



Master Lesson Plan

For

Human Environment Interactions The Tropical and the Subtropical Region

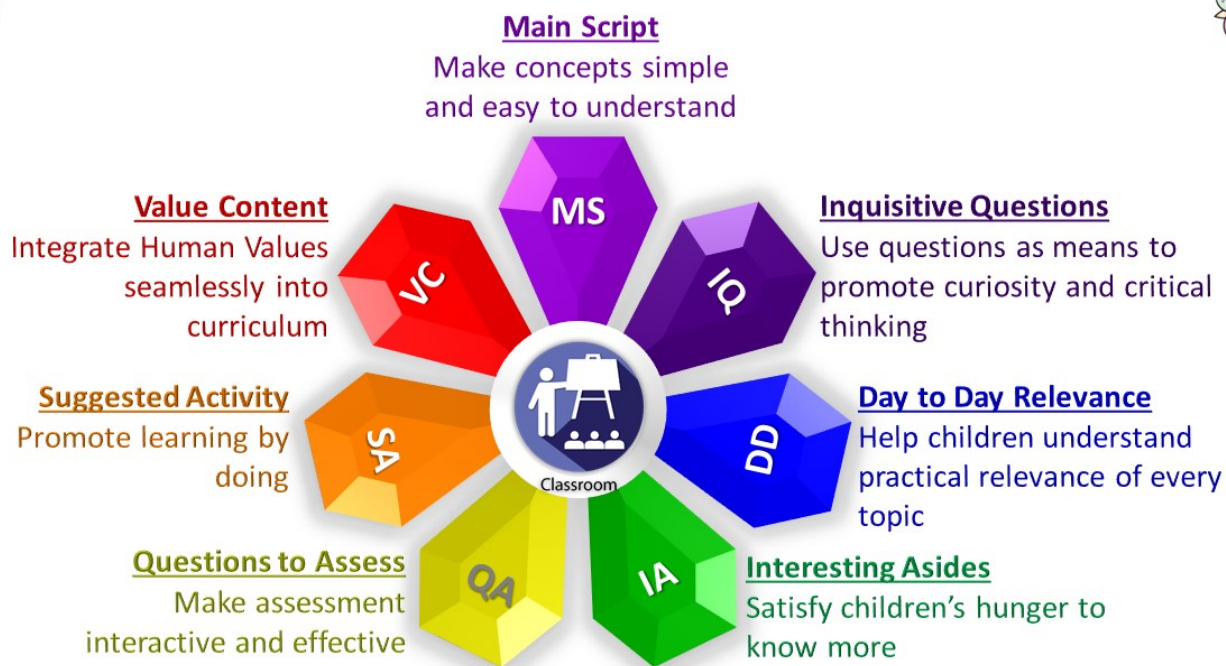
Board	Standard	Subject	Chapter	Language	Reference Link	Creation date
CBSE	STD VII	Social Science	Human Environment Interactions The Tropical and the Subtropical Region	English	Human Environment Interactions The Tropical and the Subtropical Region	2020-12-30 16:19:00

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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.

Human Environment Interactions The Tropical and the Subtropical Region

1. MS_Objectives-Human Environment Interactions

Objectives of the MLP

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.

Students will be able to:

- appreciate the diverse conditions and people who live in different lands
- explain the correlation between the location and the climatic conditions in the Amazon basin
- demonstrate their knowledge of the climate in the tropical region
- describe the various types of plants and animals found in the tropical region of the Amazon Basin
- demonstrate the importance of conserving the flora and fauna of the Amazon Basin
- describe the habitat, food habits and occupations of the people who live in the rainforests
- develop courage to face challenges in life
- analyse how changes in the Amazon Basin affects the people of the region
- discuss how developmental activities affect the Amazon Basin, including the vanishing rainforests
- assess their understanding of the Amazon Basin
- explain the correlation between the location and the climatic conditions of the Ganga-Brahmaputra plains
- relate to how the activities in the Ganga-Brahmaputra Basin touches our daily lives
- explain the correlation between the terrain and the population distribution in the Ganga

Brahmaputra Basin

- mark the Ganga and Brahmaputra rivers, their tributaries and 2 important cities, on an outline map
- critically examine how the great diversity in wild animals found in the Ganga-Brahmaputra Basin is linked to the different terrains of the region
- recognise the presence of dolphins as an indicator of a clean water body
- examine how tourists are attracted to places of historical, cultural and natural significance located in the Ganga-Brahmaputra Basin
- relate to the cleanliness campaigns such as the Swacchh Bharat Mission and the Namami Gange programme
- assess their learning of the topic - Human Interactions-the Tropical and Sub-tropical region
- summarise the topic 'Human Environment Interactions - the Tropical and Subtropical Regions'

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Main Script	Resources	People of the Rainforests , People as resource, Life In the Amazon Basin, Life in Ganga - Brahmaputra basin , People of the Rainforests , People as resource, Life In the Amazon Basin, Life in Ganga Brahmaputra basin

2. IA_Different Lands and Diverse People

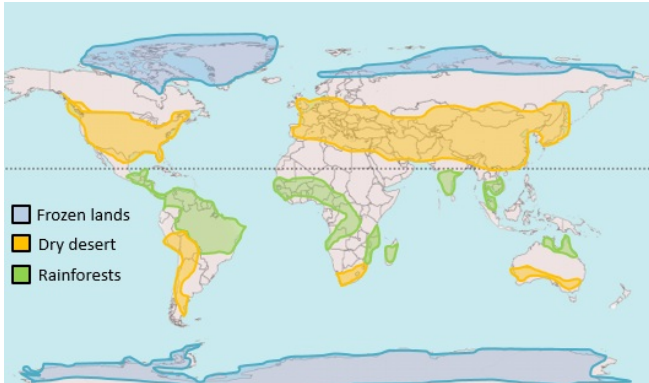
Different Lands and Diverse People

Different lands



- Our distant lands reflect the incredible diversity on our earth.
- Physical features of the land, climate, flora, fauna and physical characteristics and the lifestyles of people vary from place to place.

Diverse climatic regions



- Natural regions of the earth are many and varied.
- Among the diverse regions are temperate grasslands, hot and cold deserts; and tropical and sub-tropical regions.
- The grasslands of the temperate regions, such as the prairies in North America, are large, flat and treeless.
- The hot deserts of the Sahara and the cold deserts in places like Ladakh in India and the Gobi Desert in Central Asia, are characterised by low rainfall.
- Hot, tropical climate, found near the Equator, ensures rich vegetation all-year round, such as in the Amazon Basin.
- **One of the major factors that influence the life in a region is its location and climate.**

Common basic needs



- The people who live in these regions with different climates appear very different from each other.
- But though there are many differences in physical attributes and lifestyles among the

people, there is a common thread that binds all – the concern for food, clothing and shelter. All over the world, families behave in similar ways in their daily lives, with children spending their days in play and study.

- The lives of people are closely intertwined with nature; they respect nature and use her abundant resources with care.

Image sources:

1. Desert: <https://pixabay.com/photos/desert-morocco-sand-sand-dune-110112>
2. Deer: <https://pixabay.com/photos/deer-animals-mammal-watching-212741/>
3. Man: <https://pixabay.com/photos/the-kaxinaw%C3%A1-indigenous-man-3088226/>
4. World Map: SSSVV Gallery keyword<world map>
5. Woman cooking: <https://www.flickr.com/photos/56796376@N00/9684268512> (By McKay Savage) Attribution 2.0 Generic (CC BY 2.0)
6. Tea garden: <https://pixabay.com/photos/agriculture-asia-back-black-1822446/>
7. Fisherman: <https://pixabay.com/photos/market-heho-nianmar-fish-people-4807572/>

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Interesting Asides	Resources	Life In the Amazon Basin, Life In the Amazon Basin

3. MS_Location and Climate of Amazon Basin

Location and Climate of the Amazon Basin

Notes to teacher:

Teacher can introduce the asset with these words, “In this asset we will examine how the location of the Amazon Basin in the tropical region affects its climate as well as its surroundings.”

Tropical region of the world



- The Amazon Basin is located in the tropical region of the world.
- The tropical region is also called the equatorial region since this is located in a band around the Equator, between the latitudes of 10° N and 10° S.
- Since these areas around the Equator receive direct sunlight, the climate in this region is typically hot with high year-round temperatures and high monthly rainfall.
- Days and nights are equal in length in this region.

Location of the Amazon Basin



- The Amazon Basin is located in South America.
- It is the area through which the River Amazon and its many tributaries flow.



- The source of the River Amazon is high in the Andes mountains from where a few of its tributaries start their journey.
- From these mountains in the western part of South America, the River Amazon flows eastward until it reaches the mouth of the river where it empties into the Atlantic

Ocean.

- The Basin is spread over several countries including Columbia, Ecuador, Peru, Bolivia, a small part of Venezuela, and a large part in Brazil.
- It is a massive river system carrying an enormous amount of water to the Atlantic Ocean, and in terms of volume has the largest drainage system in the world, making the Amazon Basin the world's largest river basin.

Climate of equatorial regions

- Temperature is high throughout the year.
- Humidity is high throughout the year, making the skin sticky and uncomfortable. The days and nights are equally hot and humid.
- Rainfall is high with precipitation almost every day, and often very suddenly. The days are hot with high humidity, while nights are cooler but humidity remains high. Thick forests abound here due to the high rainfall.

Discovery of the River Amazon



The river was named Amazon by Spanish explorers when they had to battle with indigenous tribes of warriors whose attire reminded them of the Amazons, a race of fierce warrior women from Greek mythology.

The interconnections



The location of the Amazon Basin in the tropical region influences the climate and the vegetation found there.

Glossary:

Tributaries: *Smaller rivers or streams that flow into a larger river are called 'tributaries'.*

Distributaries: *Streams or smaller rivers that branch off and flow away from the main river.*

River basin: *Also known as the 'catchment area', this is the area of land where water from many streams and tributaries flows downward, draining into the main river.*

(**Note to teacher:** *Children can be asked to name any of the river basins in India).*

Source of the river: *The source of a river is the tributary that starts farthest from the main river.*

Mouth of the river: *The point at which the river joins the sea is known as the 'mouth of the river'.*

Image sources:

1. **World Map:** SSSVV Gallery- Key word- world map
2. **Globe with map :** <https://pixabay.com/vectors/world-map-world-map-earth-global-297315/>
3. **Satellite image of Amazon Basin:**
<https://www.flickr.com/photos/45150779@N04/5052616654/> (**By Balant world**)
satellite image of Amazon Basin
4. **Map of South America:** <https://openclipart.org/detail/17192/amerique-du-sud-politique>
5. **South America map-**<https://pixabay.com/illustrations/south-america-amazon-brazil-andes-1804901/>
6. **Amazon River:** <https://pixabay.com/photos/river-amazon-landscape-3642456/>

Time to teach	Asset Type	Theme	SubTheme
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7 Minutes	Main Script	Resources	Life In the Amazon Basin, Life In the Amazon Basin
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4. SA_Tropical Climate in Amazon Basin

Tropical climate in Amazon Basin

Note to the teacher:

The activity can be introduced with these words, “Let us now have an activity based on the climate of tropical region, especially the Amazon Basin”.

AIM: To enable the students to solve a crossword puzzle based on the climate of the tropical and sub-tropical region especially the Amazon Basin.

MATERIAL REQUIRED:

Printed copies of crossword (one for each child)

SETTING FOR THE ACTIVITY

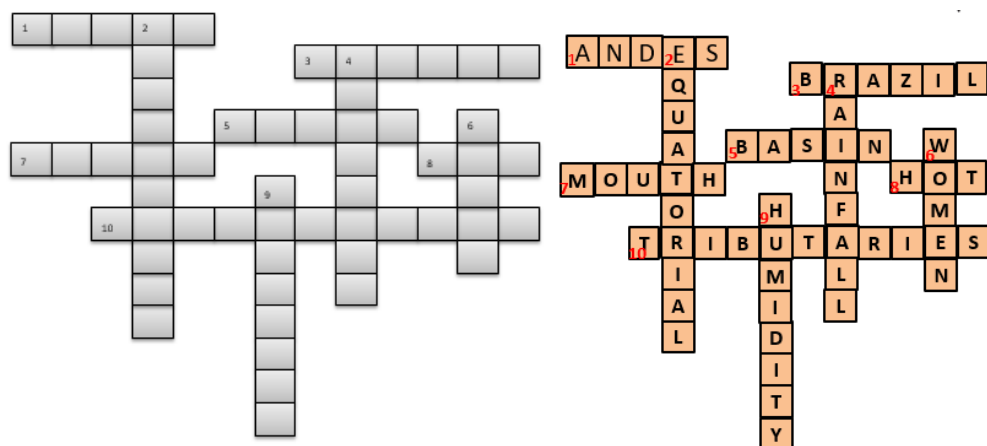
Indoor

TYPE OF ACTIVITY:

Crossword

PROCEDURE:

- The teacher informs the students about the activity in the previous class itself, so that the students can be prepared with the topic.
- On the day of the activity the teacher can begin by showing the PPT.
- This can be followed by the crossword activity.
- Teacher can monitor timings to ensure activity is completed on time. (*Suggested timings- crossword 12 mins, correction of crossword-4 mins, worksheet- 4 mins.*)
- On completion of the crossword the papers can be exchanged between the students and corrected. The teacher can show the PPT slide with the completed crossword to help the students correct the papers.
- Each student can attach his/her own corrected crossword paper to their respective notebooks.

