



Science Home Learning Task

Year 9

Adaptation and Inheritance

Name _____

Tutor Group _____

Teacher _____

Given out: Monday 2 December Hand in: Monday 9 December

Parent/Carer Comment

Staff Comment

Target



Investigating Science

Welcome to your Science homework booklet. This booklet is designed to give you some extra practise on the key areas in the “adaptation and inheritance” section of the course.

You need to carry out all the tasks.

Don't forget to ask a parent/carer to sign the box on the front.

TASK 1- Reading task

Who was Mary Anning?



Mary Anning found and collected lots of fossils of prehistoric animals. She found them as she walked along the beach in Lyme Regis in Dorset. Mary's fossil hunting helped change the way people thought about the world. Mary was not trained as a scientist, but her fossils changed science. They showed prehistoric animals and plants were not the same as living animals. Some have died out and different ones have taken their place. This is called evolution. Mary's fossils have helped scientists understand how evolution happens.

Mary was born in 1799 and died in 1847, during the reign of Queen Victoria. Mary's family was poor. Mary's father was a carpenter. Mr and Mrs Anning had nine children. Only Mary and her brother Joseph survived and grew up. The other children died. They picked up shells and stones to sell to visitors who were there on holiday. Mary spent most days looking for shells and fossils to sell. They called the fossils curiosities because no one knew what they were. Were they animals turned to stone by magic? Were they animals that died in The Flood, like in the Bible story, Noah's Ark?



Mary did not go to school much. Her family was too poor. And schools did not teach children about fossils. She taught herself how to read and write. She learned about rocks (geology) and about the structure of bodies (anatomy).



In 1811 Mary and Joseph were fossil hunting. They saw a skull sticking out of the rock in the cliff face.

Mary used a hammer to chip away at the rock. Very carefully she uncovered a skeleton. It looked like a crocodile. She had found the first complete fossil ichthyosaurus, or 'fish-lizard'.

Mary became quite famous and different scientists came to see her and the fossils she found. Most days Mary went fossil hunting with her dog, Tray. She found a giant sea reptile, or Plesiosaur. She also found a flying reptile, and a prehistoric

fish. Mary liked to hunt on the beach after a storm. The wind, rain and waves made the rocks crumble and made it easier to spot fossils.

Read the account of Mary Anning's life carefully and then answer these questions.

1. Why is Mary Anning famous?

2. How do you know that life was hard for Mary's family?

3. Explain 3 reasons why Mary's achievements were so amazing at this time?
*

*

*

4. How old was Mary when she died?

5. Why did they call the fossils curiosities?

6. Where did Mary live?

7. Why was this a good place to find and sell her fossils?

8. When was the best time to go fossil hunting?

9. How did Mary get the fossils out of the rocks and why would she have to be very careful?

10. How did Mary's fossils change science?

TASK 2- Competition and adaptation

Plants and animals have to compete for resources. Answer the questions below using the keywords in the box to help.

light	food	water	space	mates	minerals
--------------	-------------	--------------	--------------	--------------	-----------------

