



Year 9 – Science – Ecosystems of the future – Spring Term 2 – KNOWLEDGE OVERVIEW

Year group:		Unit:		Date (from and to):	
Week beginning:	Big question / concept:	Learning intentions:	Resources		
			Offline:	Online including links on how to access these:	
22/02/21	What is an ecosystem?	<p>You should be able to:</p> <p>Define the terms community, population, habitat, and ecosystem.</p> <p>Describe the different levels of organisation in an ecosystem.</p> <p>Pupils can justify the need for interaction within an ecosystem.</p>	Read pages 2 and 3 and answer questions on page 4 from Year 9 Home Learning pack 4 Ecosystem of the future.	<p>Watch the following video up to 5mins https://classroom.thenational.academy/lessons/communities-64vkcc?activity=video&step=1 Make notes from the video.</p> <p>Watch videos 1 from the following link https://members.gcsepod.com/shared/podcasts/title/10793/66161 Make notes from the video</p>	
	Factors that affect communities	<p>You should be able to:</p> <p>Identify abiotic and biotic which can affect a community.</p> <p>Describe how a change in an abiotic and biotic factor might affect a given community.</p> <p>Explain how a change in an abiotic and biotic factor affects a given community.</p>	Read pages 5 to 9 and answer questions on page 9 and 10 from Year 9 Home Learning pack 4 Ecosystem of the future.	<p>Watch the following video https://classroom.thenational.academy/lessons/biotic-and-abiotic-factors-6cw3jc Make notes from the video.</p>	
	Interdependence is key for survival	<p>You should be able to:</p> <p>Define interdependence and give suitable examples.</p> <p>Describe why different organisms show interdependence.</p> <p>Explain why different organisms in an ecosystem show interdependence.</p>	Read page 10 and answer questions on pages 10 and 11 from Year 9 Home Learning pack 4 Ecosystem of the future.	<p>Watch clip 2 from the following link https://members.gcsepod.com/shared/podcasts/title/10793/66161 Make notes from the video</p>	

	Organisms and their communities	<p><u>You should be able to:</u></p> <p>Describe factors that affect the survival of organisms in their habitat.</p> <p>Explain how one species depends on others for survival.</p> <p>Describe resources that plants and animals compete for in a given habitat.</p>	Read pages 11 and 12 and answer questions on page 13 from Year 9 Home Learning pack 4 Ecosystem of the future.	Watch video 2 from the following link https://members.gcsepod.com/shared/podcasts/title/10793/66161 Make notes from the video
01/03/2021	Organising an ecosystem	<p>Define these key words: Producers, primary consumers, secondary producers, tertiary consumers, herbivores, carnivores, predators, prey, predator)</p> <p>Recall what a food chain shows</p> <p>Describe how a feeding relationships can be shown by food chains.</p> <p>Analyse a food web and construct food chains from it.</p>	Read pages 14-18 and answer questions on pages 18 and 19 from Year 9 Home Learning pack 4 Ecosystem of the future.	Watch the following video https://classroom.thenational.academy/lessons/food-chains-and-webs-64uk4e Make notes from the video
	Are we hazardous?	<p>State DDT as a toxic pesticide that can bio- accumulate.</p> <p>Describe the accumulation of a pesticide along a food chain.</p> <p>Make links between the food web, effects of pesticides and bioaccumulation.</p> <p>Evaluate the use of pesticides.</p>	Read pages 20 and 21 and answer questions on page 21 from Year 9 Home Learning pack 4 Ecosystem of the future	Watch the following video https://www.youtube.com/watch?v=nNjhboUYM2c Make notes from the video

