Lesson	Learning Objectives - The pupils should learn:	Differentiation linked to assessment grid	Suggested teaching and learning activities	Possible Resources
1.	**What is an ecosystem?** • To understand what components make up an ecosystem? • To know what different scales of ecosystem there is.	Using sources Conclusions Diagrams Geographical keywords (G1-5)	• Starter - Show images of different ecosystems • Discuss the components needed and how they link together (Biotic and abiotic) • Explain how the components result in differing vegetation and soil types. See if pupils can make the connections themselves with flow charts or card sort exercise • Look at the varying scales of ecosystem/biome • Explain the difference between components and processes • Plenary – Matching exercise with components and processes eg plant+photosynthesis – could be class demonstration	Youtube clips, Photos, Geog.2
2.	**How can the 'balance' of an ecosystem be altered, and what are the impacts?** • To know how the different components of an ecosystem interact. • To be able to explain how removing one component will affect the others	Conclusions Diagrams Geographical keywords (G1-5)	• Starter: Using an image of a forest ask pupils to list all the abiotic and biotic things separately (recap last lesson definition if required). • Ask pupils to create links between their two lists (using arrows) eg sun-plant • Pupils can then use colour to identify bigger links eg sun-plant-rabbit • Written explanations of a couple of these links to show understanding (or drawings of the links together with annotations) • Pose: What if we remove the plant? • Key words such as carnivore, herbivore, omnivore and primary/secondary consumers can be discussed. • What impacts/issues could humans create? • Plenary – Odd one out, need to give reasons	Youtube clips, Geog.2 Images
3.	**Where are the world's biomes distributed?** • To be able to use maps to locate	Places, Describing Places, Maps,	• Re-cap: How do we describe location? Geographical skills. • Images of different biomes	Photos, Youtube clips, Geog.2

	biomes • To be able to describe the different locations • To identify reasons why we have different biomes in different parts of the world. •	Using sources, Key words (G1-5)	• World biome maps used, then Maps from memory activity. • Mapping activity – main biomes located and labelled • Plenary - World biomes – true or false activity	World biome maps blank/colour
4.	**What are the characteristics of hot deserts** • To know the main characteristics of hot deserts • To be able to locate the biome and a named example	Places, Key words, Processes, Using sources, (G1-5)	• Starter: Think-Pair-Share: What is a hot desert like? • Use images • Locate on the world map • Use example of Sahara • Map and label on world map (or new one) • Examine the climate conditions and the types of vegetation and animals that can survive • Plenary – What 5 things have you learnt this lesson?	Maps Images Youtube clips
5.	**How have plants and animals adapted to living in hot deserts?** • To be able to explain in detail what particular adaptations are needed to survive for either plant or animal •	Geographical key words, Processes, Opinions, Diagrams (G1-5)	• Starter: What does adaptation mean? Display word and ask for definitions • Have the students had to adapt to anything? • Using the hot desert biome, look at difficulties living there (think pair share) • Display collective list • Ask pupils some possible adaptations to help overcome those issues • Pupils design a plant or animal that could survive in the rainforest – annotation to explain how it survives • Plenary – pupils share their creations plans so far and discuss pros and cons of each other's • Homework – finish creation with any amendments from discussion.	Paper Colours Extra resources from home if they choose
6.	**What are the characteristics of tropical rainforests?** • To know the main characteristics of rainforests • To be able to locate the biome	Places, Key words, Processes, Using sources (G1-5)	• Starter: Think-Pair-Share: What is a rainforest like? • Use images/noises • Locate on the world map • Use example of Amazon,	Maps Images Youtube clips

	and a named example		• Map and label on world map (or new one) • Examine the climate conditions and the types of vegetation and animals that can survive • Plenary: Q/ Why is it so wet? Discuss	
7.	**How have plants and animals adapted to living in tropical rainforests?** • To be able to link the adaptations to the conditions • To give reasons to explain plants and animals have adapted	Geographical key words, Processes, Conclusions Describing places (G1-5)	• Re-cap the desert animal/plant – compare the differing adaptations needed in a rainforest • Pupils need to understand the layers of the forest – with comparison heights to appreciate how tall • Pupils need a range of adaptations for plants and animals • Use questions such as; how can a frog live in a tree? And images, to encourage pupils need to explain the adaptations giving reasons why? • Introduce the nutrient cycle for higher ability • Plenary – Who am I? Pupils describe the adaptation and class guess (or do in pairs)	Images Youtube clips Doddle PPT Geog.2 p50
8.	**What is the equatorial climate?** • To know the daily conditions of the equatorial climate • To understand the water cycle and how it feeds the growth of the rainforest	Geographical key words, Using sources, (G1-5)	• Starter: Read a weather forecast for a few days, ask pupils what they notice (it's the same everyday) Produce a timeline • Examine the water cycle and relate to the rainforest • Link to adaptations and need for them • Examine why these conditions are so good for growth • Biodiversity – such a range of plants we may not know them all • Plenary – How and why is a rainforest so biodiverse?	Photos, Water cycle Youtube clips
9.	**Climate graphs of the rainforest: compare with the UK** • To be able to construct a climate graph • To be able to analyse climate graph data .	Places Geographical key words, Using sources, Using data Patterns Graphs (G1-5)	• Starter: Show pupils climate graph for rainforest and the UK, with no titles • Pupils to choose which one is rainforest, why? • Pick out key features of graph • Pupils to construct own graph for rainforest with data provided • Peer assess with structured list provided • Give pupils the UK version, they need to	Climate data for rainforest and UK, Graph structure for lower ability, Range of different climate graphs

