Year: 13
Subject: Geography

Term	Week	Focus	Summary	Learning Outcomes	Learning skills
Term 1.1	1	Global Atmospheric Circulation	Weather takes place within the context of the general circulation of the atmosphere. Precipitation and air masses are important in understanding weather	**Understanding of Weather and Climate**: Students will be able to define and differentiate between weather (short term variation) and climate (30-year average), developing a clear understanding of the concepts. **Comprehension of Atmosphere and Atmospheric Circulation**: Students will understand the structure and composition of the atmosphere, and the role of different atmospheric layers and gases. They will also annotate a globe with Hadley, Ferrel and Polar cells, and locations of high and low-pressure belts to understand how circulation influences air pressure. **Knowledge of Earth's Heat Budget and Ocean Currents:** Students will research and comprehend the Earth's heat budget. They will also annotate a world map with major ocean currents to understand the role and effects of warm and cold currents on global climates. **Understanding of Precipitation Processes and Air Masses**: Students will understand the processes of different types of precipitation and air masses. They will be able to compare and differentiate between sources, temperature, humidity, modifications,	Critical thinking, research, collaborative classroom, linking

				and stability of different types of air masses.	
	2	Global Atmospheric Circulation / Extreme weather hazards	Seasonal variations in global circulation affect climate and weather systems. Mid-latitude weather hazards are associated with high and low pressure systems	***Understanding of Heat Equator and ITCZ Movement:*** Students will comprehend why the heat equator moves seasonally, how this influences the position of the Intertropical Convergence Zone (ITCZ), and the impact on locations of seasonal precipitation. ***Comprehension of Monsoon Movements and Impacts:*** Students will use outline maps of Asia to demonstrate the movement of different monsoons, their effects, and draw contrasting climate graphs in Asian Monsoon areas and West Africa, relating ITCZ shift to rainfall totals. ***Knowledge of Polar Front and Air Masses:*** Students will understand the significance of the polar front as the boundary between Temperate and Polar air masses. They will be able to draw a cross-section through the front showing air motion, precipitation locations, and types, and investigate the characteristics of the polar front jet stream and the workings of Rossby waves. ***Understanding of Depressions and Weather Events:*** Students will understand the formation of	Critical thinking, research, collaborative classroom, linking

				depressions (cyclogenesis) from formation to dissipation, the characteristics of warm, cold, and occluded fronts, and be able to annotate a cross-section through a depression to explain weather. They will research and understand the impacts of depression through a case study and understand the causes and consequences of a major blocking anticyclone event.	
	3	Extreme weather hazards	Tropical cyclones are a major short-term weather hazard. Drought is a longer term weather hazard	***Understanding Tropical Cyclones:*** Students will comprehend the source, track areas, and formation processes of tropical cyclones across major basins and seasons, illustrating these on world maps. ***Hazards of Tropical Cyclones***: Students will understand the hazards associated with tropical cyclones, including storm surges and the use and calculation of the Saffir-Simpson scale. ***Research and Analysis of Cyclones:*** Students will research contrasting cyclones, comparing physical characteristics and human impacts, contributing to a deeper understanding of cyclonic events. ***Understanding Drought and Its Causes***: Students will define drought, understand its complex causes linked to global warming, and research long-term trends in precipitation and drought consequences.	Critical thinking, research, collaborative classroom, linking

	4	Managing Extreme weather	Forecasting and response are important in reducing impacts. Tropical cyclone prediction and mitigation can reduce impacts	***Timeline of Forecasting Technologies:*** Students will construct a timeline of forecasting technology, understanding the role of satellites and computer models in enhancing prediction accuracy. ***Accuracy of Weather Forecasts:*** Students will evaluate the precision of short-term (2, 5, 10 days) weather forecasts by comparing predicted weather to actual local area experiences. ***Response to Extreme Events***: Students will research an extreme weather event, creating a spider diagram to understand and evaluate the roles of different stakeholders in short-term and long-term responses. ***Evaluation and Cost-Benefit Analysis:*** Students will evaluate cyclone responses in a developing and developed country, and conduct a cost-benefit analysis of engineering solutions to protect against cyclone impacts.	Critical thinking, research, collaborative classroom, linking
	5	Managing Extreme weather	A variety of approaches are needed to manage weather hazards successfully.	***Water Management Strategies***: Students will understand how both developed and developing countries manage water resources to cope with drought, including the role of intermediate technologies. ***Resilient Farming Practices:*** Students will learn how farming can be adapted	Critical thinking, research, collaborative classroom, linking