CROSSWORD - Blank and completed:**CLUES****ACROSS:**

1. Source of River Amazon (*Ans: ANDES*)
3. Largest country in the Amazon Basin. (*Ans: BRAZIL*)
5. Also called catchment area. (*Ans: BASIN*)
7. Where a river joins the sea (*Ans: MOUTH*)
8. Climate is _____ and humid. (*Ans: HOT*)
10. Small rivers which feed into the main river. (*Ans: TRIBUTARIES*)

DOWN:

2. Region known as 'tropical'. (*Ans: EQUATORIAL*)
4. The Basin receives high _____. (*Ans: RAINFALL*)
6. River Amazon is named after ancient Roman _____ warriors. (*Ans: WOMEN*)
9. High _____ in this region makes the skin feel uncomfortable. (*Ans: HUMIDITY*)

OBSERVATION: The teacher will go around the class checking if the children are filling in the crossword correctly, using the clues given.

Precautions:

- If the students are not familiar with a crossword the teacher can explain how it is to be done before they begin.
- While showing the PPT care should be taken not to show the slide with crossword answers before the activity is completed by students.

Troubleshooting:

NA

WORKSHEET

Notes to teacher:

The following worksheet can be given after crossword activity.

If time is not sufficient, the worksheet can be given as homework.

1. The tropical region lies between which latitudes? *Ans: Between 10⁰ N and 10⁰ S.*
2. In which continent can you find the Amazon Basin? *Ans: South America*
3. Why are these places typically hot throughout the year? *Ans: Areas around the Equator receive direct sunlight and thus they are typically hot with high year-round temperatures.*
4. Which ocean does the river Andes join? *Ans: The Atlantic Ocean*

CONCLUSION: The students solve the crossword puzzle and answer the questions based on the Amazon Basin.

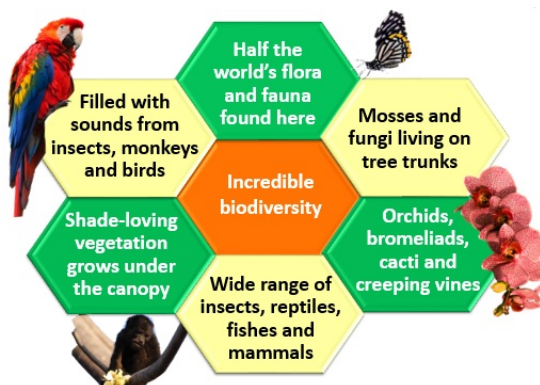
Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Resources	Life In the Amazon Basin, Life In the Amazon Basin

5. MS_Rainforests-Flora and Fauna

Rainforests - flora and fauna

Note to teacher:

The teacher may introduce the asset with these words, “The tropical rainforest is one of the world’s most unique ecosystems. It is home to the largest number of plant and animal species in the world. Let us learn what flora and fauna we can find in these forests, by studying the Amazon rainforests.”



- The Amazon Basin is an exceptional place with the largest rainforest and the highest biodiversity in the world.
- This is home to 50% of the world’s plant and animal species.
- Its climate is warm, humid and wet with almost continuous rainfall, and this gives rise to forests that are thick and dense.
- Within the rainforest the green canopy created by the treetops is so closely interwoven, that sunlight does not reach the forest floor.
- Food is abundant in the canopy and many animals and birds live here.
- A few giant trees emerge into the sunlight from above the dense canopy, while shade-loving vegetation grows under the canopy.

- Rainforests are incredibly rich in varieties of flora and fauna.
- A variety of moss and fungi live on the tree trunks, along with other plants that use the tree trunks for support such as orchids, bromeliads, cacti and thick creeping vines.
- The fauna ranges from various insects including colourful butterflies, to spectacular birds, unusual mammals, reptiles, snakes, amphibians and fish; many of which are found nowhere else in the world.
- Night and day, the Amazon rainforests are filled with sounds made by monkeys, insects and birds.

Some of the flora and fauna of the Amazon Basin region:

Flora	Distinctive feature
Heliconia flower	Brilliant colours, also called "Lobster-claw"
Rubber tree	Important commercial tree as it is a good source of natural rubber
Giant water-lilies	Also known as Victoria amazonica, the leaves can measure 10 feet across
Bromeliads	Colourful plants, living on tree trunks and branches. Bromeliads collect rainwater, creating an ideal habitat for other creatures like frogs. Pineapple is a well-known bromeliad.
Trees with edible fruits	Bananas, cacao (source of chocolate), coffee, Brazil nut.
Vines	Also called lianas, these provide support to shallow-rooting large trees
Palm	A plant found in abundance
Orchids	Exotic and fragrant plants with spectacular flowers

Fauna	Distinctive feature
Mammals	
Tapir	Eats ants. Lives in water and possesses high sense of smell and hearing.
Howler monkeys	Move in groups. Their loud calls can be heard a few kilometres away.
Three-toed sloth	World's slowest mammal.
Capybara	Largest rodent in the world.
Jaguar	Only big cat in the continent; its existence is threatened.
Pink river dolphin	Starts life grey in colour, acquires pink colour as an adult
Birds	
Toucan	Noisy bird with colourful and very large bill
Macaw	Bright and colourful bird. Belongs to the family of parrots; very intelligent, can even mimic human speech.
Bird of paradise	Spectacular with brightly-coloured feathers
Hummingbird	Tiny bird, generating humming sound from its beating wings
Reptiles & amphibians	
Anaconda	World's heaviest snake and one of the largest
Boa constrictor	Comfortable on ground and in the trees
Caiman	Endangered species of the basin.
Glass frogs	Transparent skin, like glass
Insects	
Butterflies	Brilliantly coloured
Giant spiders	Largest ones can measure upto 13 inches across
Leafcutter ants	Live in huge colonies with giant anthills
Fish	
Piranha fish	Flesh-eating fish

The Amazon Basin is the most biodiverse tropical rainforest in the world; the rich variety of animal and plant life found here is unequalled.

Note to the teacher: *The attached video showing flora and fauna of the Amazon rainforests can be shown to the students.*

Video: *'Journey Through Amazon'*

Video time: *1 minute 32 seconds-- (please download the video).*

Sources:

<https://www.britannica.com/place/Amazon-River/Animal-life>

<https://www.worldwildlife.org/stories/what-animals-live-in-the-amazon-and-8-other-amazon-facts>

<https://www.nationalgeographic.com/animals/birds/t/toco-toucan/>

Image sources:

- **Macaw red :** <https://pixabay.com/photos/parrot-red-blue-bird-australia-4904124/>
- **Butterfly:** <https://pixabay.com/photos/butterfly-insect-close-up-361842/>
- **Orchids:** <https://pixabay.com/illustrations/flower-flowers-orchid-red-pink-2023089/>
- **Monkey:** <https://pixabay.com/photos/monkey-howler-monkey-tree-blossom-624797/>

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Resources	Life In the Amazon Basin, Life In the Amazon Basin

6. SA_Amazon Basin -a Hotspot of Biodiversity

Amazon Basin – a Hotspot of Biodiversity

Note to teacher:

The activity can be introduced with these words, “Let us now live through the experience of the Amazon rainforests, to realise the importance of its rich and unique biodiversity”.

AIM: To get the students to demonstrate the importance of conserving the flora and fauna found in the Amazon Basin rainforests.

MATERIAL REQUIRED:

Each student will need:

- Stiff paper on which the names of characters can be written and attached to the actor's shirt.
- Pins to attach the paper to the shirt.
- Worksheet (as many copies as number of children)

SETTING FOR THE ACTIVITY

Indoor

TYPE OF ACTIVITY:

Role-play

PROCEDURE:

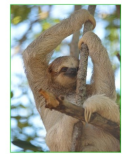
A few days prior to the activity

- The teacher can share the script of the role-play with a group of students who are selected, or have volunteered, for the role-play.
- The participants should rehearse in front of the teacher after learning their dialogues. This rehearsal can be done a day before the activity.

On the day of the activity

- The activity is introduced by showing the PPT.
- Students should be encouraged to remember the pictures and animal names shown on Slide 3 to better understand and enjoy the role-play that will be enacted.
- The PPT can be paused on Slide 4 which has an image of the rainforest ; this can serve as a backdrop to the role-play, and the PPT can be paused on this slide until the end of the play.
- The role-play is performed.

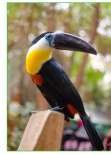
- After the role-play, the worksheets can be distributed to the students.
- The completed worksheets can be exchanged between the students and corrected.
- The students can attach the corrected worksheets to their notebooks.
- *(Suggested time allocation for the activity: PPT - 2 minutes, Role-play - 8 mins, Worksheet completion and correction - 10 minutes)*



Three-toed sloth



Tapir



Toucan



Monkey



Anaconda



Jaguar

Pics: Images of animals on Slide3 and image of rainforest on Slide 4

SCRIPT FOR THE ROLE PLAY (approx. 8 minutes)

Characters in order of appearance:

1. Narrator
2. Young boy
3. Old man
4. Tree-cutter (who clears land by cutting down trees)
5. Fire-setter (clears land by setting fire to trees)
6. Tapir (identifying characteristic-sniffing around the ground, looking for ants)
7. Jaguar (identifying characteristic- big cat, majestic walk, fearsome nature)
8. Toucan (identifying characteristic – large beak, noisy, flapping wings)
9. Anaconda, (identifying characteristic – very large snake, slithering on the floor, hissing sound)
0. Sloth (identifying characteristic – moves extremely slow)
1. Monkey (identifying characteristic – chattering, jumping around, high energy)
2. Tree 1

3. Tree 2

4. Tree 3

(Stage – The trees are on one part of the stage. Narrator walks on stage)

Narrator- Far away in another continent on the other side of the world, it is morning in the Amazon jungle.

The birds and animals have awakened and so have human beings.

Let us take a glimpse into a morning in the rainforest.

(Young boy and old man walk on stage, on the side away from the trees, and pause)

Young boy—Grandfather, can we go to the forest? We can pick some fruits and berries.

Old man-- Yes, we can go, and if we are lucky we may see some wild animals. Stay close to me, some of them are dangerous.

Young boy -- We should not allow any dangerous animals in the forest, grandfather. They should all be removed.

Old man-- Why? Do they not have a right to be in the rainforest? The forests were not created only for human beings. In fact, animals, birds, insects and plants have more rights than us. This is their only home.

Young boy – *(pauses to show that he is thinking)* Yes, that's true, grandfather. We can build houses and stay in them and create villages and cities.

Old man -- *(puts his finger to his lips)* Talk softly now. We have entered the forest and should not frighten the animals away.

(They gather fruits and berries. Tapir enters the scene, starts digging in the ground)

Old man -- *(Points out to animal)* Look, there is a tapir. He is looking for ants in that anthill.

(As the boy looks at the tapir, the old man checks their baskets)

Let us go home. We have collected enough fruits and berries, and your mother will be waiting for us. On the way, I will show you many interesting plants and other animals. It may rain, so let's hurry.

(Young boy looks up)

Young boy--Grandfather, how do you know it's going to rain? I can't even see the sky because of the thick, leafy canopy.

Old man - That is how it is in these rainforests. Rainfall is very sudden and also very heavy. It is this heavy rain that creates these thick forests and gives shelter to so many animals, birds and insects. Now let's go quickly.

(Young boy and old man keep walking until they go off the stage)

(Jaguar walks past the tapir)

Tapir-Oh Jaguar, look at those two-legged creatures.

Jaguar- They won't harm us. Now run along, Tapir. You are lucky I am too sleepy to hunt you. GRRRRR.

(Tapir runs away)

(Jaguar meets the anaconda)

Jaguar – Hey, move over Anaconda, I want to sleep.

Anaconda - HISSSSSSSS-go away Jaguar, I've swallowed a deer and can't move. Look at that sloth—the slowest creature in the world, I have been waiting for him to move on so that I can sleep on the branch.

Sloth *(moving very slowly)*-am going at top speed, Anaconda. Go climb another tree.

(Pauses) I can't even hear myself speak with these noisy birds and those jumping monkeys. Can't they stay on one tree?

(Monkey comes in, jumping about, pauses and looks into the distance)

Monkey- Hey look, there are more of those 2-legged ones entering our forest.

(Pause and machine sounds start)

(Toucan comes on stage)

Toucan—I was flying over the forest. Those human creatures are bad. They have come here after cutting the trees in another part of the forest. They are destroying our home!

(Tree-cutter and Fire-setter enter stage. All animals come on stage, sit silently away from the trees and watch what's happening)

Tree-cutter-- I'll cut this one. With this machine we can cut trees in very little time. *(Sound of mechanical saw in the background. Tree-cutter cuts both trees which fall one by one)*

Fire-setter- Yes, your machine is super-efficient. But my way is much better. Come with me and see how I do it. I am going to set fire to the forest and it will be super-quick. What efficiency, we can clear thousands of acres of forest in a very short time.

(Tree-cutter does a thumbs-up, and both go off stage).

