



# AQA GCSE Combined Science: Trilogy

## Topic Checklists **4.7 Ecology**

### 4.7.1 Adaptations, Interdependence and Competition

Topic	Success Criteria	Progress		
Communities	I can describe the levels of organisation in an ecosystem.			
	I can explain the importance of interdependence and competition in a community.			
	I can suggest the factors that organisms compete for in a given habitat, when provided with appropriate information.			
	I can suggest how organisms are adapted to the conditions in which they live, when provided with appropriate information.			
	I can explain what is meant by a stable community.			
	I can extract and interpret information from charts, graphs and tables relating to the interaction of organisms within a community.			
Abiotic Factors	I can give a definition for the term 'abiotic'.			
	I can give some examples of abiotic factors that can affect a community.			
	I can explain how a change in an abiotic factor would affect a given community, when given appropriate data or context.			
	I can extract and interpret information from charts, graphs and tables relating to the effect of abiotic factors on organisms within a community.			
Biotic Factors	I can give a definition for the term 'biotic'.			
	I can give some examples of biotic factors that can affect a community.			
	I can explain how a change in a biotic factor would affect a given community, when given appropriate data or context.			
	I can extract and interpret information from charts, graphs and tables relating to the effect of biotic factors on organisms within a community.			



Topic	Success Criteria	Progress		
Adaptations	I can give a definition for the term 'adaptation'.			
	I can explain how organisms are adapted to live in their natural environment, given appropriate information.			
	I can categorise adaptations as structural, behavioural or functional.			
	I can explain what an extremophile is.			
	I can give some examples of extremophiles and the conditions in which they live.			

**4.7.2 Organisation of an Ecosystem**

<b>Topic</b>	<b>Success Criteria</b>	<b>Progress</b>		
Levels of Organisation	I can explain the importance of photosynthetic organisms for all life on Earth.			
	I can describe the role of producers in food chains.			
	I can give some examples of organisms that act as producers in food chains.			
	I can describe the role of primary consumers, secondary consumers and tertiary consumers in food chains.			
	I can give a definition for the terms 'predator' and 'prey'.			
	I can describe how the numbers of predators and prey fluctuate in a stable community.			
	I can interpret graphs used to model predator-prey cycles.			
	I can describe a method using transects and quadrats to determine the distribution and abundance of species in an ecosystem (required practical activity 7).			
	I can describe how to calculate mean, mode and median.			
	I can calculate the mean from a set of data.			
	I can plot and draw appropriate graphs, selecting appropriate scales for the axes.			
How Materials Are Cycled	I can name some different materials that cycle through abiotic and biotic components of an ecosystem.			
	I can describe the processes in the carbon cycle.			
	I can explain the importance of the carbon cycle to living organisms.			
	I can describe the processes in the water cycle.			
	I can explain the importance of the water cycle to living organisms.			
	I can explain the role of microorganisms in cycling materials through an ecosystem.			

**4.7.3 Biodiversity and the Effect of Human Interaction on Ecosystems**

<b>Topic</b>	<b>Success Criteria</b>	<b>Progress</b>		
Biodiversity	I can give a definition for the term 'biodiversity'.			
	I can explain how a great biodiversity ensures the stability of ecosystems.			
	I can explain why it is important to maintain a good level of biodiversity.			
	I can describe some human activities that have an impact on biodiversity.			
Waste Management	I can explain the factors contributing to increased waste production.			
	I can describe some different ways that pollution can occur.			
	I can explain how pollution can reduce biodiversity.			
Land Use	I can give some ways that humans reduce the amount of land available for other animals.			
	I can explain how the destruction of peat bogs reduces biodiversity.			
	I can explain how the decay or burning of peat contributes to global warming.			
Deforestation	I can give some reasons that large-scale deforestation in tropical areas has occurred.			
	I can evaluate the environmental implications of deforestation.			
Global Warming	I can explain some of the causes of global warming.			
	I can describe some of the biological consequences of global warming.			
	I can explain why we can trust the evidence for global warming and climate change.			
	I can explain why evidence is uncertain or incomplete in a complex context.			



Topic	Success Criteria	Progress		
Maintaining Biodiversity	I can describe both positive and negative human interactions in an ecosystem.			
	I can explain the impact of human interactions in an ecosystem on biodiversity.			
	I can describe some programmes that have been put in place to reduce the negative effects of humans on ecosystems and biodiversity.			
	I can evaluate given information about methods that can be used to tackle problems caused by human impacts on the environment.			
	I can explain and evaluate the conflicting pressures on maintaining biodiversity given appropriate information.			