



## YEAR 11 Biology - Ecology - KNOWLEDGE OVERVIEW: HALF TERM 2 SPRING 2021

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	Organisms and their communities	<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>	<p>Read through slides 4-7 Make notes on each slide. Once you have written the notes you can then complete the questions on slides 8 and 9. Check your answers on slide 10 and 11.</p>	<p>Watch the following video  <a href="https://classroom.thenational.academy/lessons/communities-64vkcc?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/communities-64vkcc?activity=video&amp;step=1</a>            Make notes from the video.</p> <p>Watch videos 1 and 2 from the following link  <a href="https://members.gcsepod.com/shared/podcasts/title/10793/66159">https://members.gcsepod.com/shared/podcasts/title/10793/66159</a>            Make notes from the video</p>
	Factors that affect communities	<p>State abiotic factors in a habitat and explain how a change in a biotic factor might affect a community</p> <p>State biotic factors in a habitat and explain how a change in a biotic factor might affect a community</p>	<p>Read through slides 12-15 Make notes on each slide. Once you have written the notes you can then complete the questions on slides 16 and 17. Check your answers on slide 10 and 18 and 19.</p>	<p>Watch the following video  <a href="https://classroom.thenational.academy/lessons/biotic-and-abiotic-factors-6cw3jc">https://classroom.thenational.academy/lessons/biotic-and-abiotic-factors-6cw3jc</a>            Make notes from the video.</p>
01/03/2021	Adaptations to habitats	<p>Describe and explain how structural, behavioural and functional adaptations, in a range of organisms, help them to survive in their habitat.</p> <p>Define the term extremophile and give general examples.</p>	<p>Read through slides 20 to 23. Make notes on each slide. Once you have written the notes you can then complete the questions on slides 24 and 25. Check your answers on slides 26 and 27.</p>	<p>Watch the following video  <a href="https://classroom.thenational.academy/lessons/adaptations-6qt64r">https://classroom.thenational.academy/lessons/adaptations-6qt64r</a>            Make notes from the video.</p> <p>Watch videos 3 and 4 from the following link  <a href="https://members.gcsepod.com/shared/podcasts/title/10793/66159">https://members.gcsepod.com/shared/podcasts/title/10793/66159</a>            Make notes from the video</p>

08/03/2021	Organizing ecosystem	<p>Explain what a food chain shows.</p> <p>Explain that photosynthetic organisms are the producers of biomass for life on Earth.</p> <p>Identify producers, primary, secondary and tertiary consumers in a food chain.</p> <p>Interpret and explain population curves, eg hare and lynx, red and grey squirrels, and native and American crayfish.</p>	<p>Read through slide 29-31. Make notes on each slide. Once you have written the notes you can then complete the questions on slide 32. Check your answers on slide 33.</p>	<p>Watch the following video <a href="https://classroom.thenational.academy/lessons/biomass-64rpcc">https://classroom.thenational.academy/lessons/biomass-64rpcc</a> Make notes from the video.</p>
	Cycling of materials	<p>Interpret and explain the processes in diagrams of the carbon, water and decay cycles.</p> <p>Explain the importance of these cycles to living things.</p> <p>Explain the carbon cycle.</p> <p>Explain the water cycle.</p> <p>Explain the role of microorganisms in cycling materials through an ecosystem..</p>	<p>Read through slides 34-36 Make notes on each slide. Once you have written the notes you can then complete the questions on slide 37. Check your answers on slide 38.</p>	<p>Watch the following video <a href="https://classroom.thenational.academy/lessons/cycles-c8rkat">https://classroom.thenational.academy/lessons/cycles-c8rkat</a> Make notes from the video.</p>
	Decomposition	<p>Students can state the conditions needed for decay</p> <p>Students can explain how different factors affect the decay of biological material</p> <p>Students can describe anaerobic decay</p>	<p>Read through slides 39 to 42. Make notes on each slide. Once you have written the notes you can then complete the questions on slides 43 and 44. Check your answers on slide 45.</p>	<p>Watch the following video(s) <a href="https://classroom.thenational.academy/lessons/decay-6crkjd">https://classroom.thenational.academy/lessons/decay-6crkjd</a> Make notes from the video.</p>
	Impact of environmental change	<p>Describe how environmental changes, such as water availability, temperature and atmospheric gases may be seasonal, geographic or caused by human interaction.</p> <p>Explain the possible impact of each environmental change on the distribution of species in an ecosystem.</p>	<p>Read through slides 46 and 47. Make notes on each slide. Once you have written the notes you can then complete the questions on slide 48. Check your answers on slide 49.</p>	