				to be more resilient to drought and evaluate the effectiveness of drought/famine early warning systems. ***Water Transfer Schemes***: Students will perform a SWOT analysis of water transfer schemes to assess their impact on water supply and distribution. ***Short-term Aid vs. Long-term Planning***: Students will compare and assess the pros and cons of short-term aid in drought-stricken regions versus long-term planning and adaptation strategies.	
	6	Biodiversity patterns	Biodiversity can be defined in different ways. The distribution of biodiversity depends on a range of factors.	***Defining Biodiversity:*** Students will understand the different approaches to defining biodiversity (genetic, species, ecosystem) and analyze the advantages and disadvantages of each approach. ***Factors Influencing Biodiversity:*** Students will create a spider diagram to identify and explain the various factors (physical and human) that contribute to variations in biodiversity levels. ***Terrestrial Biomes and Climate:*** Students will map major terrestrial biomes on a world outline map, relate their distribution to global climate zones and circulation patterns, and analyze climate graphs to understand the role of climate limiting factors in	Critical thinking, research, collaborative classroom, linking

				tropical forests, savannas, and tundra biomes. ***Local Biodiversity Patterns:*** Students will study altitudinal zonation in the Andes and local vegetation patterns in the UK to investigate the influence of local factors on biodiversity. They will also explore the concept of biodiversity hotspots and their global distribution.	
Term 1.2	7	Biodiversity patterns / Threats to biodiversity	Ecosystem services is an important concept. Key processes operate within ecosystems maintaining their health	***Ecosystem Services:*** Students will define and categorize ecosystem services (supporting, cultural, provisioning, and regulating) and understand their value. They will evaluate the significance of ecosystem services in a chosen biome (e.g., tropical rainforest) and their local and global importance. ***Perceptions of Value:*** Students will explore how perceptions of value differ among various stakeholders, such as indigenous people, TNCs, farmers, and tourists, in relation to ecosystem services. They will analyze the diverse perspectives and consider their implications. ***Nutrient Cycling and Energy Flow:*** Students will construct a nutrient cycle diagram and annotate it to explain the sizes of stores and transfers in the chosen biome. They will also draw a trophic pyramid and annotate it to understand energy flow and the size of different trophic levels.	Critical thinking, research, collaborative classroom, linking

				Threats to the Biome: Students will evaluate the relative importance of local threats to the chosen biome (e.g., tropical rainforest). They will explore factors like alien invasive species and their impact on food webs, contributing to an understanding of the biome's vulnerability and conservation challenges.	
	8	Threats to biodiversity	There are both local and global threats to biodiversity. Conservation of ecosystems is not universal	***Global Resource Pressures***: Students will understand the pressures on global resources and their impact on biomes. They will analyze the relationship between resource availability and global population growth, considering the implications for sustainable management. ***Ecosystem Change Analysis***: Students will use satellite images or tools like Google Earth to analyze patterns of ecosystem change, such as deforestation in the Amazon or Indonesia. They will examine the extent and spatial distribution of these changes, fostering an understanding of environmental transformations. ***Attitudes towards Ecosystem Conservation***: Students will analyze attitudes towards ecosystem conservation and exploitation, focusing on changing attitudes in Brazil and trends in deforestation rates. They will evaluate societal perspectives and	Critical thinking, research, collaborative classroom, linking

				their implications for conservation efforts. ***Conservation Strategies***: Students will assess the value of the Environmental Kuznet's curve in understanding the relationship between development and conservation. They will also explore the importance of keystone species and iconic species in promoting conservation and examine the benefits that can be gained through conservation practices, such as ecotourism.	
	9	Managing biodiversity	Decisions about ecosystem management are made by a range of players. Both local and global approaches can use used in conservation.	***Sustainable Yield:*** Students will define the term "sustainable yield" and investigate its applicability to ecosystem management. They will explore concepts of resource utilization and evaluate the sustainability of different practices. ***Conflict in Ecosystem Management:*** Students will create a conflict matrix for a chosen biome, identifying players with conflicting views on ecosystem management. They will consider the perspectives of various stakeholders, including governments, tribes, TNCs, IGOs/NGOs, and analyze potential areas of disagreement. ***Local-Scale Ecosystem Management:*** Students will investigate the success of ecosystem management at a local scale, such as the Juma Forest Reserve. They will assess the effectiveness of	Critical thinking, research, collaborative classroom, linking

