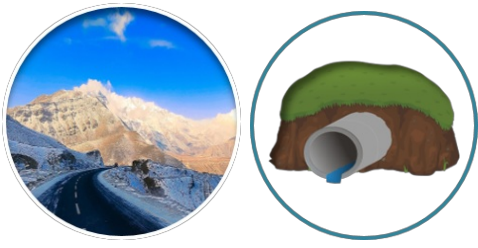
- 1.Dry climate.
- 2.Extreme temperatures.
- 3.Sparse vegetation.
- 4.Small native population, both nomadic pastoralists.
- 5.Animal and plants have adapted to climate extremes creating a unique community.
- 6.Modernisation threatens traditional way of life in both places.

DIFFERENCES *(any three of the following)*

- 1.Ladakh has thinner air due to high altitude; Sahara air is not thin.
- 2.Sahara has high temperatures while Ladakh has very low temperatures.
- 3.Vegetation is different in both places
- 4.Customs and rituals in Sahara are different from that seen in Ladakh.
- 5.The flora and fauna found in Sahara is different from that found in Ladakh.

F. Analyse

Is modernisation good for the Ladakh region?



Ans:

- Modernisation has brought infrastructural improvement to Ladakh region in the form of roads and transportation, and better facilities.
- This has also attracted more tourists.
- Tourists have increased the income of those directly involved in the tourism industry.
- But the increase in visitors has had a negative impact on the environment which is degraded due to increase in sewage and pollution.
- Traditional form of life which is in balance with nature, is being threatened.

Image sources

1. Sahara - <https://pixabay.com/photos/landscape-desert-nature-sand-768423/>
2. Worship - <https://pixabay.com/photos/theravada-buddhism-buddhist-nun-1769528/>
3. Yak – <https://pixabay.com/photos/himalayan-yak-mountains-animal-4690021/>
4. Ladakhi Woman - https://commons.wikimedia.org/wiki/File:Woman_from_Ladakh_edit1.jpg – Attribution - **Steve Evans**
5. Ladakh - <https://pixabay.com/photos/ladakh-mountains-river-travel-2818861/>
6. Lamayuru Monastery - <https://www.flickr.com/photos/rietje/218552332> – Attribution - **Rita Willaert**
7. Cold desert - <https://pixabay.com/photos/lahaul-spiti-leh-ladakh-mountains-2818867/>
8. Mountains - <https://pixabay.com/photos/pangong-tso-lake-high-grassland-lake-1650946>
9. Paragliding - <https://pixabay.com/photos/parachute-extreme-alpine-freedom-4078833/>
0. Mountaineer - <https://pixabay.com/photos/mountaineer-snow-mountains-1185474/>
1. Gatherings - <https://www.flickr.com/photos/krsaurabh/47077462794/in/photostream/> – Attribution - **Saurabh Chatterjee**
2. Ladakh road - <https://pixabay.com/photos/nature-leh-lad-ladakh-kashmir-5991529/>

3. Sewage -<https://pixabay.com/illustrations/wastewater-sewage-system-drainage-3780692/>

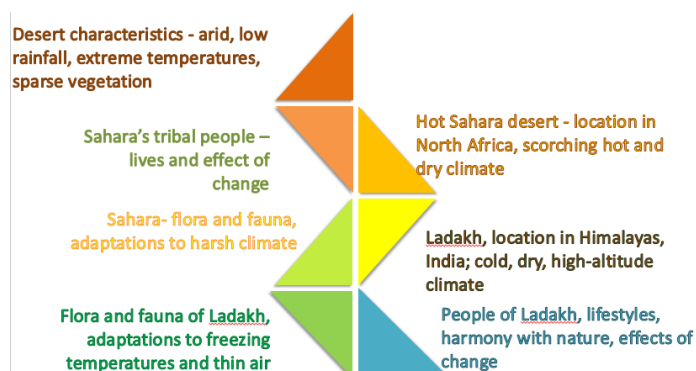
Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Assessments	Resources	People living in Ladakh, Natural Environment , Land as a Resource, Climate , People living in Ladakh, Natural Environment , Land as a Resource, Climate

20. MS_Summary of Life in the Deserts

Summary of Life in the Deserts

Notes for Teacher – The teacher can draw the figure or write the main points of the summary on the blackboard.

Teacher can start by saying, “Let us summarise what we learnt from the topic - Life in the Deserts”.