(The animals also go near the fallen trees and sit down, showing sadness).

PAUSE

(Student comes on stage, addresses the class directly)

Narrator –*In the name of progress man is destroying forests, and the animals that live in them.*

But think, maybe we can change.

Tell me, what will happen if we reduce cutting trees, and plant new ones instead?

(Interactive session-students from the audience answer these questions. Narrator can continue after receiving 4 or 5 answers.

Some suggested answers:

Forests will grow back

Animals and birds will return.

Temperature will drop.

Water table will rise.)

Forests will grow back.

(The trees come upright)

And the animals and birds will return.

(The animals and birds get up and do a thumbs-up sign)

We cannot underestimate the importance of forests.

Our very survival depends on them.

They give us the air we breathe and create moisture banks by absorbing rainwater.

They also control greenhouse gases by absorbing carbon dioxide, and keep temperatures down.

They give us livelihood and medicines.

Tropical rainforests teem with life. Plants, animals, birds and insects, live there. So do human beings.

Note to the teacher:

- *The following worksheet can be distributed among the children after completion of the role-play.*
- *If the students are unable to complete the worksheet in class, it may be given as homework.*

WORKSHEET :

A. Identify the following statements as right or wrong, and if wrong, explain why it is wrong:

1. Tapirs eat ants. *(Ans. Correct)*
2. The silence in the green rainforests is very calming *(Ans. Wrong, rainforests are very noisy especially with birdcalls and the chattering of monkeys).*
3. The anaconda swallows its prey. *(Ans. Correct).*
4. The sloth can easily escape a jaguar by running rapidly up a tree. *(False: the sloth is known for its very slow pace of movement).*

B. Think and answer:

Note to teacher: *In this section students may be encouraged to give as many answers as possible.*

1. Why do you think man is clearing the rainforests?

Suggested answers:

Man clears forests for

- *timber*
- *developmental projects like roads*

- *cultivation of cash crops*
- *grazing cattle*

2. List 4 advantages of keeping the rainforests intact.

Suggested answers:

Rainforests

- *release oxygen into the atmosphere*
- *absorb carbon dioxide from the atmosphere*
- *bring temperatures down*
- *collect rainwater*
- *shelter many plants and animals*
- *provide livelihood to man*
- *provide medicines*

OBSERVATION: During the rehearsals the teacher plays a guiding role.

Precautions:

- None

Troubleshooting:

- None

CONCLUSION: The students demonstrate the importance of conserving rainforests and the flora and fauna that can be found there.

Image sources

- **Anaconda:** https://commons.wikimedia.org/wiki/File:Anaconda_Loreto_Peru.jpg (**By Dave Lonsdale**)
- **Tapir:** <https://pixabay.com/photos/malayan-tapir-asian-tapir-animal-1734462/>
- **Toucan** - <https://pixabay.com/photos/toucan-tropical-bird-climber-1332136/>
- **Three-toed Sloth** – <https://pixabay.com/photos/sloth-animal-mammal-tree-lazy-4388566/>
- **Jaguar** -<https://pixabay.com/photos/animal-world-mammal-nature-animal-3193850/>
- **Howler Monkey** – <https://pixabay.com/photos/monkey-howler-male-animal-jungle-796824/>
- **Rainforest:** <https://pixabay.com/photos/rainforest-palm-trees-moss-78516/>

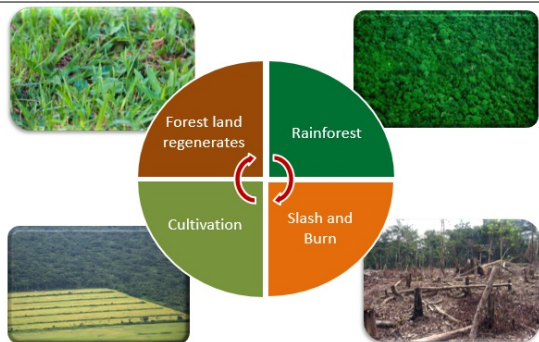
Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Resources	Life In the Amazon Basin, Life In the Amazon Basin

7. MS_People of the Rainforests**People of the Rainforests**

Tropical rainforests, such as the Amazon, are home to many tribes who are dependent on the forest for food, clothing, medicines and shelter.

- The Amazon rainforests have a long history of human settlement with hunting, fishing, gathering and agriculture as the main occupations of the people who live there
- The men hunt and fish which are uncertain occupations. The women stay at home and cultivate the land, ensuring a steady supply of food for their families

Agriculture



- The people practise slash and burn method of farming in which, a part of the forest is cleared of vegetation.
- This vegetation is burned and the nutrient-rich ash is added to the soil.
- Crops are cultivated on this land for some years until the soil begins to become less productive.
- The plot of land is left uncultivated so that the vegetation grows back.
- The farmers move on to another piece of land and the process is repeated.

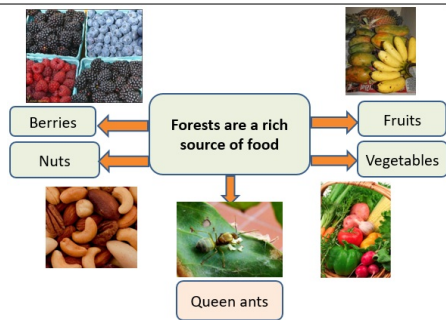
Crops grown



Pics: Manioc/tapioca, papaya, coffee, oil palm

- The staple food of the people of the Amazon Basin is an underground tuber, tapioca, also known as manioc or cassava. Papaya, pineapple and sweet potato are also cultivated and consumed.
- Cash crops like banana, oil palm, maize, coffee and cocoa are cultivated.

Gathering food from the forest



- The forest is a rich source of food such as fruits, vegetables, nuts and berries.
- Insects, like wasps, beetles, queen ants and their eggs, are also a protein-rich source of food.

Shelter



Pics: Palm leaf shelter, maloca

Many different kinds of houses can be seen in the Amazon rainforests.

They all use material abundantly available in their surroundings such as wood which is used extensively in building houses.

Palm leaves and other material are used to build thatched roofs.

- Some tribes live in communal houses called 'maloca', which are large thatched structures housing many families in separate apartment-like compartments under one roof.
- Others live in houses which are uniquely shaped like beehives.
- Also seen in these regions are floating villages, with houses built on rafts on the river. These villages rise and fall with the changing levels of the river water.

Image sources

- **Textile** - <https://www.flickr.com/photos/9822107@N08/4080593545> (**By shaireproductions.com**) (CC BY 2.0)

- **Floating houses** - <https://www.flickr.com/photos/82536057@N04/8277669006> (**By Global Water Forum**) (**CC BY 2.0**)
- **Food**: <https://pixabay.com/photos/san-pedro-market-cusco-peru-fruit-4701722/>
- **Medicine**: <https://pixabay.com/photos/cinchona-quinine-countess-powder-231298/>
- **Fishing**: <https://pixabay.com/photos/rio-fisherman-nature-brazil-2141779/>
- **Hunting**: <https://pixabay.com/photos/tapir-the-south-american-animal-4155997/>
- **Gathering**: <https://pixabay.com/photos/fruit-tropics-plant-central-america-1027976/>
- **Agriculture**: <https://www.flickr.com/photos/nealea/17219448904/in/photolist-seCbf5-6YTU8a-JUDz9-JUDqY-t9iSA7-6YTSvv-JUDbf-JUDYQ-JUPCa-JUQ5V-JUPXz-JUEjy-2iejGJt-JUEdb-qFpuuR-JUDhu-8kfo6F-avsMFb-qFnSP6-6tgT3d-6tcHmk-qXFrQD-JUD2d-seCemA-JUDHd-6YXUzu-qFpuG4-qXKCMS-6YXVKy-PTbk7o-qFgPoS-JUDkG-6YXVvS-PUHwgj-avq946-94yLfy-qFfFQq-tbodgL-JUDws-6YTUbt-yKuGgA-94yMsA-4Ug8gu-6d6F5N-2bYqYiW-94yGw5-avsM5q-7AV2V7-4JkcMs-2ivafwz> (**By Neale Adams**)
- **Rainforests**-https://www.flickr.com/photos/ana_cotta/3066923444/in/photolist-8jT4T9-4yCBv6-5wUzRn-5F1Muq-4tTyaq-oZknze-58vbHe-iFF1DH-ig4VJ-iFJPk3-4tTvXi-5kNdoG-KvtHxA-iiqkNz-iiq6d3-iipTxw-6aNxNR-iipyqc-iipTwE-zGwD8D-i6GXWh-hLLc48-55oKRJ-2itwZyD-4yrGiQ-54LYPv-4yKYGA-4tTxZL-eVERFr-zHqCkD-5ammzX-yKDvqP-4yrGiw-zq1K8V-4yu9vm-4tXz9q-4T1DPw-5J2LCw-zpUcWE-sjeSk9-2ipaBjh-cJpatA-54LXm6-5ammBV-iipTHm-5eUYrE-cJp9wU-2ipazyU-2ip83bu-cJp8UQ/ (**By Ana_Cotta**) (**CC BY 2.0**)
- **Slash and Burn**-
https://commons.wikimedia.org/wiki/File:Amazon_slash_and_burn_agriculture_Colombia_South_America.jpg (**By Matt Zimmerman**)
- **Cultivation**-Farming in the amazon -
<https://www.flickr.com/photos/28585409@N04/3274214937> (**By Sam Beebe**) (**CC BY 2.0**)
- **Regeneration**- <https://www.flickr.com/photos/60433439@N08/8316827559> (**By Sang Valte**) (**CC BY 2.0**)
- **Tapioca** - <https://www.flickr.com/photos/97497712@N03/14850176177> (**By Sue Salisbury**) (**CC BY 2.0**)
- **Papaya** - <https://www.flickr.com/photos/28958738@N06/4791934404> (**By Emilian Robert Vicol**) (**CC BY 2.0**)
- **Coffee plant** - <https://www.flickr.com/photos/75218757@N00/552884590> (**By Larry Jacobsen**) (**CC BY 2.0**)
- **Oil palm** - <https://www.flickr.com/photos/34673037@N04/5391798565> (**By Lian Pin Koh**) (**CC BY 2.0**)
- **Fruits** - <https://www.flickr.com/photos/43296902@N00/49167305398>
- **Fresh Vegetables** - <https://www.flickr.com/photos/41608186@N06/4463639314> (**By ConstructionDealMkting**) (**CC BY 2.0**)
- **Nuts** - <https://www.flickr.com/photos/45032885@N04/4415406430> (**By s58y**) (**CC BY 2.0**)

- **Berries** - <https://www.flickr.com/photos/29487672@N07/14569789867> (**By Scott 97006**) (**CC BY 2.0**)
- **Forest Queen ant** - <https://www.flickr.com/photos/27578890@N07/8326124674> (**By Michael MK Khor**) (**CC BY 2.0**)
- **House with palm leaf roof** - <https://www.flickr.com/photos/106853342@N04/10664080205> (**By Department of Foreign Affairs and Trade**) (**CC BY 2.0**)
- **Maloca** - <https://www.flickr.com/photos/39185776@N02/9447303488> (**By Apollo**) (**CC BY 2.0**)

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Resources	People of the Rainforests , Life In the Amazon Basin, People of the Rainforests , Life In the Amazon Basin

8. VC_Meet the Challenges of Life

—

Meet the Challenges of life

Notes to teacher:

The teacher can introduce the asset with these words, " You all know that the river is a force that cannot be stopped till it reaches its destination.

Let us learn a little more about its power."

The river with all its gushing waters symbolizes motion, the dynamism of life.

The river is constantly turning and bending and sometimes it is able to break through the solid rocks but never stops until it meets the sea.

Image 1: River



The river teaches us the biggest lesson of life – keep going until you reach your goal and until the purpose of life is served.

There will be problems, obstructions and barriers, but we should learn to make our way through these situations and move on.

Let us not be discouraged by setbacks, hardships and failures as is illustrated by the following story.

Story session - Never give up

There was a temple with a beautiful floor of marble tiles.

A huge marble statue was displayed in the middle of the hall.

Many people came to worship this marble statue.

Image 2 & 3: Marble temple and marble statue



The marble tile on the floor was very upset and told the statue one day, “It’s not fair. Why do people have to step on me and worship you? Are we both not from the same cave? Are we both not of the same material? Yet we receive different treatment now.”

The marble statue asked the tile, “My dear friend, do you remember the guy who worked on us both?”

“Yes, of course, I remember. I hate that guy. He hurt me so badly when he worked on me,” said the tile.

“That’s right. He couldn’t work on you at all as you resisted being worked on,” told the statue.

“So?” asked the tile.

“I knew that I would be something after his efforts. Hence I did not resist his tools. Instead I bore all the pain with patience.

My dear friend, there is a price you have to pay for everything in life.

Since you decided to give up half way, you can't blame anyone for stepping on you.”

Overcome all obstacles

Image 4: River



- Following the bend in the river and staying on your own path means that you are on the right track.
- Do not let anyone deter you from that.
- The risk of dealing with challenges is worth it. If you choose the safe option all of your life you will never grow and be all that you can be.
- If you are willing to face the world head-on with all of its dangers and challenges, the sky is the limit.
- The more hard knocks we receive in life, the more we shine.

