

Meden School Curriculum Planning							
Subject	Biology	Year Group	8	Sequence No.	1	Topic	Ecosystems

Retrieval	Core Knowledge	Student Thinking
What do teachers need retrieve from students before they start teaching new content ?	What specific ambitious knowledge do teachers need teach students in this sequence of learning?	What real life examples can be applied to this sequence of learning to development of our students thinking, encouraging them to see the inequalities around them and 'do something about them!'
<p>KS2: Year 2 Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p>KS2: Year 3 Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <p>KS2: Year 4</p>	<p>L1: Understand what a food chain is and that they always start with a producer which will be a plant or algae, which is followed by the primary consumer, secondary consumer and tertiary consumer. Know that producers are named that because they create their own food. Define the term biomass, mass of living material. Define what a consumer is, an organism that eats another organisms. Know what an apex predator is and provide examples. Understand why there can only be four to five links in a food chain due to the energy being used in digestion, passing out into the environment as heat energy and excreted as waste, meaning that only 10% of energy is passed on. Understand what the arrows mean on food chains, what is eaten by what, the passing of energy.</p> <p>L2: Discover that food webs are made up of many food chains and what the effect of losing one organism in the food web would mean for the other organisms. Be able to define the term ecosystem, a complex community full of many different organisms that interact in different ways and to be able to define the term interdependence, different species depend on each other for things like food, shelter, pollination and seed dispersal. Understand what is meant by the terms carnivore, omnivore and herbivore, only eats meat, eats both plants and meat and only eats plants. Discover what is meant by a stable community, all the species and environmental factors are in balance, so population sizes stay about the same.</p> <p>L3: Discover what is a predator prey cycle is and interpret graphs presenting predator prey cycle data. Know why population sizes are limited due to limited resources such as food and understand what the terms predator (a consumer that hunts and kills other animals) and prey (an animal that is hunted and killed by another for food) means. Understanding that predator prey cycles are always out of phase due to different reproduction times of animals and to know the relationship between the predator or prey if their numbers were to fluctuate.</p> <p>L4: Understand how to read and draw a pyramid of numbers and knowing that they are not always pyramid shaped and that the size of the organism is not taken into account. Define the term trophic level, a position on the food chain.</p>	<p>L3: Should hunting of animals for sport be legal in the UK.</p> <p>L6: Should DDT ever have been used in insecticides?</p> <p>Should fertilisers be used in farming considering the harm they could have on an ecosystems (algae bloom)?</p> <p>L7: Should zoos be used to maintain animal populations?</p> <p>Should the Government pay Farmers for introducing field margins?</p> <p>Should we dictate to other countries whether they should or should not cut down rainforests?</p> <p>Should recycling be made mandatory in UK law?</p>

<p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>KS2: Year 6</p> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p>L5: Discovering what a pyramid of biomass represents, that energy is transferred up the pyramid, they are always pyramid shaped and the bars represent the number of the total mass in that trophic level. Understand that there is less energy and biomass every time you move up a trophic level.</p> <p>L6: Discover what pesticides (kills pests), insecticides (kills insects), herbicides (kills weeds) and fungicides (kills fungi) are. Understand what is meant by the term bioaccumulation, the build up of poisons or toxins along a food chain and the impact this has on ecosystems. Introduced to a real-life example of bioaccumulation in DDT and the affects that it had.</p> <p>L7: Discovering what is meant by the term biodiversity, the variety of plant and animal life in the world or in a particular habitat. Researching why we need to maintain biodiversity for ensuring stable ecosystems, ensure human survival, finding chemicals to synthesise new drugs and pollinate crops. Applying this knowledge on how we can preserve biodiversity by using breeding programs, reintroducing field margins and hedgerows, recycling and reducing the amount of waste in landfills and protect and regenerate rare habitats. Understanding the impacts of these protective measures on local economies, the cost of programs, development of society and food security.</p> <p>L8: Introduction to biotic (living) and abiotic (non-living) factors and being able to provide examples of these. Linking into adaptations in animals, features or characteristics that allow them to live in certain environmental conditions. Discovering the three types of adaptations, structural features of an organism’s body structure such as shape or colour, behavioural the way in which an organism behaves and functional things that go on inside the organism’s body, such as metabolism and then identifying examples in organisms. Define the term extremophile, a microorganism that lives in extreme conditions.</p> <p>L9: Understanding why competition in animals occurs due to limited resources and knowing what animals will compete for food, water, mates and territory. Linking this to adaptations in animals which enable them to be more successful. Define the terms interspecific (two different species competing for the same resources) and intraspecific (the same species competing for the same resources),</p> <p>L10: Understanding why competition in plants occurs due to limited resources and knowing what plants will compete for space, water, mineral ions and sunlight. Linking this to adaptations in plants which enable them to be more successful.</p> <p>L11: EoTT L12: GPA</p>	
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