	Water pollution and eutrophication	<p>State the main causes of water pollution.</p> <p>Define eutrophication.</p> <p>Explain how the use of fertilisers could lead to eutrophication.</p>	<p>Read page 22-24 and answer questions on page 24 and 25 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://www.youtube.com/watch?v=pXCXXTgLoLE Make notes from the video</p>
	Decomposition	<p>Define decomposers and give example of decomposers.</p> <p>Describe how decomposers interact with the ecosystem.</p> <p>Explain the role of decomposers in the cycling of materials</p>	<p>Read page 25 and 26 and answer questions on page 26 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://classroom.thenational.academy/lessons/decay-6wu32d?activity=video&step=2&view=1 Make notes from the video</p>
08/03/2021	Cycle of life	<p>Describe how carbon is recycled in an ecosystem</p> <p>Explain the importance of the carbon cycle to living organisms.</p>	<p>Read page 27 and answer questions on page 28 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://classroom.thenational.academy/lessons/cycles-c8rkat Make notes from the video.</p>
	Water cycle	<p>Describe how water is recycled in an ecosystem.</p> <p>Explain the importance of the water cycle to living organisms.</p> <p>Interpret and explain the processes and diagrams of the water cycle.</p>	<p>Read page 29 and answer questions on page 30 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://classroom.thenational.academy/lessons/cycles-c8rkat Make notes from the video.</p>
	Variables	<p>Define control, independent and dependent variables.</p> <p>Identify the independent, dependent and control variables in different scenarios.</p>	<p>Read page 31 and 32 and answer questions on page 31 and 32 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://members.gcsepod.com/shared/podcasts/title/13638/81834 Make notes from the video.</p>

	Diversity	<p>Define biodiversity.</p> <p>Describe deforestation and land use as examples of human interactions with the ecosystem.</p> <p>Pupils can justify the need for deforestation and land use.</p>	<p>Read pages 33 and 34 and answer questions on page 34 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://classroom.thenational.academy/lessons/biodiversity-c4u3ct</p> <p>Make notes from the video.</p>
	Global warming	<p>Recall the greenhouse gases and their sources.</p> <p>Describe how the greenhouse effect occurs in terms on the short and long wavelengths.</p> <p>Explain the effect of increased greenhouse gases on global climate change.</p>	<p>Read page 35 and 38 and answer questions on pages 36 and 38 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://members.gcsepod.com/shared/podcasts/title/10795/66170</p> <p>Make notes from the video.</p>
22/03/2021	Are we reliant on Earth?	<p>Define renewable and finite resources.</p> <p>Describe the Earth's resources that humans need to survive.</p> <p>Explain the advantages of reusing, recycling, and reducing.</p> <p>Explain the disadvantages of not reusing, recycling, and reducing.</p> <p>Recall the Earth's resources that humans need to survive.</p> <p>Describe how Chemists can contribute towards sustainable development.</p>	<p>Read pages 38-40 and answer questions on page 40 from Year 9 Home Learning pack 4 Ecosystem of the future</p>	<p>Watch the following video https://classroom.thenational.academy/lessons/finite-resources-6xh6ac</p> <p>Make notes from the video</p>

	Journey to save the panda	Describe programmes introduced to maintain biodiversity	Read page 41 and answer questions on page 41 from Year 9 Home Learning pack 4 Ecosystem of the future	Watch the following video https://www.youtube.com/watch?v=d3m73r64N2I Make notes from the video
	Adaptations	Define adaptation. Identify types of adaptation of organisms. Pupils can describe and explain how structural, behavioural, and functional adaptations, in a range of organisms, help them to survive in their habitat.	Read page 42 and answer questions on pages 42 and 43 from Year 9 Home Learning pack 4 Ecosystem of the future	Watch the following video https://classroom.thenational.academy/lessons/adaptations-6qt64r Make notes from the video. Watch videos 3 and 4 from the following link https://members.gcsepod.com/shared/podcasts/title/10793/66159 Make notes from the video
	Predator and prey cycle	Describe how a change in the numbers of one organism may affect another. Describe how a species' population changes as its predator or prey population changes. Interpret population curves and explain predator – prey relationships	Read page 43 and answer questions on page 44 from Year 9 Home Learning pack 4 Ecosystem of the future	Watch the following video https://www.youtube.com/watch?v=dRFQ8rZCK6Q Make notes from the video