Image sources:

1. River: <https://pixabay.com/es/photos/paisaje-monta%C3%B1as-r%C3%ADo-nubes-3632403/>
2. Marble temple: <https://pixabay.com/es/photos/india-shree-templo-swaminarayan-1514744/>
3. Marble statue: <https://pixabay.com/es/photos/vishnu-imagen-hind%C3%BA-religi%C3%B3n-3007973/>

4. River: <https://pixabay.com/es/photos/bravo-río-r%C3%ADo-ee-uu-540350/>

Time to teach	Value Type	Value Sub Type	Value Attribute
5 Minutes	Right Action	Perseverance	Stories

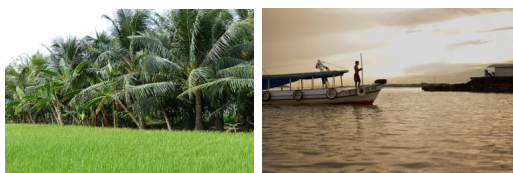
9. IQ_Displacement of the Amazon People

Displacement of the Amazon People

Note to the teacher:

Teacher may encourage the students to think and come out with as many answers as possible before giving out the right answer/ answers.

Quest 1: How important is the Amazon basin and its rainforests to the people who live there?



Answer 1: Hints/ suggestions:

The lives of the people who live in the Amazon Basin are closely interlinked with their surroundings.

The forests are the source of livelihood for them.

Food, shelter, clothing and medicines come from the forests.

Quest 2: Developmental activities such as building of roads have cleared the forest and forced the Amazon people to move out of areas they have occupied for generations.

How difficult do you think it is for them to move out and settle elsewhere?

**Answer 2: Hints/ suggestions:**

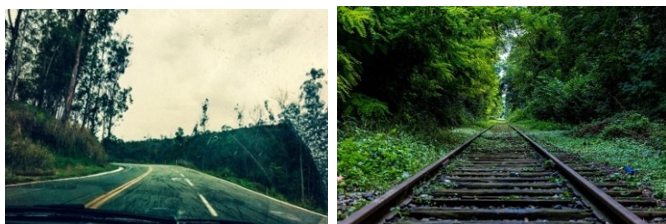
- Resettling in any area, leaving behind a familiar environment with all its physical and emotional connections is difficult.
- It may be challenging to continue traditional occupations, such as hunting, gathering and agriculture, in new surroundings.
- Ancient knowledge gathered over generations may not be applicable in the new place, and may be lost forever.

Quest 3: How will removal of the forests affect life in the Amazon Basin?***Image 4: Deforestation*****Answer 3: Hints/ suggestions:**

The removal of forest cover affects life in many ways in the Amazon basin:

- The topsoil is removed due to deforestation, leading to excessive runoff during heavy rains.
- This in turn makes the land infertile affecting the cultivation of food crops and cash crops.
- Removal of forest also affects hunting activities and collection of various forest products.

Quest 4: Why do you think developmental activities should take place with caution in the Amazon basin?



Answer 4: Hints/ suggestions:

- Developmental projects like construction of roads, bridges and railway tracks are required for making life easy for the people of the region.
- But developmental activities can result in ecological imbalance as well as large-scale degradation of the soil and the forests.
- It is necessary to ensure that nature is not destroyed in the name of development.

Image sources:

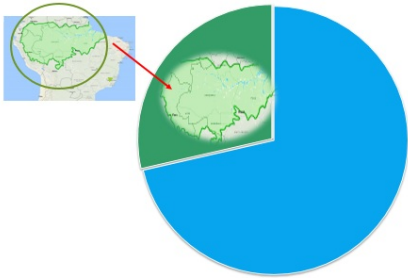
1. **Agriculture** – CC - <https://pixabay.com/photos/agriculture-tropics-tropical-nature-1270156/>
2. **Fishing** – CC - <https://pixabay.com/photos/amazon-river-boat-landscape-water-2406438/>
3. **People of Amazon** – CC - <https://pixabay.com/photos/amazon-people-boat-539431/>
4. **Deforestation of forest** – CC - <https://pxhere.com/en/photo/832237>
5. **Highway** – CC - <https://pxhere.com/en/photo/1420277>
6. **Railway tracks** – CC - <https://pixabay.com/photos/railroad-tracks-rails-railroad-480466/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Inquisitive Questions	Resources	People of the Rainforests , People of the Rainforests

10. MS_Development Brings Changes to Amazon

Development Brings Changes to Amazon

Note to the teacher: *The asset can be introduced with these words. "Roads, bridges and railways are sometimes necessary to develop a region. But let us see if these development projects benefit everybody. "*



- The rainforests of the Amazon Basin are known as the lungs of the planet since they produce 20% of the oxygen in our planet's atmosphere.
- They also absorb great amounts of carbon dioxide, a greenhouse gas - removing it from the atmosphere.
- These magnificent forests are home to over half the species of plants and animals in the world, and sustain many indigenous human groups who are settled in the Amazon Basin.

Vanishing rainforests



- However, the rainforests are vanishing at an alarming rate due to human activities.
- The rainforests which earlier covered 15% of the earth's surface now cover only about 6%.
- This is having harmful effects on the bio-diversity of the region and the climate patterns

Clearing forest for development



- Human activities in the name of development have resulted in changes in the Amazon Basin.
- The main activities that are destroying the precious rainforests include clearing of forest land for:
 - o cattle-rearing
 - o cultivation of cash crops such as soybean and palm oil
 - o wood for construction activity and paper manufacture
 - o road-building
 - o mining
 - o hydro-electric projects.
- It has also changed the life of the people of the Amazon Basin by displacing them from their traditional lands.

Increased accessibility



Pics: Roads through rainforests, use of aircraft, deforestation, transportation of cut trees

- Developmental projects have made previously inaccessible areas of the forest easy-to-reach.
- In earlier times the deep interior of the forests could only be accessed through the river but now roads have made it easy to reach the forest, clear the land and then transport the timber out of the forest.
- The Trans-Amazonian highway built in 1970 cuts through the rainforests giving easy access to most parts of these richly biodiverse forests.

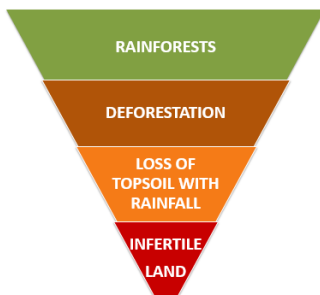
- Use of aircrafts has brought the remotest parts of the rainforests within easy reach.

Displacement of people



- With the clearing of the forests, the indigenous people are displaced from their traditional lands and forced to settle elsewhere.
- Being forcibly uprooted from the place that has been theirs for generations has resulted in physical, emotional and mental problems.
- In the new areas, the displaced people make an attempt to continue with their traditional occupations and the unique form of 'slash and burn' cultivation.

Long-term effects



- Human activities are threatening the species-rich, biodiverse rainforests.
- Deforestation removes protection to the rich topsoil which is washed away during the typically heavy rains.
- Once the nutrients in the topsoil are lost, the land becomes infertile and unproductive.

Developmental activities have had an adverse impact on the indigenous population of the Amazon.

Image sources

1. Amazon Basin: https://commons.wikimedia.org/wiki/File:Amazonia_basin.jpg –Attribute to Paulo Henrique Crepaldi

2. Rainforest green canopy -

https://www.flickr.com/photos/ana_cotta/3066923444/in/photolist-8jT4T9-4yCBv6-5wUzRn-5F1Muq-4tTyaq-oZknze-58vbHe-iFF1DH-ig4VJ-iFJPk3-4tTvXi-5kNdoG-KvtHxA-iiqkNz-iiq6d3-iipTxw-6aNxNR-iipyqc-iipTwE-zGwD8D-i6GXWh-hLLc48-55oKRJ-2itwZyD-4yrGiQ-54LYPv-4yKYGA-4tTxZL-eVERFr-zHqCkD-5ammzX-yKDvqP-4yrGiw-zq1K8V-4yu9vm-4tXz9q-4T1DPw-5J2LCw-zpUcWE-sjeSk9-2ipaBjh-cJpatA-54LXm6-5ammBV-iipTHm-5eUYrE-cJp9wU-2ipazyU-2ip83bu-cJp8UQ/ / **(By Ana_Cotta) (CC BY 2.0)**

3. Forest fire: <https://www.publicdomainpictures.net/en/view-image.php?image=211111&picture=forest-fire>

4. Cutting trees: <https://pixabay.com/photos/lumberjack-man-tree-climb-cases-199693/>

5. Paper Manufacture: <https://pixabay.com/photos/factory-warehouse-machinery-700593/>

6. Construction of house: <https://pixabay.com/photos/home-construction-frame-wood-home-4899200/>

7. Dam construction-Hydro –Electric Project: <https://pixabay.com/photos/dam-the-dnieper-hydroelectric-3369500/>

8. Mining: <https://pixabay.com/photos/brown-coal-open-pit-mining-mibrag-4583727/>

9. Cattle-rearing: <https://pixabay.com/photos/herd-bitch-nellore-many-cows-930825/a>

10. Agriculture: Cultivation of Soybean: <https://pixabay.com/photos/soybean-field-farming-field-1610754/>

11. Road: https://www.flickr.com/photos/ana_cotta/2849457332/in/photolist-5kNdoG-KvtHxA-iiqkNz-iiq6d3-iipTxw-6aNxNR-iipyqc-iipTwE-zGwD8D-i6GXWh-hLLc48-55oKRJ-2itwZyD-4yrGiQ-54LYPv-4yKYGA-4tTxZL-eVERFr-zHqCkD-5ammzX-yKDvqP-4yrGiw-zq1K8V-4yu9vm-4tXz9q-4T1DPw-5J2LCw-zpUcWE-sjeSk9-2ipaBjh-cJpatA-54LXm6-5ammBV-iipTHm-5eUYrE-cJp9wU-2ipazyU-2ip83bu-cJp8UQ-4tXyxu-2ip83q2-2ipazUi-2ipaA8K-cJp8Cw-2ipaAcx-2ipbEys-2ip864t-2ip86Gx-2ipaDuu-2ip87oC **(By Ana_Cotta)**

12. Airplane: <https://pixabay.com/photos/airbus-a400m-plane-airforce-3481139/>

13. Deforestation: <https://www.flickr.com/photos/hinkelstone/48610743566/in/photolist-2h4yLuo-2hbhE1o-2hbkhGe-2hYRB1Z-2hYVfaB-2hbhD7z-wjvGz7-262Foxs-dAwqLo-h6WSoc-2hYVZAo-6uwQXX-2hYVf87-dAqXaZ-2hYvigQ-dAqX8r-dAqXe8-dAwqGu-6ieGFi-UxmPzR-2hbkhE5-2hbkhJJ-2hbkgVK-2hbhCM1-6uB1Ro-dAqX6V-dAqX5B-6uB2w9-6uwRtV-6uwRQc-2hYRB4u-8L7hGk-6uB2ES-6uwR4i-6uwRSR-2hYU4Mt-2hYVfqX-2hYRB51-234VP4h-6uwQv4-6uwQ7H-6uwPft-6uwQtk-6uwQEt-6uB1SY-6uB16E-jho2io-6uwQaK-6uB22m-6uB1Mw> **(By quapan)**

14. Cutting Trees: <https://pxhere.com/en/photo/741323>

15. Migration: https://commons.wikimedia.org/wiki/File:Brazilian_Indian_tribe_kids.jpg (By Ben Sutherland)

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Resources	Life In the Amazon Basin, Life In the Amazon Basin

11. QA_The Tropical Amazon Basin

The Tropical Amazon Basin

Quest 1. Fill up the blanks

- Tropical regions have _____ and _____ climate. (Ans: hot; humid)
- The River Amazon is in the continent of _____. (Ans: South America)
- Low night temperature accompanied by _____ is characteristic of the climate of Amazon Basin. (Ans: humidity)
- Very _____ rain in the Amazon Basin has led to the growth of _____ forest. (Ans: heavy; dense)
- _____ are houses in the rainforest with steep and slanting roofs. (Ans: Maloca)
- All parts of the rainforest became accessible to man after the _____ highway was built in 1970. (Ans: Trans-Amazon)

Quest 2. Think and answer

- Why is the temperature very high throughout the year in the tropical regions?



(Ans: Tropical regions experience direct sunlight on the Equator and the region also experiences high temperature.)

The high rainfall received throughout the year combines with the heat to keep the humidity high.)

b) Name and explain the unique form of agriculture practised by the people of the Amazon Basin.



(Ans:

- The people of the rainforest practise 'Slash and burn' agriculture.*
- In this form of cultivation, part of the forest is cleared of vegetation which is then burnt.*
- The nutrient-rich ash which is a residue improves the quality of the soil.*
- Crops are grown on this cleared land for some years until the soil becomes less productive.*
- Then this land is left uncultivated to regenerate and people move on to a new piece of land where the process is repeated.)*

c) Why are developmental activities in the Amazon Basin destroying the rainforests?



(Ans:

- Developmental activities involve clearing of land leading to deforestation.*
- With no roots to keep the valuable topsoil in place, it gets washed away when it rains, resulting in nutrient-poor land that cannot support vegetation.)*

d) Which crops do the people of the rainforest cultivate?