				management strategies and evaluate the outcomes in terms of conservation and sustainability. ***Evaluation of Conservation Approaches:*** Students will evaluate the aims of National Parks and other conservation strategies, identifying possible conflicting aims. They will assess different approaches to conservation at a global scale, including CITES, Biodiversity Action Plans, and UNESCO biosphere reserves, considering their advantages and disadvantages for conservation and people.	
	10	Managing biodiversity	Extreme measures may not be enough to save ecosystems and their species.	***Ecosystem Restoration***: Students will evaluate the role of ecosystem restoration in assisting conservation efforts, particularly in high-pressure and high-value locations. They will analyze case studies and assess the effectiveness of restoration projects in promoting ecosystem health and biodiversity. ***Ex-situ Conservation:*** Students will consider the role of zoos and other forms of ex-situ conservation in terms of species survival and reintroduction. They will examine the impact of captive breeding programs and assess the potential benefits and limitations of ex-situ conservation strategies. ***Exploring Future Scenarios:*** Students will use a table to consider different	Critical thinking, research, collaborative classroom, linking

				future scenarios for ecosystems. They will analyze various factors, including population growth, global average income growth, global warming, and the balance of renewable and non-renewable resource consumption. They will critically evaluate the potential implications of different scenarios on ecosystem sustainability. ***Synthesis and Evaluation:*** Students will synthesize their understanding of various conservation approaches, including ecosystem restoration, ex-situ conservation, and future scenarios. They will critically evaluate the strengths, limitations, and ethical considerations associated with each approach, considering their potential impact on species survival and ecosystem conservation.	
	11	Energy supply, demand and security.	Energy sources can be classified in different ways, and their use varies widely. As well as rising global demand, distribution of energy resources is uneven	***Energy Resource Classification***: Students will group energy resources into non-renewable and renewable categories, considering the classification of biofuels and nuclear as recyclable. They will define primary and secondary energy and understand the different characteristics of each resource type. ***Energy Use and Development:*** Students will investigate per capita energy use and energy types in countries at different levels of development. They will explain the relationship between energy use and	Critical thinking, research, collaborative classroom, linking

				economic and resource factors, analyzing how development influences energy consumption patterns. ***Factors Affecting Energy Choices:*** Students will consider the physical, economic, technical, and attitudinal factors that affect the use of nuclear, biofuels, coal, and wind power. They will analyze the advantages and disadvantages of each energy source and evaluate how these factors influence energy decision-making. ***Future Energy Scenarios and Implications:*** Students will explain contrasting scenarios for future energy demand and consider their resource and environmental implications. They will use resources like the World Energy Outlook to analyze potential energy futures and critically evaluate the consequences of different scenarios on resources and the environment.	
	12	Energy supply, demand and security / The impact of energy use	Energy security varies, as does the security of pathways. The future supply of affordable fossil fuels is uncertain.	***Energy Security and Geopolitics:*** Students will understand the concept of energy security and identify countries with high and low energy security. They will analyze components of energy security and use world maps to plot conflict zones, shipping choke points, and locations of piracy that may disrupt oil supplies. ***Peak Oil and Gas***: Students will explore the concepts of peak oil and gas by	Critical thinking, research, collaborative classroom, linking

				critically reviewing prices, production trends, and reserve data. They will assess the reliability of various data sources and understand the challenges associated with predicting future fossil fuel supply. ***Understanding Energy Scenarios:*** Students will examine different future scenarios for fossil fuel demand by analyzing factors such as population, economic development, renewable energy adoption, and carbon emissions reductions. They will recognize the complexities and uncertainties involved in predicting future energy demand. ***Impacts of Energy Challenges***: Students will evaluate the consequences of energy challenges, such as the Russia-Ukraine gas conflict and Indian electricity blackouts. They will analyze the geopolitical, economic, and social implications of these events and assess their impact on energy supply and global energy dynamics.	