Geography A Level - Personal Learning Checklist

ELSS

1. How important are water and carbon to life on Earth?		R	A	G
1. How important are water and carbon to life on Earth?	ELSS1 The importance of water in supporting life on the planet, the uses of water for humans, flora and fauna.			
	ELSS2 Carbon is the building block of life on Earth. It is available for use in the natural world and by humans.			
	ELSS3 Water and carbon cycling between the land, oceans and atmosphere through open and closed systems.			
	ELSS4 The distribution and size of the major stores in the carbon and water systems, including the atmosphere, oceans, water bodies, ice (cryosphere), soil, vegetation and groundwater.			
	ELSS5 The characteristics of the main inputs and outputs of the water cycle, including precipitation and snowmelt (ablation) and evapotranspiration.			
	ELSS6 The characteristics of the main inputs and outputs of the carbon cycle, including precipitation, photosynthesis, decomposition, weathering, respiration and combustion.			
	ELSS7 The processes of the water cycle, including evaporation, transpiration, condensation, precipitation, interception, ablation, runoff and catchment hydrology.			
	ELSS8 The processes of the carbon cycle, including photosynthesis, respiration, decomposition, combustion, natural sequestration in oceans, vegetation, sediments and weathering.			

2. How do the water and carbon cycles operate in contrasting locations?		R	A	G
2. How do the water and carbon cycles operate in contrasting locations?	ELSS9 Case study of the Amazon rainforest, including water and carbon cycles specific to tropical rainforests, including the rates of flow and distinct stores. How an individual tree through to the rainforest as a whole can influence these cycles.			
	ELSS10 Case study of the Amazon rainforest, including physical factors affecting the flows and stores in the water cycle, including temperature, rock permeability and porosity and relief.			
	ELSS11 Case study of the Amazon rainforest, including physical factors affecting the flows and stores in the carbon cycle, including temperature, vegetation, organic matter in soil and the mineral composition of rocks.			
	ELSS12 Case study of the Amazon rainforest, including exploring the changes to the flows and stores within the water cycle caused by natural and human factors such as deforestation and farming factors.			
	ELSS13 Case study of the Amazon rainforest, including the impact of human activity, such as deforestation and farming, on carbon flows, soil and nutrient stores.			
	ELSS14 Case study of the Amazon rainforest, including management strategies such as afforestation and improved agriculture techniques that have positive effects on the water and carbon cycles.			
	ELSS15 Case study of the Arctic tundra, including water and carbon cycles specific to Arctic tundra, including the rates of flow and distinct stores.			
	ELSS16 Case study of the Arctic tundra, including physical factors affecting the flows and stores in the cycles, including temperature, rock permeability and porosity and relief.			
	ELSS17 Case study of the Arctic tundra, including physical factors affecting the flows and stores in the carbon cycle, including temperature, vegetation, organic matter in soil and the mineral composition of rocks.			
	ELSS18 Case study of the Arctic tundra, including seasonal changes in the water and carbon cycles in the Arctic tundra.			
	ELSS19 Case study of the Arctic tundra, including the impact of the developing oil and gas industry on the water and carbon cycles.			
	ELSS20 Case study of the Arctic tundra, including management strategies used to moderate the impacts of the oil and gas industry.			

3. How much change occurs over time in the water and carbon cycles?		R	A	G
3. How much change occurs over time in the water and carbon cycles?	ELSS21 Dynamic equilibrium in the cycles and the balance between the stores and the flows.			
	ELSS22 Land use changes, such as growth in urban areas, farming and forestry, as a catalyst for altering the flows and stores in these cycles.			
	ELSS23 How water extraction, including surface extraction and sub-surface groundwater extraction impact the flows and stores in these cycles.			
	ELSS24 The impact of fossil fuel combustion and carbon sequestration on flows and stores of carbon.			
	ELSS25 Positive and negative feedback loops within and between the water and carbon cycles.			
	ELSS26 Short term changes to the cycles and the significance of these changes, including diurnal and seasonal changes of climate, temperature, sunlight and foliage.			
	ELSS27 Long term changes in the water and carbon cycles, including changes to stores and flows.			
	ELSS28 The importance of research and monitoring techniques to identify and record changes to the global water and carbon cycles; reasons why this data is gathered.			

4. To what extent are the water and carbon cycles linked?		R	A	G
4. To what extent are the water and carbon cycles linked?	ELSS29 The ways in which the two cycles link and are interdependent via oceans, atmosphere, cryosphere and vegetation.			
	ELSS30 How human activities cause changes in the availability of water and carbon stores, such as the use of these as resources.			
	ELSS31 The impact of long-term climate change on the water and carbon cycles.			
	ELSS32 Global management strategies to protect the carbon cycle as regulator of the Earth's climate, including afforestation, wetland restoration, improving agricultural practices and reducing emissions.			
	ELSS33 Global management strategies to protect the water cycle including improving forestry techniques, water allocations for domestic, industrial and agricultural use and drainage basin planning.			