(Ans:

- *The main crop is manioc (cassava / tapioca), which is the staple food.*
- *They also cultivate pineapple and sweet potato as food crops.*
- *Cash crops cultivated include maize, cocoa, banana and coffee).*

Quest 3. True or False

- a) Subtropical regions have rainfall almost every day. *(False, tropical regions have rainfall every day.)*
- b) Tropical regions have very cold winters. *(False, tropical regions do not have seasons. They experience hot and wet weather through the year.)*
- c) Tropical rain forest thrives on the heavy rain that occurs in the region. *(True)*
- d) Thick undergrowth in the rain forest makes the forest almost inaccessible. *(True)*
- e) In olden times the deep interiors of the forest could only be reached through the river. *(True)*

Quest 4. Name the flora and fauna in the following images

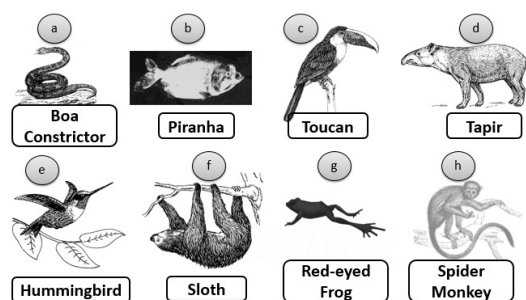


Image sources

1. **Tropical climate – CC** - <https://pixabay.com/photos/rain-forest-palm-trees-river-273780/>
2. **Slash and Burn – CC** - https://commons.wikimedia.org/wiki/File:Amazon_slash_and_burn_agriculture_Colombia_South_America.jpg (**Attribution : M Tracy Hunter**)
3. **Deforestation – CC** - <https://pixabay.com/photos/deforestation-forest-wood-cut-405749/>
4. **Cassava – CC** - <https://pixabay.com/photos/yuca-cassava-vegetable-food-1353258/>
5. **Pineapple – CC** - <https://pixabay.com/photos/pineapple-fruit-tropical-fruits-5108775/>
6. **Banana – CC** - <https://pixabay.com/photos/bananas-fruit-delicious-sweet-3117509/>
7. **Boa Constrictor – CC** - <https://openclipart.org/detail/223222/boa>
8. **Piranha Fish – CC** - <https://openclipart.org/detail/299621/piranha>
9. **Toucan – CC** - <https://openclipart.org/detail/124117/toucan>
0. **Tapir – CC** - <https://openclipart.org/detail/124069/tapir>
1. **Hummingbird – CC** - <https://publicdomainvectors.org/en/free-clipart/Hummingbird-image/62111.html>
2. **Sloth – CC** - <https://openclipart.org/detail/123961/sloth>
3. **Red-Eyed Frog – CC** - <https://www.publicdomainpictures.net/en/view-image.php?image=225985&picture=frog>
4. **Spider Monkey – CC** - <https://freessvg.org/monkey-on-a-branch>

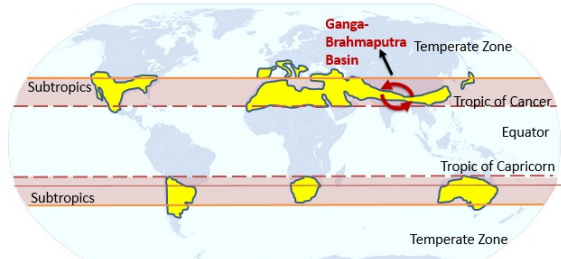
Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Assessments	Resources	Life In the Amazon Basin, Life In the Amazon Basin

12. MS_The Ganga-Brahmaputra Basin

The Ganga-Brahmaputra Basin

Note to the teacher: The asset can be introduced with these words: " Now, let us learn about the subtropical regions, especially the Ganga-Brahmaputra Basin of India."

Subtropical regions of the world



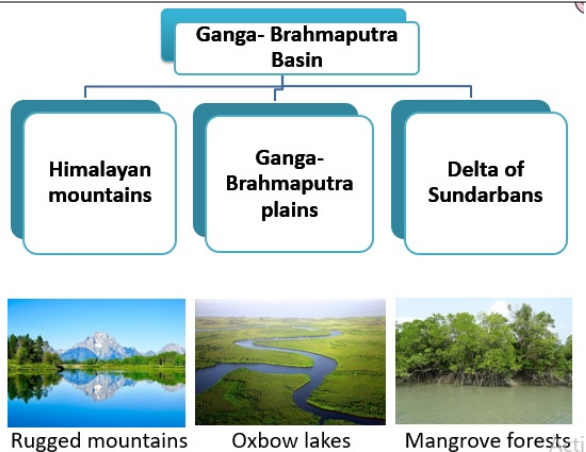
- The subtropics lie between the Tropic of Cancer and the Temperate Zone in the Northern Hemisphere, and between the Tropic of Capricorn and the Temperate Zone in the Southern Hemisphere.
- The Ganga-Brahmaputra Basin is located in the subtropical region, between the latitudes of 10° N and 30° N.

The Ganga-Brahmaputra Basin



- The Ganga-Brahmaputra Basin is the area drained by the tributaries of the rivers Ganga and Brahmaputra in the Indian subcontinent.
- Tributaries of the River Ganga include Ghagra, Son, Chambal, Gandak and the Kosi.
- Tributaries of the River Brahmaputra include the Dibang, Luit, Subansiri, Kameng, Manas, Sankosh, Teesta and Dhansiri.
- The River Brahmaputra is known by many other names - Yarlung Tsangpo in Tibet, Jamuna in Bangladesh, and as the Luit in Assam and Dihang in Arunachal Pradesh.
- The Ganga-Brahmaputra Basin covers mostly the states of North and Northeastern India.

Main features of the Ganga- Brahmaputra Basin



The Rivers Ganga and Brahmaputra both have their source in the Himalayas and both drain into the Bay of Bengal.

The dominant landforms of the Basin:

- Himalayan mountains and foothills in the north
- The fertile Ganga and Brahmaputra plains which are characterised by many ox-bow lakes.
- Delta of the Sundarbans in the east

Climate

- The Basin experiences a diversified climate, but in the plains it is mostly monsoon type of climate.
- Between the middle of June to mid-September is a time of high precipitation.
- The region experiences hot summers and cool winters; this climate is typical of the subtropical region.

The location of the Ganga-Brahmaputra Basin in the subtropics determines its climate.

Image sources:

- **World map:** <https://pixabay.com/vectors/world-map-globe-geography-earth-47959/>
- **Map of India:** SSSVV Gallery-Key word-India Map
- **Himalayas:** <https://pixabay.com/photos/oxbow-lake-grand-tetons-lake-5311843/>
- **Oxbow lake:** <https://pixabay.com/photos/river-bed-canal-landscape-river-1081967/>

- **Sundarbans:** <https://pixabay.com/photos/mangroves-sundarbans-forest-1225627/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

13. DD_Touching our Lives from Afar

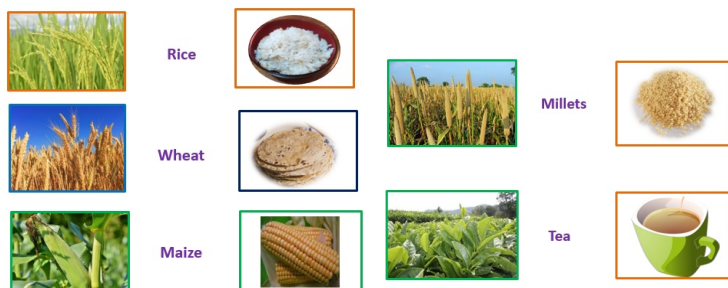
Touching our Lives from Afar

Note to teacher:

The teacher may introduce the asset by asking the students “Are you all aware that your daily food and many commonly-seen objects come from the Ganga-Brahmaputra Basin? Let us see how the activities that take place in the Basin touch our daily lives”.

The main activity of the people of the Ganga-Brahmaputra basin is agriculture.

Many products that are used in our daily lives come from this region.



- Food - rice, wheat, maize, millets
- Beverage - tea
- Sugarcane –
- * Sugar
- * Molasses (gur)
- * Bagasse, the residue that remains after sugarcane juice is extracted has many uses such as animal feed, briquettes which can be burnt as fuel, and eco-friendly containers.



- Silkworm-rearing silk fabric
- Bamboo - baskets, handicrafts, paper
- Jute - sacks for storage and transportation
- Trees - sal and teak trees give us timber for furniture and building construction. Peepul trees have many medicinal benefits.

Image sources

1. **Rice:** pixabay.com/photos/rice-cup-food-healthy-table-meal-5028715/
2. **Chapati:** <https://pixabay.com/photos/maiz-tortilla-food-mexican-mexico-5135234/>
3. **Maize:** <https://pixabay.com/photos/corn-on-the-cob-corn-sweet-corn-57287/>
4. **Paddy:** <https://pixabay.com/photos/rice-rice-field-paddy-agriculture-3516093/>
5. **Wheat:** <https://pixabay.com/photos/wheat-grass-barley-autumn-harvest-863392/>
6. **Maize:** <https://pixabay.com/photos/corn-corn-on-the-cob-vegetables-3560744/>
7. **Millets:** <https://pixabay.com/photos/millet-food-grain-golden-yellow-3879976/>
8. **Millets:** <https://pixabay.com/photos/pearl-millet-pennisetum-glaucum-204105/>
9. **Tea:** <https://pixabay.com/vectors/cup-tea-green-drink-herbal-hot-303237/>
10. **Tea Plantation:** <https://pixabay.com/photos/tea-tea-plantation-plants-sheet-1822867/>
11. **Silkworm:** <https://pixabay.com/photos/silkworm-silk-worm-cocoon-closeup-931555/>
12. **Silk:** <https://pixabay.com/photos/fabrics-silky-colors-250330/>
13. **Bamboo:** <https://pixabay.com/photos/bamboo-forest-green-plant-wood-20936/>
14. **Baskets:** <https://pixabay.com/photos/wicker-baskets-weave-willow-61254/>

15.**Jute**: https://commons.wikimedia.org/wiki/File:Jute_field.jpg- Attribute to Malcom Manners

16.**Bag**: <https://pixabay.com/photos/jute-shopping-bags-wholesale-2497022/>

17.**Sal**: <https://pixabay.com/photos/salix-caprea-goat-willow-850739/>

18.**Teak**: <https://pixabay.com/photos/teak-plantation-tectona-grandis-289157/>

19.**Peepul**: <https://www.needpix.com/photo/download/1512906/ficus-peepul-tree-leaves-nature-ficus-religiosa-free-pictures-free-photos-free-images>

20.**Peepal tree leaves**: <https://pxhere.com/en/photo/1168617>

21.**Mortar**: <https://pixabay.com/photos/mortar-crushed-hand-bowl-container-1170665/>

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Day-to-day Relevance	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

14. MS_People of Ganga-Brahmaputra Basin

People of Ganga-Brahmaputra Basin

Terrain determines distribution of population

- The Ganga and Brahmaputra rivers journey from their sources in the Himalaya mountains to the Bay of Bengal, through many different landforms.
- The main features of the Ganga-Brahmaputra basin are the mountainous regions, the vast plains and the delta.



Pics: Mountainous, plains and deltaic regions

- This widely varying terrain determines how the population is distributed, how the people live and the vegetation that can be found across the Basin.
- This basin runs parallel to the Himalayan mountain ranges and covers the Union Territory of Jammu and Kashmir, and states of Punjab, Uttarakhand, Uttar Pradesh, Bihar, Madhya Pradesh, West Bengal, Arunachal Pradesh and Assam.

Mountainous region



Pics: Thinly-populated mountainous region, terrace farming, coniferous fir tree

- Few people live in the mountainous regions since the slopes are steep and it is difficult to live there.
- On the more accessible slopes agriculture is done through terrace farming. Flat terraces are created like steps, so that water and soil are retained and not lost due to erosion or run-off.

Vegetation

- The mountainous region has coniferous trees such as pine, deodar and fir that grow well in lower temperatures and on slopes.

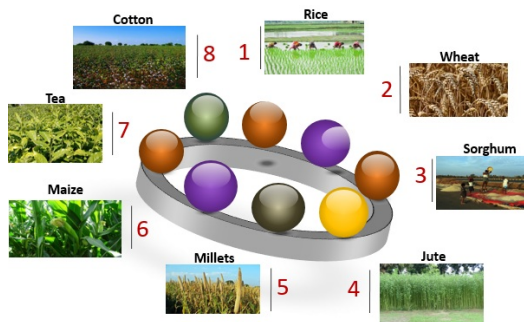
Plains region



Pics: Crowded plains region

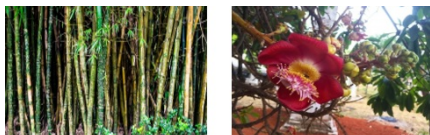
- The fertile and flat plains of the Ganga-Brahmaputra Basin provide the most suitable land for human settlement.
- Here the population density is very high and the plains are among the most densely-populated areas of the world.
- Several big towns and cities such as Prayagraj (formerly Allahabad), Kanpur, Varanasi, Lucknow, Patna and Kolkata, all with population of more than 10 lakh, are located along the banks of River Ganga.
- The major cities on the banks of the Brahmaputra include Guwahati, Tezpur, Jorhat and Dibrugarh.
- The River Brahmaputra satisfies most of the water requirement of Assam.
- The people of the plains are of diverse origin and culture.
- The staple diet of people in the basin is fish and rice. A wide variety of fish are found in the river such as rohu, catla and hilsa.