22/03/2021	Importance of diversity	<p>Define the term biodiversity.</p> <p>Describe the problems associated with an increasing human population.</p> <p>Describe how water can be polluted with sewage, fertiliser or toxic chemicals.</p> <p>Describe examples of air pollutants and where they come from.</p> <p>Describe how human reduce the land available for other animals</p> <p>Explain what peat is and why it is important to preserve areas of peat.</p>	<p>Read through slides 51 to 60. Make notes on each slide. Once you have written the notes you can then complete the questions on slides 61-63. Check your answers on slides 64 and 65.</p>	<p>Watch the following video (Watch the video up to 17mins) <a href="https://classroom.thenational.academy/lessons/biodiversity-cmrk8r">https://classroom.thenational.academy/lessons/biodiversity-cmrk8r</a></p> <p>Make notes from the video.</p>
	What affects biodiversity	<p>Describe and explain how deforestation affects biodiversity.</p> <p>Describe and explain how global warming affects biodiversity</p> <p>Describe programmes introduced to maintain biodiversity</p> <p>Explain and evaluate conflicting pressures on maintaining biodiversity.</p>	<p>Read through slides 66 to 71. Make notes on each slide. Once you have written the notes you can then complete the questions on slides 72-74. Check your answers on slides 75-77.</p>	<p>Watch the following video (continue form last lesson. Watch from 17minutes onwards) <a href="https://classroom.thenational.academy/lessons/biodiversity-cmrk8r">https://classroom.thenational.academy/lessons/biodiversity-cmrk8r</a></p> <p>Make notes from the video.</p> <p>Watch the following video on global warming <a href="https://classroom.thenational.academy/lessons/global-warming-6ww64c">https://classroom.thenational.academy/lessons/global-warming-6ww64c</a></p> <p>Make notes from the video.</p>
	Different levels of ecosystem	<p>Identify the trophic levels on food chains and pyramids of biomass.</p> <p>Construct and interpret pyramids of biomass from data.</p> <p>Calculate the efficiency of biomass transfer between trophic levels.</p> <p>Explain what losses of biomass are due to.</p>	<p>Read through slides 79 to 86. Make notes on each slide. Once you have written the notes you can then complete the questions on slides 87-89. Check your answers on slides 90.</p>	<p>Watch videos 1 and 2 from the following link on biomass and energy transfer <a href="https://members.gcsepod.com/shared/podcasts/title/10796/66177">https://members.gcsepod.com/shared/podcasts/title/10796/66177</a></p> <p>Make notes from the video.</p>

	<p>Importance of food security and farming techniques</p>	<p>Explain how factors affect food production and food security locally and globally.</p> <p>Explain how restricting the movement of animals and controlling the temperature of their surroundings improves efficiency of food production.</p> <p>Define the term factory farming and give examples of animals farmed in this way.</p> <p>Evaluate modern farming techniques.</p>	<p>Read through slides 92-98. Make notes on each slide. Once you have written the notes you can then complete the questions on slide 99. Check your answers on slide 91.</p>	<p>Watch the following video (Up to 23 minutes)  <a href="https://classroom.thenational.academy/lessons/food-security-and-farming-6mw3gr">https://classroom.thenational.academy/lessons/food-security-and-farming-6mw3gr</a>          Make notes from the video.</p> <p>Watch videos 1-6 from the following link  <a href="https://members.gcsepod.com/shared/podcasts/title/10797/66183">https://members.gcsepod.com/shared/podcasts/title/10797/66183</a>          Make notes from the video</p>
	<p>Role of biotechnology</p>	<p>Describe how microorganisms can be grown in large vats to produce useful products.</p> <p>Explain how the conditions in the vat are monitored and controlled for optimal growth.</p> <p>Describe how the fungus Fusarium can be grown to produce mycoprotein that can be eaten.</p> <p>Evaluate the use of mycoprotein as a food.</p> <p>Describe the process of genetic engineering to produce better crops.</p>	<p>Read through slides 101-103. Make notes on each slide. Once you have written the notes you can then complete the questions on slide 104. Check your answers on slide 105.</p>	<p>Watch the following video. Continue from previous lesson (After 23minutes onwards)  <a href="https://classroom.thenational.academy/lessons/food-security-and-farming-6mw3gr">https://classroom.thenational.academy/lessons/food-security-and-farming-6mw3gr</a>          Make notes from the video.</p> <p>Watch videos 7-9 from the following link  <a href="https://members.gcsepod.com/shared/podcasts/title/10797/66183">https://members.gcsepod.com/shared/podcasts/title/10797/66183</a>          Make notes from the video</p>