



Sandon Road, Meir, Stoke-on-Trent, ST3 7DF Telephone: 01782 377100 Fax: 01782 377101

Email: info@omera.co.uk Website: www.ormistonmeridianacademy.co.uk

Principal: Mrs C Stanyer

Subject: Trilogy Foundation BIOLOGY Year 11 Curriculum Map 2020 – 2021

Resources:

Week Commencing	Topic (including links to additional resources)	Assessment Window
1 st September	Bridging work	
7 th September	Bridging work	
14 th September	Bridging work	
21 st September	Bridging work	
28 th September	<p><u>TOPIC 7 ECOLOGY</u> <u>Lesson 1 – Communities</u> An ecosystem is the interaction of a community of living organisms with the non-living (abiotic) parts of their environment. To survive and reproduce, organisms require a supply of materials from their surroundings and from the other living organisms there. Plants in a community or habitat often compete with each other for light and space, and for water and mineral ions from the soil. Animals often compete with each other for food, mates and territory. Within a community each species depends on other species for food, shelter, pollination, seed dispersal etc. If one species is removed it can affect the whole community. This is called interdependence.</p> <p>A stable community is one where all the species and environmental factors are in balance so that population sizes remain fairly constant.</p> <p>Tropical rainforests and ancient oak woodlands are stable communities.</p> <p><u>Lesson 2 – Abiotic factors</u> Students should be able to explain how a change in an abiotic factor would affect a given community given appropriate data or context. Abiotic (non-living) factors which can affect a community are:</p> <ul style="list-style-type: none"> •light intensity •temperature •moisture levels •soil pH and mineral content •wind intensity and direction •carbon dioxide levels for plants •oxygen levels for aquatic animals. 	
5 th October	<p><u>Lesson 3 – Biotic factors</u> Students should be able to explain how a change in a biotic factor might affect a given community given appropriate data or context.</p>	

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	<p>Biotic (living) factors which can affect a community are:</p> <ul style="list-style-type: none"> •availability of food •new predators arriving •new pathogens •one species outcompeting another so the numbers are no longer sufficient to breed, such as the introduction of grey squirrels into southern Britain outcompeted the native red squirrels. 	
12 th October	<p><u>Lesson 4 – Adaptations</u> Students should be able to explain how organisms are adapted to live in their natural environment, given appropriate information. Organisms have features (adaptations) that enable them to survive in the conditions in which they normally live. These adaptations may be structural, behavioural or functional. Some organisms live in environments that are very extreme, such as at high temperature, pressure, or salt concentration. These organisms are called extremophiles. Bacteria living in deep sea vents are extremophiles. Students should understand that photosynthetic organisms are the producers of biomass for life on Earth.</p> <p><u>Lesson 5 – Required practical</u> Measure the population size of a common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of this species</p>	
19 th October (inset Friday 22 nd)	<p><u>Lesson 6 – How are materials cycled</u> All materials in the living world are recycled to provide the building blocks for future organisms. The carbon cycle returns carbon from organisms to the atmosphere as carbon dioxide to be used by plants in photosynthesis. The water cycle provides fresh water for plants and animals on land before draining into the seas. Water is continuously evaporated and precipitated.</p>	
Half Term		
2 nd November	<p><u>Lesson 7- How are material cycled continued</u> Students should be able to explain the role of microorganisms in cycling materials through an ecosystem. Decay of dead plants and animals by microorganisms returns carbon to the atmosphere as carbon dioxide and mineral ions to the soil.</p>	
9 th November	AR1 Assessment	AR1 ASSESSMENTS
16 th November	DDI Wave 1 DDI Wave 2	AR1 ASSESSMENTS
23 rd November	Reassessment	
30 th November	<p><u>Lesson 8 – Waste management</u> Rapid growth in the human population and an increase in the standard of living mean that increasingly more resources are used and more waste is produced. Unless waste and chemical materials are properly handled, more pollution will be caused. Pollution can occur:</p> <ul style="list-style-type: none"> • in water, from sewage, fertiliser or toxic chemicals • in air, from smoke and gases such as sulphur dioxide, which contributes to acid rain • on land, from landfill and from toxic chemicals such as pesticides and herbicides, which may be washed from land into water. <p>Pollution kills plants and animals which can reduce biodiversity.</p> <p><u>Lesson 9 – Land use</u> Humans reduce the amount of land available for other animals and plants by building, quarrying, farming and dumping waste.</p>	

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	The destruction of peat bogs, and other areas of peat to produce garden compost, reduces the area of this habitat and thus the variety of different plant, animal and microorganism species that live there (biodiversity). The decay or burning of the peat releases carbon dioxide into the atmosphere.	
7 th December	<p><u>Lesson 10 – Deforestation</u></p> <p>Large-scale deforestation in tropical areas has occurred to:</p> <ul style="list-style-type: none"> •provide land for cattle and rice fields to provide more food •grow crops from which biofuels, based on ethanol, can be produced. <p>This destruction of large areas of trees has:</p> <ul style="list-style-type: none"> •increased the release of carbon dioxide into the atmosphere (because of burning and the activities of microorganisms) •reduced the rate at which carbon dioxide is removed from the atmosphere by photosynthesis and 'locked up' in wood for hundreds of years •led to reduction in biodiversity of both plant species and the animals that live there. 	
14 th December	<p><u>Lesson 11 – Global warming</u></p> <p>Levels of carbon dioxide and methane in the atmosphere are increasing, and contribute to 'global warming'.</p> <p>Biological consequences of global warming include:</p> <ul style="list-style-type: none"> •loss of habitat when low-lying areas are flooded by rising sea levels •changes in the distribution of species in areas where temperature or rainfall has changed •changes to the migration patterns of animals <p><u>Lesson 12 – Biodiversity</u></p> <p>Biodiversity is the variety of all the different species of organisms on earth, or within an ecosystem.</p> <p>A great biodiversity ensures the stability of ecosystems due to the interdependencies of one species on another for food, shelter and the maintenance of the physical environment.</p> <p>The future of the human species on Earth relies on us maintaining a good level of biodiversity.</p> <p>Many human activities are reducing biodiversity and only recently have measures been taken to try to stop this reduction.</p>	
Christmas Holiday		
4 th January	<p><u>Lesson 13 – Maintaining biodiversity</u></p> <p>Scientists and concerned citizens have put in place programmes to reduce these negative effects on ecosystems and biodiversity.</p> <p>These include:</p> <ul style="list-style-type: none"> •breeding programmes for endangered species •protection and regeneration of rare habitats such as coral reefs, mangroves, and heathland •reintroduction of field margins and hedgerows in agricultural areas where farmers grow only one type of crop •reduction of deforestation and carbon dioxide emissions by some governments •recycling resources rather than dumping waste in landfill. 	
11 th January	Prep for MOCKS	
18 th January	.PREP for MOCKS	
25 th January	PAPER 1 and PAPER 2 (2020 Summer used in the autumn)	FULL MOCK EXAMS

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1 st February		FULL MOCK EXAMS
8 th February (Inset 12 th February)		FULL MOCK EXAMS
February Half Term		
22 nd February	Revision	
1 st March	Revision	
8 th March	Revision	
15 th March	Revision	
22 nd March	Revision	
29 th March	Revision	
Easter Holiday		
19 th April	Revision	
26 th April	Revision	
3 rd May	Revision	
10 th May	EXAMS BEGIN	
17 th May	EXAMS	
24 th May	EXAMS	
7 th June	EXAMS	
14 th June	EXAMS	
21 st June	EXAMS	
28 th June		

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5 th July		
12 th July		
19 th July (School closed from 22 nd)		

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