Occupation



- In the plains the main occupation is agriculture since the soil is rich and fertile.
- The rivers offer plentiful supply of water and support many irrigation works.
- The main food crop grown for consumption is rice which is cultivated in places with abundant rainfall that meets paddy's high requirement for water.
- Wheat is also cultivated extensively in the plains.
- Other cereals such as millets and sorghum are grown along with gram and maize.
- Cash crops grown include jute, sugarcane, tea and cotton. The tea grown in West Bengal and Assam is particularly well-known.
- Silkworms are reared in states such as Assam, well-known for its Muga silk.

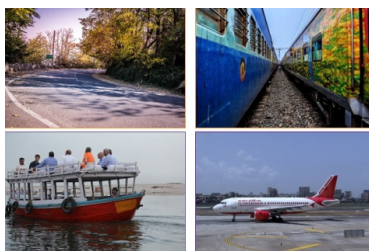
Vegetation



Pics: Bamboo and saal.

- Tropical deciduous trees that require high temperatures and humidity, are found in the plains. These include teak, saal and peepul trees.
- The Brahmaputra plain is rich in bamboo that grows in abundance, thriving in the warm moist conditions of the region.

Transport and communication



- The four major ways of transportation through – air, rail, road and water - are well

developed in the Ganga-Brahmaputra plains.

- The roadways and railways connect different places in the plains.
- The inland waterways are an effective means of transport along the rivers. Kolkata is an important port on the Hooghly river. Towns alongside the Brahmaputra are connected by the river.
- A large number of airports in the plains offer domestic and international flight connections.

Delta region



Pics: Agriculture, fishing, wildlife tourism

- The main occupations of the people of the deltaic region are agriculture and fishing.
- Wildlife tourism is also an important means of livelihood for those who live here.

Vegetation

- The Ganges and Brahmaputra rivers share the delta area.
- This region is famous for its mangrove forests which thrive where the freshwater of the two rivers mingles with the saltwater of the Bay of Bengal.

Glossary:

Density of population: *It is the number of persons living in 1 square kilometre of area.*

It is also known as population density.

Image sources

- ***Mountain people:***

<https://www.flickr.com/photos/downstream/8157594981/in/photolist-pktTcJ-meHr5y-6sJTbA-DAVVfy-p5TiAF-pnoBbH-d2YWKb-dqV7Hw-67uQx2-b5Tk6X-b5TV3D-pFDG5s-p2fyZn-awhiAK-b5BxNi-b5AJqr-pFABYy-JnhXDX-4Lz1eu-p5Tyjj-6UKk4y-86FRGD-dqUXY6-6DkCjs-9L2fEz-b5TmVk-d2YX9w-4QjWZB-6tcE4M-6F2xCx-4QjZLV-b5Xjha-6UEWKF-7CBisk-b5XGXR-4Qk2nv-67uQXk-gt5zB5-d2YXkS->

d2YXoJ-uBAHJ7-b5T8TB-HrfYWT-d2YXts-dqRNMk-b5Auw6-JifjTg-d2YWQb-d2YWWo-d2YXyW (**By Scott Matton**)

- **Plain region:** Ganga: <https://pixabay.com/photos/ganga-ghats-varanasi-ganga-river-5268994/>
- **Delta:** <https://www.flickr.com/photos/chingfang/296331121/in/photolist-sbLVg-5xAx2i-sbSpG-5xELW9-5xEUTW-sh3t9-sbgyk-sgMRy-sgQmJ-sh3tq-5xELjS-5xArXt-5xER9L-sbLVb-sgYkr-sbLVn-edHhfL-5xAxWr-sgYkn-sbLVj-5xAybX-sh75h-sbSpD-sbgyC-sbSpN-sgYkj-sbgyj-5xES3Y-5xETmj-WQaLBF-sh3tt-5xEVC9-sgYkt-sh3tf-sgYks-sbgyg-edBBwK-sbgyn-sh75f-sgQmU-sgQmR-sh3tm-sbLVe-sh3ti-sh75a-sh75m-sgQmN-2gWd6wG-WYZnLg-5xvA1m> (**By Frances Voon**)
- **Fir:** <https://pixabay.com/photos/fir-tree-fir-cones-cones-tree-1330187/>
- **Terrace farm:** <https://www.flickr.com/photos/97235261@N00/2877646816> (**By Koshy Koshy**)
- **Mountainous region-Village:** <https://pixabay.com/photos/uttarakhand-india-village-hills-2744369/>
- **Crowded plains region:** <https://pixabay.com/photos/pragraj-kumbh-crowd-people-india-4063281/>
- **Rice:** <https://pixabay.com/photos/field-rice-farm-rice-fields-5416600/>
- **Wheat:** <https://pixabay.com/photos/wheat-spike-cereals-grain-field-3524861/>
- **Sorghum:** <https://pixabay.com/photos/sorghum-hand-winnowing-jowar-272935/>
- **Millet:** <https://pixabay.com/photos/pearl-millet-pennisetum-glaucum-204099/>
- **Jute:**
[https://commons.wikimedia.org/wiki/File:Jute_Field_Bangladesh_\(7749587518\).jpg](https://commons.wikimedia.org/wiki/File:Jute_Field_Bangladesh_(7749587518).jpg)
–Attribute to Malcolm Manners
- **Maize:** <https://pixabay.com/photos/corn-corn-plants-cornfield-4543558/>
- **Tea:** <https://pixabay.com/photos/tea-tea-garden-plant-tiny-tree-2608238/>
- **Cotton:** <https://pixabay.com/photos/cotton-cultivation-karnataka-plants-223733/>
- **Bamboo:** <https://pixabay.com/photos/nature-forest-bamboo-plants-hawaii-1284410/>
- **Peepul :** <https://pixabay.com/photos/bodhi-leaves-dewdrop-on-leaves-dew-1885455/>
- **Railway:** <https://pixabay.com/photos/indian-railway-train-travel-2405928/>
- **Road:** <https://pixabay.com/photos/road-mountain-autumn-trees-path-2915338/>
- **Boat:** <https://pixabay.com/photos/ship-sail-river-ganga-boat-water-4582737/>
- **Aeroplane:** <https://pixabay.com/photos/airport-mumbai-aircraft-air-india-385294/>
- **Agriculture:** <https://www.flickr.com/photos/ankurp/26552468009/in/photolist-jP3VRF-Gsmkb8-21iUuRo-21kZKaY-21iUuAy-Dg5HbG-21kZRYN-GsmjJM-Gsmjvk-21kZS5j-21iUv2d-GsmjUM-Z18toh-21kZKrk-GsmkEz-Dg5KGy-21kZJv1-21iUwiS-21kZRuG-Dg5JBs-65gsGP-65kKe3-21kZJyN-21iUvVh-Dg5HS1-GsmhWD-Dg5Hnd-21kZKuL-GsmvJc-21oMQHB-GsmiFK-Gsmjo6-21kZKiU-21iUr3G-GsmiND-5xAk8c-BYE1qo-ZixTTU-21iU8X9-21iU7r3-21iU5tL-21kZuPo-21kZud3-Ziy2io-Ziy2Cm-Dg5wU9-ZixZi1-C1XQxD-rhAMj4-jP4DG4> (**By Ankur Panchbudhe**) (**CC BY 2.0**)

- **Fishing:** <https://pixabay.com/photos/fishermen-fishing-sea-net-83031/>
- **Tiger:** <https://www.flickr.com/photos/27568572@N06/36748925106/in/photolist-XZnR81-XLhuVu-WXVT3B-5xEJWQ-Y65hYo-YcaJEP-Y7egsL-X9XLaE-WZ4Aep-Y5P7nU-65hcop-5xERB9-65myhS-65mu6Y-65hcsk-65mv8s-6jJ9QB-XNvsQQ-X6w2eY-WZK98Y-X8M2y3-YqQihT-K7Y879-JhkbX4-2cFUQYX-C9C45z-JKS1cj-2k7aahj-4DYCj6-2iE8mUF-JJNhg7-KeGrqH-K7QbmC-QhQMQ8-WZ6A7X-K9Gyjt-zaNPiQ-4J8PR2-BGuQsq-BA75oH-4Nm3FJ-joEajo-QjnC96-qwx3U3-t4hK8F-Bc7Y7W-X8M64u-Xa3E6L-65hg8r-65mtcw> **(By Sagar) (CC BY 2.0)**

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Main Script	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

15. SA_Ganga and Brahmaputra Rivers

Ganga and Brahmaputra Rivers

Note to teacher:

The activity can be introduced with these words, “Let us now have an activity in which you will mark the location of the Ganga and Brahmaputra rivers and their tributaries, and a few major cities located on their banks”.

AIM: On an outline map of India the students will mark the Rivers Ganga and Brahmaputra major tributaries of each river, 2 important cities and the states in which these cities are located.

MATERIAL REQUIRED:

Each student will need:

- A blank political map of India
- Felt pen or colour pencils (4 different colours)
- Atlas

SETTING FOR THE ACTIVITY

Indoor

TYPE OF ACTIVITY:

Map-work

PROCEDURE:

- The teacher should show the PPT to the students.
- The blank maps are distributed among the students.
- The activity will be done individually. Students may refer to the atlas or the textbook.
- On an outline map of India, students will:

1. **mark the rivers and major tributaries of the Ganga and the Brahmaputra**

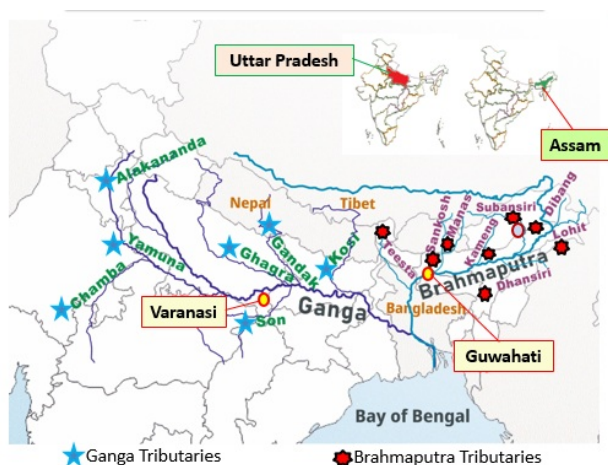
(Ganga- tributaries Alaknanda, Yamuna, Ghagra, Son, Chamba, Gandak, Kosi;

Brahmaputra -Dibang, Luit, Subansiri, Kameng, Manas, Sankosh, Teesta and Dhansiri).

Two different colours should be used- one colour for River Ganga and its tributaries, another colour for River Brahmaputra and its tributaries

2. using a 3rd colour, **mark the following cities** -- Varanasi and Guwahati

3. using a 4th colour, **name the states** in which these cities are located.



- After the map activity, the worksheets are distributed for completion to the students.
- Upon completion, the worksheets can be exchanged between the students and corrected.

- Teacher can show Slide Nos. 6 and 7 of the PPT with Worksheet answers (or read out correct answers).
- Corrected worksheets can be attached to the respective student's notebook.

OBSERVATION:

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

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

Precautions:

- None

Troubleshooting:

- When the PPT is being shown before the activity, care should be taken to only show the slides pertaining to the map activity, and not the worksheet answers.

If time permits, this WORKSHEET section in the PPT may be shown after the students complete the worksheet.

WORKSHEET :**Note to the teacher:**

- *The following worksheet should be given to the children after completion of the map activity.*
- *If the students are unable to complete the worksheet in the class, it may be given as homework.*

A. Unscramble the following jumbled words. These are names of states covered by the Ganga-Brahmaputra Basin.

WSET GLANEB

KIKSIM

RALUCHAAN SDPEARH

AAMSS

AHIRB

RATANHUKTA

Answers: WEST BENGAL, SIKKIM, ARUNACHAL PRADESH, ASSAM, BIHAR, UTTARAKHAND

B. Think and answer

The population density in cities, such as Prayagraj (formerly Allahabad), Varanasi, Tezpur and Kolkata is very high. Why do you think this is so? Give reasons.

Suggested answers:

These cities, located near the rivers in the plains, attract people because

- *adequate supply of water is ensured*
- *fertile soil of the plains is ideal for farming*
- *flat terrain makes most activities, such as transportation and construction, easier.*

CONCLUSION: The students trace the journey of the Rivers Ganges and Brahmaputra from source to mouth, showing the location of some major cities along the way.