			• describe similarities and differences (compare) • Use key terms such as total rainfall, Average Temp, Range • Plenary – Pupils match the place to the climate graph from a variety shown	
10.	**Mid Unit assessment**	G1-G5 questions	• Students to use the sources to complete a series of questions. • Mark scheme and grade boundaries provided.	Assessments, Source sheet
11.	**Who lives in the rainforest and how have they adapted?** • To know who lives in the rainforest • To be able to identify features they need to adapt • To be able to explain the adaptations	Places, Describing Places, Maps, People and the environment Using sources, Geographical Key words, (G1-5)	• Starter: Show picture of typical tribes person, a Colonist, a Rubber tapper and a cattle rancher – see if pupils can identify who is who • Who lives in rainforest and who just works there? • Introduce the concept of living sustainably • Watch PPT on doddle which briefly looks at each group. While watching, answer the following questions for each group (simple note style answers in a 4 square box) • Who are they? • Where have they come from? • How do they live? • Are they Sustainable? • Should they be able to stay? • Plenary – Now using their boxes, pupils choose who should be allowed to live in the rainforest and why? • Which lifestyle would they be able to cope with?	Doddle, Photographs,
12.	**What is it like to live with a tribe? (Bruce Parry)** • To understand the tribes way of life • To appreciate the real example • To draw comparisons to their own life.	Using sources, Opinions People and their places (G1-5)	• Bruce Parry episode with work sheet	Bruce Parry video clip, Question sheet
13.	**Why is the rainforest like a treasure chest?** • To understand how the rainforest gives us life, goods and services	Impact, People and the environment, People and their	• Doddle PPT on how rainforest is used • Groups use the information to create a large treasure chest of information on how the rainforest is used, what we gain from it.	Youtube clip, Suitable article Doddle Criteria grid

	• To be able to analyse information and make decisions • To be able to present their ideas choosing critical information and verbal explanations	places, Opinions Using sources (G1-5)	• Criteria cards to structure main points required • Groups feedback to class their decisions • Plenary – Peer assessment, groups assess each other and share WWW/EBI	
14.	**What are the rates of deforestation?** • To use data to present information • To be able to analyse dta to show patterns • To apply reasons and explanations to such patterns.	Using sources, Statistics, Data Patterns (G1-5)	• Use satellite images of past to present images to show the changes over the years. • Maths skills lesson - use data, create pie charts etc. • Describe patterns etc. • Predict future rates with reasons • Plenary – Can this rate of destruction be stopped? Discuss briefly	Deforestation rates
15.	**Why is deforestation happening?** • To understand increasing demands on the rainforest • To appreciate the Government's view regarding wealth and space • To assess the social and economical v environmental argument	Geographical Key words, People and their places, Opinions Impact Using sources, (G1-5)	• Starter – show things we can get from the rainforest,(paper, burger, fence panel) ask pupils to find the link between the random items • Link back to previous lesson on who lives in the rainforest and re-cap the role of cattle ranchers • Explore other uses: Mining, urbanisation etc • Plenary – write a tweet to the Brazilian government on how you think rainforest should be used, either for or against deforestation	Images, Doddle PPT
16.	**What are the impacts of deforestation?** • To know the main impacts on the environment • To understand the impacts socially • To be able to explain the impact on the ecosystem both locally and globally	Geographical Key words, People and their places, Using sources, Conclusions Opinions, (G1-5)	• Start with picture of deforested land; will this ever be rainforest again? Why not? • Re-cap nutrient cycle • Re-cap fundamental components of ecosystem from beginning of the topic, does ecosystem work the same without the trees? • Soil erosion • Desertification • Weather • What does this mean to the tribes?	Youtube clips

			• How would this affect us globally? • Plenary – draw up positives and negatives for deforestation – Pupils to share their opinion based on their list	
17.	**How can we manage deforestation?** • To describe and explain the sustainable uses of the rainforest • To be able to justify the benefits of using alternative schemes.	People and the environment, Impact, Opinions, Using sources (G1-5)	• Starter – use image about if trees gave off wifi, we would be planting instead of chopping, shame they only give off oxygen we need to breathe' – discuss • https://youtu.be/zZHCrpsMSsI • Freeze clip on the image of trees cut down give us money once to spend, yet trees left alone can provide us with money every year • Selected logging and certified companies is all on the clip – ask pupils if they have seen the symbols before... check their bags now (many reading books have it a pupil pointed out to me) • Examine case study of Ecotourism (I have info sheet) highlight the points that make this real ecotourism and not just a fancy holiday • Plenary – Draw a T table, list management strategies on the left (leave big space underneath each). Play who am I? by describing one of your choice, then your partner names it. • Homework – complete the right side of table with explanation of each strategy (think what your partner said)	Youtube advertisement, Image of quote about WiFi, Ecotourism info sheet 3 colours to highlight different aspects of ecotourism
18.	**Can we raise awareness of the value of the rainforest?** • To be able to argue why the rainforest should be saved • To be able to persuade others of the cause	Using sources (G1-5)	• Question: it's not even our forest? – ask pupils to think about why we should care even though it isn't in our country. • Design a 'rainforest awareness' T-shirt • Create tag with a persuasive message for all t-shirts bought. • Plenary – Vote for the best t-shirt and	Real or paper t-shirt template, Colours etc Voting slip

			why	
19.	**Revision lesson** • To complete a revision clock activity.		• Revision clock activity done individually and timed, or with teacher support. • Give revision clock. Each 3 min block has a question to be answered. Students use their notes to complete – could be accompanied by a 2 min teacher reveal to ensure students have the correct information.	Revision clock sheet
20.	**End of unit assessment (Summative)**	G1-G5 questions	• Full lesson to complete (50 marks). • Mark scheme and grade boundaries available.	