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Evolution

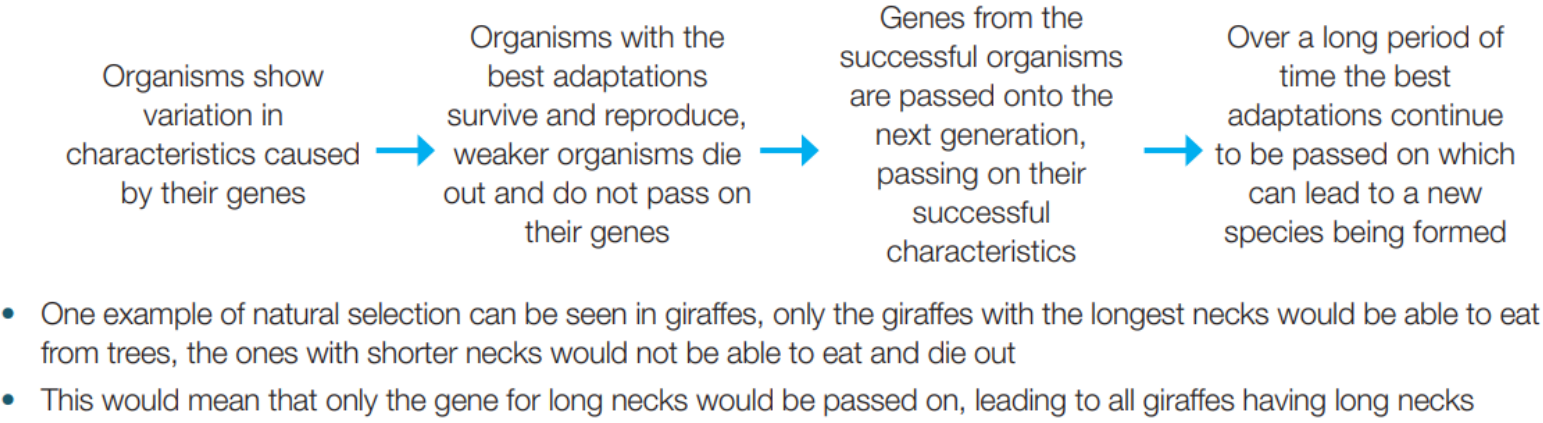
1	I can state that due to variation, some individuals within a species will compete more successfully
2	I can describe how more successful competition can result in extinction
3	I can explain how variation and environmental pressures can drive natural selection and lead to evolution
4	I can state that gene banks are important in maintaining biodiversity.
5	I can explain how antibiotic strains of bacteria evolve.
6	I can describe how fossils form.

	Keyword	Definition
1	biodiversity	A measure of the variety of all the different species of organisms on earth or within a particular ecosystem.
2	captive breeding	Breeding animals in human-controlled environments.
3	competition	When two or more living things struggle against each other to get the same resource.
4	conservation	Protecting a natural environment, to ensure that habitats are not lost.
5	endangered species	A species with only small numbers of organisms left in the world.
6	evolution	Theory that the animal and plant species living today descended from species that existed in the past.
7	extinct	When no more individuals of a species remain anywhere in the world.
8	fossil	The remains or traces of plants and animals that have turned to stone.
9	natural selection	Process by which species change over time in response to environmental changes and competition for resources. The organisms with the characteristics that are most suited to the environment survive and reproduce, passing on their genes.
10	peer review	The evaluation of a scientist’s work by another scientist.

- Careers:
- Biologist
 - Research scientist
 - Farmer
 - Zoologist

Natural selection

- Scientists believe that the organisms which we see on Earth today have gradually developed over millions of years, this is known as **evolution**
- Charles Darwin came up with the concept of **natural selection**, he said that only the best adapted animals will survive to pass on their **genes**, weaker animals will die out



Extinction

- A species will become **extinct** when all of a species die out
- The **fossil record** shows us that animals have existed in the past which have now become extinct
- Extinction can be caused by:
 - Changes to the environment
 - Destruction of habitat
 - New diseases
 - Introduction of new predators
 - Increased **competition**
- When a species becomes extinct, the variety of species within an ecosystem is reduced, this is also known as a reduction in **biodiversity**
- The more diverse a **population** is, the more likely they are to survive environmental changes





Future Learning:
 At GCSE you will learn how variation generated by mutations and sexual reproduction is the basis for natural selection; this is how species evolve and how an understanding of these processes has allowed scientists to intervene through selective breeding to produce livestock with favoured characteristics.

Prior Knowledge From KS2:
 At KS2 you should understand how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. You may have found out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.

Why?
 Gene mutations occur continuously and on rare occasions can affect the functioning of the animal or plant and therefore evolution of a species.

Homework Menu Grid

Complete some of the tasks below to reach a total of _____ points over this unit of work – Highlight the box once completed.

Topic	1 Point	2 Points	4 Points	6 Points	10 Points
Charles Darwin 	Print out a picture of 'Darwen's Finches'.	Find out three facts about the life of Charles Darwin.	Who was Alfred Russel Wallace and how is he linked to Charles Darwin?	Describe three pieces of evidence in support of Darwin's theory of natural selection.	Research Jean-Baptiste Lamarck's theory of evolution. Compare this to Charles Darwin's theory of evolution. To compare you must discuss both similarities and differences in their theories.
Natural selection 	Summarise natural selection in 100 words.	Describe why a polar bear is not well suited to live in a desert.	Make a set of 10 question cards with answers to pick out of a hat.	Describe in detail how peppered moths evolved as a result of the industrial revolution.	.Create a script for a play to demonstrate the process of natural selection.
Competition and extinction 	Make a list of things organisms compete for in order to survive.	Write a list of extinct species.	Make up a wordsearch using keywords from the topic. Make up a sentence about each key word, as a clue.	Research species that are currently 'endangered', what is being done to prevent their extinction?	Create a dramatic video clip showing how the Dodo bird became extinct.
Preserving biodiversity 	Write a definition for the word biodiversity.	How does captive breeding preserve a species?	Describe two advantages and disadvantages of captive breeding.	What human actions are currently threatening biodiversity of some environments?	Go onto BBC Bitesize Key Stage 3 Science. Do the Revise, Activity and Test for the topic of evolution. Print Screen the page with your test score and the answers then print it or send it to your teacher.