Image source

Map of India: SSSVV Gallery-Keyword-map of India

Small India map- <https://pixabay.com/illustrations/map-india-country-geography-5505725/>

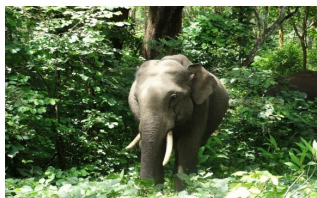
Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

16. MS_Wild Animals of Ganga-Brahmaputra Basin

Wild Animals of Ganga-Brahmaputra Basin

Notes to teacher: *The asset can be introduced with these words, “The Ganga-Brahmaputra Basin is home to many different kinds of wildlife including mammals, reptiles and fish.”*

Diverse habitats for wildlife



Pic: Elephants in the forest of the plains, deer among deltaic mangroves, rhinoceros in open grassland

- In the Ganga-Brahmaputra Basin the plains and delta regions are especially rich in diverse wildlife.
- This diversity is influenced by the varied habitats found in the Basin.

Wildlife in the plains



Pic: Gaur, monkey, gharial

The flat, open land of the Ganges plains is home to large mammals such as the elephants, many kinds of antelopes and deer, gaur (Indian bison) and water buffalo.

- Various monkeys are commonly seen. The only ape found in India, the Hoolock Gibbon, can be found in the forests of Northeastern India.
- Predators, including big cats such as the majestic Bengal tiger, can be seen in the protected reserves.
- The Indian one-horned rhinoceros is frequently sighted in the grasslands of the Brahmaputra plain in Assam.
- Reptiles such as the crocodile, the gharial and many kinds of aquatic lifeforms are found in the abundant water-bodies such as the rivers, lakes and the Bay of Bengal.
- The blind Gangetic dolphin, also known as the ‘susu’ lives in the freshwaters of the

Ganges and Brahmaputra Rivers and is now an endangered species.

- The rivers are home to edible fish including the mahseer, rohu, catla and the prized delicacy of the Brahmaputra River, the hilsa. Fish with rice is the staple diet of the people of the Brahmaputra plains.

Wildlife in the delta region

Pic: Bengal tiger

- The mangrove area of the deltaic Sundarbans is a rich and unique wildlife habitat providing shelter to many wild animals including the Bengal tiger.
- The estuarine crocodile, gharial and the Olive Ridley turtle can be found here.

The Ganga-Brahmaputra Basin with its varied terrain is home to a great variety of wildlife.

Image sources

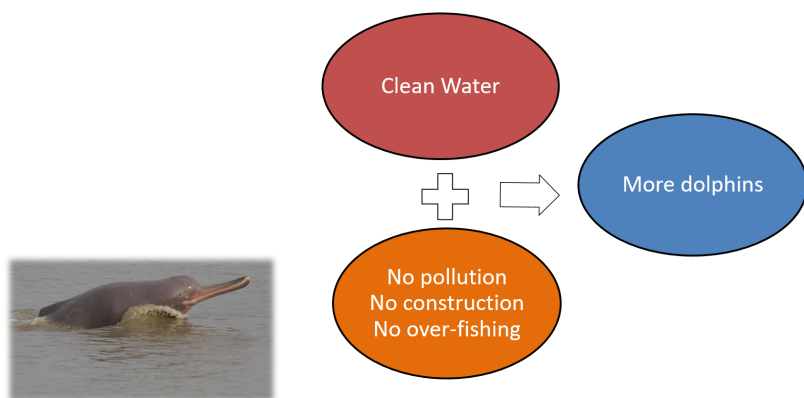
- **Elephant:** <https://pixabay.com/photos/indian-elephant-elephants-jungle-393694/>
- **Rhinoceros-Kaziranga:** <https://pixabay.com/photos/rhino-rhinoceros-india-kaziranga-4086844/>
- **Deer-Sundarbans:** <https://pixabay.com/photos/deer-sundarban-life-tourism-3673017/>
- **Gaur:** <https://pixabay.com/photos/wild-buffalo-gaur-buffalo-wild-2081931/>
- **Monkey:** <https://pixabay.com/photos/monkey-animal-zoo-primate-mammal-5761535/>
- **Gharial:** <https://pixabay.com/photos/gharial-gavialis-gangeticus-gavial-3981863/>
- **Tiger:** <https://www.needpix.com/photo/download/296823/bengal-tiger-tiger-standing-wild-animal-big-cat-looking-wildlife-nature-zoo>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

17. IA_The Gangetic Dolphins

The Gangetic Dolphins

Importance of dolphins



- The Gangetic dolphin is one of the world's five species of dolphins that inhabit rivers
- Dolphins are found in clean and fresh water only, and their presence indicates a healthy river ecosystem
- A declining dolphin population indicates that the freshwater eco-system is degraded and under threat from factors such as pollution, dam construction and excessive fishing.
- The Gangetic Dolphin found in the Ganga-Brahmaputra rivers in India, Nepal and Bangladesh, is blind and can sense only the direction of light; it navigates using sound waves
- It is locally known as 'susu' which is the sound they produce while breathing.

Threats facing the dolphins



Dolphins and their freshwater habitats are under threat of extinction due to human activity

1. Pollution: Agricultural and industrial contaminants pollute the river threatening the

dolphins

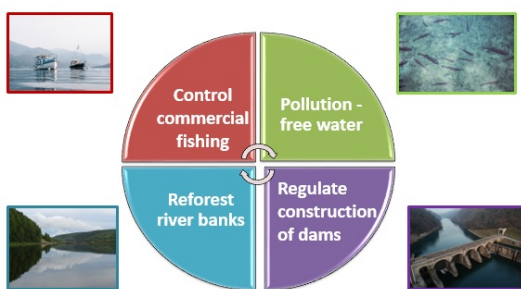
2. **Construction of dams:** The natural flow of water is disturbed when humans build dams and barrages across the rivers

3. **Over-fishing:** Fishing of dolphins and smaller fish, which dolphins feed on, is threatening their survival

4. **Other factors:** Some other factors that affect dolphins adversely are

- changes in composition of water (e.g. increase in salinity due to rising sea levels in the Sundarbans)
- increased noise levels due to motorised fishing

Some measures to ensure dolphins thrive



- Reduce agricultural and industrial pollution by using natural fertilisers and pesticides, and by treating all industrial sewage before it is released into the water
- Regulate construction of dams and barrages
- Reforest river banks
- Control commercial fishing activity

Protected species

- In 2009, the Gangetic dolphin was declared the National Aquatic Animal.
- Due to this protection, the population of dolphins has since increased.
- India's growth is linked to its river basins. If dolphins survive, we get a clean river ecosystem and hence we survive too.

Protection of the Gangetic dolphin will ensure the health of not only dolphins, but the entire river ecosystem.

Image sources

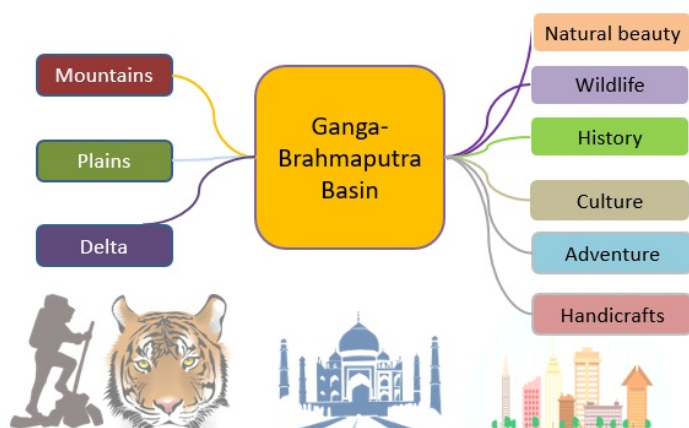
- **Dolphin:** https://en.wikipedia.org/wiki/South_Asian_river_dolphin#/media/File:Platanista_gangetica_noaa.jpg (By Zahangir Alom)
- **Dam:** <https://pixabay.com/photos/hoover-dam-las-vegas-dam-hoover-2355811/>
- **Industrial waste:** <https://www.flickr.com/photos/48722974@N07/5115413126> (by **eutrophication&hypoxia**)
- **Motorboat:** <https://pixabay.com/photos/fishing-lake-fisherman-boat-5111824/>
- **Fishing:** <https://pixabay.com/photos/fish-fishermen-fishing-net-fishing-3062034/>
- **Fishing:** <https://pixabay.com/photos/boat-fishing-lake-mountain-italy-4119276/>
- **Clean water:** <https://pixabay.com/photos/fish-underwater-marine-marine-life-690227/>
- **Dam:** <https://pixabay.com/photos/dam-adda-adda-river-4029032/>
- **River bank:** <https://pixabay.com/photos/the-vishera-river-crossing-landscape-2865253/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Interesting Asides	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

18. MS_Tourism in Ganga-Brahmaputra Basin

Tourism in Ganga-Brahmaputra Basin

Note to the teacher: The teacher can introduce the asset with these words, “Tourists from all over the world visit India, attracted by her unique and varied attractions. Let us see what these are.”

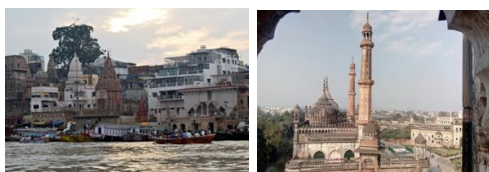


- Tourism has developed greatly in the Ganga-Brahmaputra Basin.
- The Basin area is rich with places that cater to different interests such as historical monuments, wildlife, beautiful landscapes, cultural heritage, adventure sports and shopping.
- The mountains attract tourists interested in outdoor activities such as trekking and mountaineering.

The mountains also have places of religious significance such as the Gangotri, which is the source of the River Ganges.

- The plains have several towns and cities which are of religious and cultural importance. These include cities like Agra, Delhi, Prayagraj (earlier known as Allahabad), Varanasi, Lucknow and Kolkata.
- The Sundarbans in the delta region of the Basin has unique forests that are rich in wildlife.
- Tourists find it convenient to travel to these tourist centres because all places are well-connected by air, rail and road.

Places of religious significance



Pics: Temple in Varanasi, Bara Imambara in Lucknow

- Prayagraj, situated at the meeting-point of the Rivers Ganga and Yamuna, ranks among the most sacred places for Hindus.
- Varanasi is also one of the holiest places for Hindus and is known for the Kasi Viswanath temple and the Ghats which are the steps that lead to the River Ganga.
- Buddhist stupas and temples are found in Uttar Pradesh and Bihar.
- Lucknow is famous for a large mosque known as the Bara Imambara .

Places of historical and cultural significance



Pics: Taj Mahal, Victoria Memorial, Chikankari embroidery

- Taj Mahal, on the banks of river Yamuna in Agra, is one of the Seven Wonders of the World and attracts tourists from all over the world.
- Kanpur is known for its leather crafts.
- Lucknow's *chikankari* embroidery work is acclaimed worldwide. It is also famous for bidriware (silverwork), toys and perfumes.
- Varanasi is also known for its Banarasi silk.
- Kolkata offers boat trips on the Ganges, and is also a launching place to visit the rest of Northeast. The city is known for the colonial-style Victoria Memorial and Howrah Bridge.

Places of natural beauty and wildlife



- Mountainous Arunachal Pradesh is famous for its greenery and scenic beauty. Its unique tribal culture is of great interest to tourists.
- Assam's Kaziranga and Manas are well-known wildlife sanctuaries and the tourists are usually rewarded with a sighting of the famous one-horned rhinoceros, and on lucky days the Bengal tiger too.
- The delta region of the Ganga and Brahmaputra, known as Sundarbans, is famous for its wildlife and unique mangrove forests which shelter wild animals such as the Royal Bengal Tiger too.

Tourism in the Ganga-Brahmaputra Basin provides livelihood to those who live in the region and contributes to the national and local economy.

Image sources

- **Trekking** - <https://pixabay.com/vectors/hiking-walking-trekking-rucksack-307575/>
- **Tiger** -- <https://pixabay.com/vectors/tiger-sumatran-tiger-wildlife-161802/>
- **Taj Mahal** -- <https://pixabay.com/vectors/tajmahal-taj-silhouette-blue-india-48777/>
- **City** -- <https://pixabay.com/vectors/city-town-cityscape-building-urban-4791269/>

- **Lucknow** -- <https://pixabay.com/photos/architecture-travel-building-city-3274968/>
- **Varanasi** -- <https://pixabay.com/photos/ganga-ghats-varanasi-ganga-river-5268994/>
- **Taj Mahal** -- <https://pixabay.com/photos/taj-mahal-india-agra-islamic-5745710/>
- **Kolkata** -- <https://pixabay.com/photos/victoria-memorial-india-kolkata-2394784/>
- **Lucknow--Chikankari--**
https://commons.wikimedia.org/wiki/File:Chikan_embroidery_on_a_saree_pallu.jpg
- **Arunachal Pradesh--** <https://pixabay.com/photos/arunachal-pradesh-parsuram-kund-3875150/>
- **Sundarbans** -- <https://pixabay.com/photos/mangroves-trees-rocks-river-nature-5205415/>
- **Tiger** -- <https://pixabay.com/photos/royal-bengal-tiger-tiger-forest-5109196/>
- **Rhinoceros--** <https://pixabay.com/photos/rhino-indian-rhino-rhinoceros-804414/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

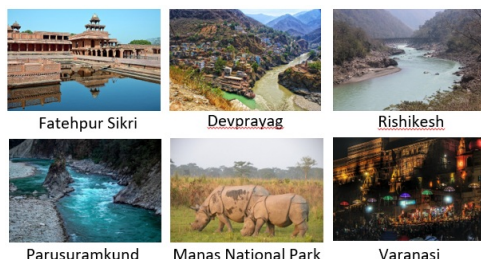
19. DD_A Clean Unpolluted Environment

A Clean Unpolluted Environment

Notes to teacher:

Teacher can introduce the asset with these words, “We want tourists to come to our beautiful country, but do you think they will come if our country is dirty and our rivers are dirty and polluted?”. The teacher can initiate a discussion on this subject, before showing the PPT.

