CB9 Ecosystems and Material Cycles

RAG rate your confidence levels at the start and end of each topic:

R= Not Confident **A= Fairly confident (need more practice/ to review)** **G= Very confident**

CB9a Ecosystems

Step	Learning outcome	Start of topic	End of Topic
	State what is meant by the ecological terms community, population and habitat.		
	Give examples of an ecosystem, a community, a population and a habitat.		
	Describe the organisation of the components of an ecosystem (including populations, communities, habitats and abiotic factors).		
	Describe how the interdependence of organisms in an ecosystem allows their survival.		
	Explain how to estimate population size, including the use of quadrats.		

CB9b Abiotic factors and communities

Step	Learning outcome	Start of topic	End of Topic
	Give examples of abiotic factors.		
	Explain how communities are affected by abiotic factors (temperature, light, water, pollutants).		
	Explain how to investigate the effect of abiotic factors on the distribution of organisms using belt transects.		

CB9c Biotic factors and communities

Step	Learning outcome	Start of topic	End of Topic
	Give examples of biotic factors.		
	Describe how competition can affect communities.		
	Describe how predation can affect communities.		
	Explain how predator–prey cycles affect communities.		
	Explain how the structure of a community can affect biodiversity.		

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CB9d Parasitism and mutualism

Step	Learning outcome	Start of topic	End of Topic
	Define the term ‘parasitism’.		
	Define the term ‘mutualism’.		
	Describe how parasites are dependent on their hosts.		
	Describe how hosts are harmed by parasites.		
	Identify parasites and mutualists in examples.		
	Explain how mutualists benefit from their relationship.		

CB9e Biodiversity and humans

Step	Learning outcome	Start of topic	End of Topic
	Define the term eutrophication.		
	Describe examples of the introduction of non-indigenous species.		
	Describe the advantages of fish farming.		
	Explain how fish farming can affect ecosystems and biodiversity.		
	Explain how the introduction of species can affect ecosystems and biodiversity.		
	Explain how eutrophication can affect ecosystems and biodiversity.		

CB9f Preserving biodiversity

Step	Learning outcome	Start of topic	End of Topic
	Define the term conservation.		
	Explain what is meant by reforestation.		
	Give examples of animal conservation.		
	Explain how animal conservation can benefit biodiversity.		
	Explain how reforestation can benefit biodiversity.		

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CB9g The water cycle

Step	Learning outcome	Start of topic	End of Topic
	Give examples of materials that cycle through ecosystems.		
	Describe the processes by which water cycles through abiotic parts of an ecosystem.		
	Describe the processes by which water cycles through living organisms.		
	Describe how drinking water is produced where water is plentiful.		
	Explain how drinking water can be produced by desalination in areas of drought.		
	Explain why water is important to living organisms.		

CB9h The carbon cycle

Step	Learning outcome	Start of topic	End of Topic
	Give examples of decomposers.		
	Define the term *decomposer*.		
	Describe the carbon cycle.		
	Identify the key processes in the carbon cycle.		
	Explain how carbon is cycled through the biotic and abiotic components of an ecosystem.		
	Explain the importance of the carbon cycle (in balancing photosynthesis and respiration, and removal of wastes by decomposition).		

CB9i The nitrogen cycle

Step	Learning outcome	Start of topic	End of Topic
	Describe how plants use nitrates.		
	Describe the different roles of bacteria in the nitrogen cycle.		
	Explain how fertilisers increase the nitrate content of the soil.		
	Explain why bacteria are important for soil fertility.		
	Explain how crop rotation can increase the nitrogen content of the soil.		

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