In this lesson on Life in the Deserts, we discussed:

- the importance of water and how water scarcity, low rainfall, extreme temperatures, and sparse vegetation characterise deserts.
- the two kinds of deserts – hot and cold
- the hot Sahara Desert, its location in northern Africa, its scorching hot and dry climate
- the flora and fauna and their adaptations to the harsh heat and dry climate of the Sahara
- lives of the tribal people of the Sahara and how change has affected their lives

- the cold Ladakh desert, its location in Himalayas in northern India, its freezing cold and dry, high-altitude climate
- the flora and fauna and their adaptations to the extremely low temperatures and thin air of Ladakh
- the lifestyles of the people of Ladakh, how they live in harmony with nature, and how modernization has affected their traditional way of living

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Main Script	Resources	Types of wild life, Natural Environment , Life of tribal groups, Degradation of soil , Climate , Types of wild life, Natural Environment , Life of tribal groups, Degradation of soil , Climate

Master Lesson Plan

Seven Asset Methodology for MLP

What is the purpose of this Master lesson Plan?	This Master Lesson Plan (MLP) prepared by Sri Sathya Sai Vidya Vahini (SSSVV), covers the entire chapter for the given board. The MLP for the chapter given in the textbook is broken down into smaller modules known as assets. Any chapter can be taught using the 7 asset types in SSSVV methodology. Several different assets together complete the entire chapter. Depending on the requirement, each asset is supported by teaching aids such as animated presentation, audio, video, and learning aids such as worksheets. The MLP is for the teacher's preparation and the teaching aids are for use in the classroom.
How to use it?	You can prepare for your class with this MLP by following 3 simple steps: 1. Read your textbook; 2. Go through the information given in the assets (document & multimedia); 3. Prepare your teaching notes. Great! Now you are ready to transact the chapter.
Duration	Kindly note the duration given for each asset. Due care has been taken in planning the assets, to ensure the chapter is completed within the time specified by the Board. Note: Preparation time is not included in the asset duration. The teaching time depends on the duration of the teaching aids and is not impacted by the length of the MLP.
What is a 'Main Script' (MS) Asset?	The Main Script asset is there for explaining the main concepts of the chapter clearly. The information given in the textbook is simplified, organised and structured to give more clarity. Additionally, you may find a video or mnemonics or a graphic organiser to deepen the understanding of the concept.
How to teach using the MS asset?	Please use the blackboard, slides and interaction to develop the concept.
What is an 'Inquisitive Questions' (IQ) asset?	The Inquisitive Questions asset uses questions to promote higher order thinking like the n^{th} why, what-if, new perspectives, cause-effect, and others, creating curiosity.
How to teach using the IQ asset?	You may use the questions to connect with the students, encourage exploration to engage them in the learning process. You may allow multiple responses and instead of rejecting any of the responses, ask why, before revealing the suggested answer or hints.
What is a 'Day to day Relevance' (DD) Asset?	The Day to Day Relevance asset helps students understand the practical relevance of every topic, making them eager participants in the classroom. If students connect the concepts to their environment, they would learn meaningfully without dislike or simply memorizing for exams.

How to teach using the DD asset?	You may use the asset by asking questions about their experience and use it to establish why they are learning the topic. If necessary you may substitute with a recent or local example.
What is an 'Interesting Aside' (IA) asset?	The Interesting Aside asset uses attention grabbing titbits or anecdotes to bring joy and satisfy the child's hunger to know more. This is a quick/short asset intended to bring attention back to the main concept being taught.
How to teach using the IA asset?	You may use this asset to give a piece of interesting information relevant to the topic, without prolonged explanation/discussion. You may suggest appropriate books for further reading.
What is a 'Suggested Activity' (SA) Asset?	The Suggested Activity asset provides a detailed step by step procedure for the teacher to conduct a hands-on activity. This promotes Activity Based Learning.
How to teach using the SA asset?	You may use this asset to energise your students to learn by doing simple, fun-filled activities based on the topic. The asset includes - preparation, activity, and follow-up. You may engage the students in the preparation and follow-up stages to develop collaboration and responsibility. You could try it once, yourself, before the actual delivery to be more comfortable with it. Note: The duration mentioned in the asset is usually for the activity part only.
What is a 'Value Content' (VC) Asset?	The Value Content asset integrates Universal Human Values (such as empathy, inclusivity, respect for nature that translates into responsible behaviour) seamlessly into the curriculum, as the "End of education is character".
How to teach using the VC asset?	You may use this asset to engage with the students to bring out their innate values and connect with the intrinsic values in the topic/concept. The asset includes pointers on the specific pedagogical technique followed.
What is a 'Questions to Assess' (QA) asset?	The Questions to Assess asset uses an interactive approach to check learning of different types of learners, and provides feedback to the teacher for appropriate action. The questions cater to all the levels of Bloom's Taxonomy. Questions from 'Apply' level and above enable students to reflect on their learning.
How to teach using the QA asset?	You may go through the slides to understand its flow and know when to click for the answer (slides include suggested answers). While presenting in the class, you may display the question and encourage multiple responses, before revealing the answer. In some cases, this asset may include extra questions/worksheet that can be given as homework.