India – blessed with riches



India is a country abundantly blessed with natural, historical and cultural wealth.

It is an attractive destination for tourists, and we welcome them to visit our country.

Main challenges



Pics: Air pollution, municipal waste and river pollution

- However, tourists get discouraged by certain conditions - our air is polluted; municipal waste litters our cities; open defecation is prevalent in rural areas; and even the waters of our sacred rivers are toxic due to pollutants.
- This is not only the responsibility of official bodies entrusted with the duty of maintaining cleanliness, but is also our individual social responsibility.
- India is increasingly giving priority to a clean and unpolluted environment to improve the physical and economic health of the nation.
- Many private and public agencies are actively involved in keeping the environment clean and raising awareness about it.
- One of the foremost public programmes is a nation-wide initiative launched by the Government called the Swacchh Bharat Mission (or Clean India Mission).

Swacchh Bharat Mission



Nation-wide cleanliness drives

Raising awareness

Building toilets

- The Swacchh Bharat Mission launched by the Government of India in 2014, is aimed at eliminating open defecation and improving management of municipal solid waste.
- Many individual and private toilets have been constructed and awareness campaigns launched, to bring about a behavioural change in good sanitation practices.

River pollution



Human waste - sewage



Pollution from daily activity



Industrial contaminants



Agricultural contaminants

- Our major rivers, especially the revered Ganga, are greatly polluted. This poses a serious threat not only to humans but also to the environment.
- Since the population density is high along this river, the Ganga serves more human beings than any other river in the world. In some places the water is unfit even for bathing.
- The main causes of pollution of river waters are:

*Human waste

*Industrial contaminants

*Agricultural contaminants

Namami Gange programme



Sewage treatment

Afforestation

Public awareness

Riverfront development

Industrial waste monitoring

Pic: River Ganga at Rishikesh

- The Namami Gange programme launched by the Government is aimed at reducing pollution, and conserving and rejuvenating the River Ganga.
- Some of the main points of the programme are sewage treatment, riverfront development, afforestation, industrial waste monitoring and increasing public awareness.
- The programme directly involves those living on the riverbanks and helps them find livelihoods that are sustainable. It also works with grassroot institutions such as the urban local bodies and the Panchayats to achieve these goals.

Image sources:

1. **Fatehpur Sikri:** <https://pixabay.com/photos/india-fatehpur-fatehpur-sikri-fort-3092868>,

2. **DevPrayag (at confluence of rivers Alaknanda and Bhagirathi):**
<https://pixabay.com/photos/hills-mountains-landscape-nature-4416880/>
3. **Rishikesh:** <https://pixabay.com/photos/rafting-raft-water-tourism-river-687370/>
4. **Manas National Park:** <https://pixabay.com/photos/manas-rhino-manas-national-park-2120928/>
5. **Arunachal Pradesh:** <https://pixabay.com/photos/arunachal-pradesh-parsuram-kund-3875150/>
6. **Ganga Arati:** <https://pixabay.com/photos/ganga-aarti-varanasi-river-religion-4348549/>
7. **Air pollution:** <https://www.needpix.com/photo/60819/industry-smoke-chimney-pollution-exhaust-gases-industrial-plant-environmental-protection>
8. **Urban waste:** <https://pixabay.com/photos/india-reuse-resources-woman-585078/>
9. **Ganga River:** <https://pixabay.com/photos/haridwar-ganga-india-uttarakhand-687346/>
0. **Clean up drive 1:** SSSVV Gallery –Keyword – Swachh Bharat
1. **Clean up drive 2:** SSSVV Gallery –Keyword – Swachh Bharat
2. **Swacchh Bharat:**
[https://commons.wikimedia.org/wiki/File:Swachh_Bharat_Abhiyan_at_Indian_Naval_Academy,_2016_\(2\).jpg](https://commons.wikimedia.org/wiki/File:Swachh_Bharat_Abhiyan_at_Indian_Naval_Academy,_2016_(2).jpg) (**Attribute to Indian navy - GODL India**)
3. **Public Toilets:** <https://commons.wikimedia.org/w/index.php?curid=36544632> (**By SuSanA Secretariat**)
4. **Ganga River:** <https://pixabay.com/photos/india-banner-system-the-ganges-river-4121356/>
5. **Daily activity:** <https://pixabay.com/photos/ganges-river-varanasi-india-3623503/>
6. **Pollution:** <https://pixabay.com/photos/contamination-water-pollution-lake-4286704/>
7. **Agriculture:** <https://pixabay.com/photos/rice-fields-paddy-cultivation-204111/>
8. **Ganga water front:** <https://pixabay.com/photos/temple-rishikesh-india-hindu-holy-1113888/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Day-to-day Relevance	Resources	Life in Ganga - Brahmaputra basin , Life in Ganga - Brahmaputra basin

20. QA_Climate of Tropical and Subtropical Regions

Climate of Tropical and Subtropical Regions

Q1. MATCH THE FOLLOWING

1	Climate of Ganga-Brahmaputra Basin	a	Susu
2	Staple food in Ganga Basin	b	Brahmaputra plains
3	Arunachal Pradesh	c	On the banks of river Yamuna
4	One-horned rhinoceros	d	Steep slopes
5	Sikkim forests	e	Unique tribal culture
6	Gangetic dolphin	f	Monsoon
7	Taj Mahal	g	Manioc/Cassava
8	Terrace farming	h	Mangroves
9	Mountains of Ganga-Brahmaputra Basin	i	Coniferous trees
10	Delta region	j	Fish and rice
		k	Less population

Ans: 1-f, 2-j, 3-e, 4-b, 5-i, 6-a, 7-c, 8-d, 9-k, 10-h.

Q 2. TICK THE CORRECT ANSWER

1. The River Ganga and River Brahmaputra both flow into:

- A. the Himalayan mountains
- B. Tibet
- C. the Bay of Bengal
- D. the Arabian sea

Ans: C. Bay of Bengal

2. Tourists visit India because the country has:

- A. places of historical interest
- B. places of natural beauty
- C. a variety of handicrafts
- D. all of the above

Ans: D. All of the above

3. The tributaries of the Ganga include:

- A. Meghna, Kosi, Alaknanda, and Ghagra

B. Ghagra, Gandak, Kosi and Son

C. Kosi, Brahmaputra, Gandak and Son

D. Alaknanda, Indus, Kosi and Son.

Ans: B. Ghagra, Gandak, Kosi and Son

4. The climate in the Ganga-Brahmaputra plains is characterised by:

A. humid and hot days all-year-round

B. high rainfall in summers and winters

C. pleasant sunny weather in summer and winter

D. hot summers and cool winters

Ans: Hot summers and cool winters

Q 3. THINK AND ANSWER

a) How is the monsoon rainfall of Ganga-Brahmaputra plains suitable for crop cultivation?

Ans:

- Monsoon rainfall in the Ganga-Brahmaputra plains is limited to 4 months from mid-June to mid-September*
- This precipitation is ideal for paddy and other food crops which need adequate rainfall and humidity*
- However, since the rainfall does not occur throughout the year crops requiring less water and dry climate, can also be grown*

b) The vegetation in the Ganga-Brahmaputra Basin is determined by the landforms and the climate. Explain with examples.

Ans:

- In the mountainous regions where the temperature is low, coniferous trees such as pine, deodar and fir are common*

- *In the plains, deciduous trees such as teak, sal and pipal, thrive in the monsoon climate*
- *Mangrove forests are found in the delta region where the freshwater and seawater mingle*

Q 4, SEE AND ANSWER

Which of these animals are likely to be found in the Ganga-Brahmaputra Basin?



Ans: Indian elephant, Bengal tiger, Gangetic dolphin, Rhinoceros, gharial

Q 5, DIFFERENTIATE

Give five key differences between the Amazon Basin and the Ganga-Brahmaputra Basin.

Ans: Any five of the following suggested answers

		AMAZON	GANGA-BRAHMAPUTRA
1	Location-region, country	Tropical /South America	Sub-tropical /India
3	Climate	Hot and wet	Monsoon climate
4	Season	No season	Hot summers & cool winters
5	Length of day	Days and nights equal	Days longer in summer, shorter in winter
6	Forests	Dense rainforests	Less dense deciduous forests. Bamboo thickets.
7	Rainfall	Very heavy, continuous	Between mid-June and mid-September
8	Fauna	Sloth, jaguar, tapir, anaconda, piranha	Elephant, deer, rhino, Bengal tiger, dolphin
9	Staple crop	Manioc/cassava	Paddy

Note to teacher: If time is too short to complete answering the questions, part of the worksheet (e.g. questions 3 and 5) can be given as homework.

Image sources

Source of Multimedia used in this slide -

1. **Tapir:** <https://pixabay.com/photos/tapir-the-south-american-animal-4571683/>
2. **Elephant:** <https://pixabay.com/photos/indian-elephant-elephants-4741624/>
3. **Jaguar:** <https://pixabay.com/photos/jaguar-animal-zoo-nature-feline-1727406/>
4. **Bengal Tiger:** <https://pixabay.com/photos/royal-bengal-tiger-tiger-forest-5109196/>
5. **Dolphin:** <https://pixabay.com/photos/dolphin-swimming-jumping-reflection-79848/>
6. **One-horned Rhino:** <https://pxhere.com/en/photo/1573337>
7. **Gharial:** <https://pixabay.com/photos/gharial-crocodile-chambal-river-4883131/>
8. **Caiman:** <https://pixabay.com/photos/zoo-reptile-caiman-1335877/>

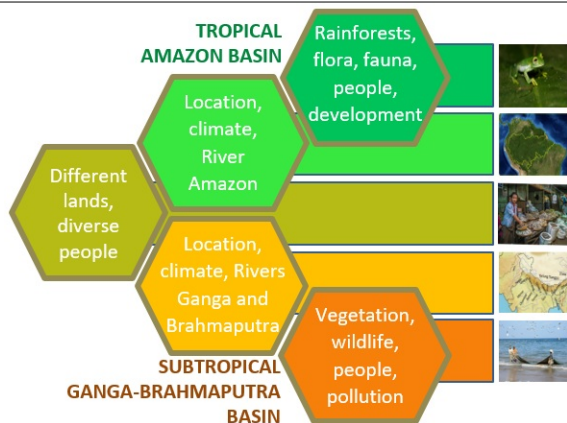
Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Assessments	Resources	Life In the Amazon Basin, Life in Ganga Brahmaputra basin , Life In the Amazon Basin, Life in Ganga - Brahmaputra basin

21. MS_Summary-Human Environment Interactions

Summary - Human Environment Interactions - the Tropical and Subtropical Regions

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

Teacher can introduce the asset by saying, “Let us summarise what we have learnt from the topic - Human Environment Interactions – the Tropical and Subtropical Regions”.



In this lesson on Human Environment Interactions-the Tropical and Subtropical regions, we discussed

- the earth has many regions with diverse topography and climatic conditions; the different people that live in each region look different but all have common basic needs
- the Amazon Basin located in the tropical region, how it is formed by the River Amazon and its tributaries, and its journey from source to the mouth
- the climate in the Amazon Basin and how it influences the growth of rainforests and the flora and fauna found there
- the human settlements in the Amazon Basin; how the indigenous people live and the agriculture they practise
- the present-day threats to the Amazon Basin due to thoughtless development
- the location and climate of the Ganga-Brahmaputra Basin, its rivers and tributaries and varied topography; vegetation and wild animals found there
- the people who live in the Ganga-Brahmaputra Basin, how they live and the crops they cultivate
- the pollution of the environment and some of the initiatives taken to combat it

Image sources:

1.Frog:

[https://commons.wikimedia.org/wiki/File:Emerald_Glass_Frog_\(Centrolene_prosoblepon\)..jpg](https://commons.wikimedia.org/wiki/File:Emerald_Glass_Frog_(Centrolene_prosoblepon)..jpg)
(By Brian Gratwicke)

2.Amazon : https://commons.wikimedia.org/wiki/File:Amazon_Basin2.jpg

3. People:: <https://pixabay.com/photos/market-heho-nianmar-fish-people-4807572/>

4. Fishing: <https://pixabay.com/photos/fishermen-fishing-sea-net-83031/>

5. Map of India: SSSVV Gallery-Key word-India Map

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Main Script	Resources	People of the Rainforests , People as resource, Life In the Amazon Basin, Life in Ganga - Brahmaputra basin , People of the Rainforests , People as resource, Life In the Amazon Basin, Life in Ganga Brahmaputra basin

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, covers the entire chapter for the given board. The chapter given in the textbook is broken down into smaller modules known as assets. One of seven teaching methods is applied to each asset. Several different assets together complete the entire chapter. Each asset is supported by a teaching aid such as animated presentation, audio, video, worksheet; that the teacher can use in the class, while teaching that module. 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.