a) Plants need to **compete** for:-

b) They need to **compete** for these because

c) Animals need to **compete** for:-

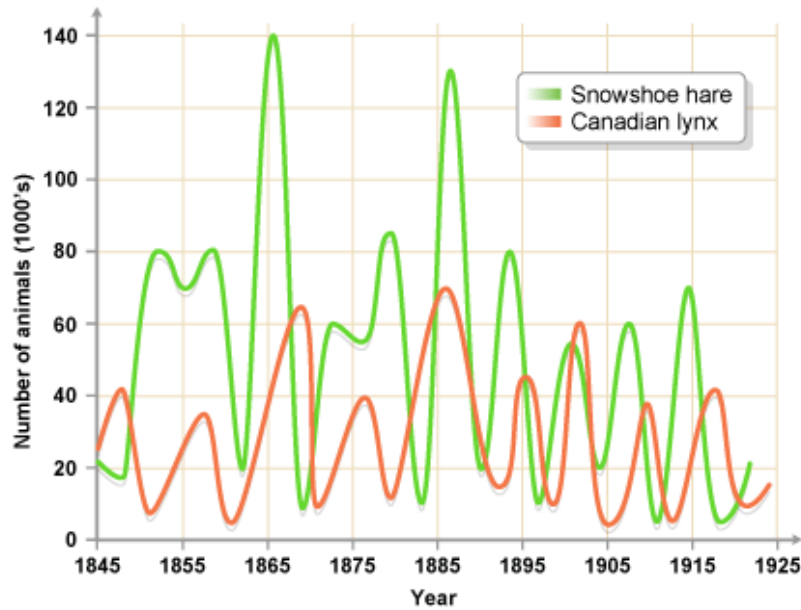
d) They need to **compete** for these because

TASK 2 continued

Choose a plant or animal that lives in hot, dry conditions e.g. a desert. Write down the name of your plant or animal, the features that it has and how they help it to survive in those conditions. You can include a picture of your plant or animal. Use the space below.

TASK 3 – Adapting to change

A predator and its prey depend on each other for survival – there is an **interdependence** between them. The graph below shows one such relationship between the Canadian lynx (predator) and the snowshoe hare (its prey). **Hint:- try to use the words “increase” and “decrease” instead of “goes up” or “goes down”.**



a) Using the graph above, describe the pattern of the **predator** and **prey** numbers.

b) Give reasons for the changes in the **predator** and **prey** numbers that you have described above.

c) For each of the keywords below, write down its definition (what it means) and give an example for each word and how it helps the plant or animal to survive.

Adaptation

Definition:

Example:-

Hibernation

Definition:

Example:-

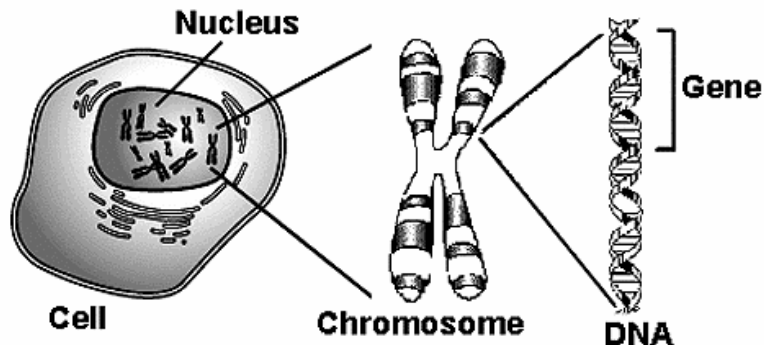
Migration

Definition:

Example:-

TASK 4 – Inheritance and variation

a) The picture below shows the genetic material found in our cells.



Use the words in the box to fill in the gaps in the sentences below.

nucleus	genes	DNA	chromosomes
embryo	characteristics	46	23

Our genetic material is found in the _____ of the cell. The genetic material stored in the cell is made of a chemical called _____. The genetic material is organised into long strands called _____. A small section of a chromosome is called a _____.

Humans have _____ chromosomes in our body cells. The chromosomes contain the information needed for our _____. You inherit half of your _____ from your mother and half from your father. This is why you share some of your _____ with your mother and some with your father.

Egg and sperm cells are the only cells to have _____ chromosomes. During fertilisation, the egg and sperm cells join together to produce an _____ with _____ chromosomes.

TASK 5 – Natural selection

The process of **natural selection** describes how living things evolve over time and has several stages. Complete the boxes to show the steps of the process in order.

a) **Variation** – describe variation.



b) **“Survival of the fittest”** - describe the process.



c) **Genes passed on** – describe how this happens.



d) **Evolution (new species)** – describe how this leads to evolution.

TASK 6 – Extinction

Many animal species have not been able to adapt and survive in a particular environment and have died out – they have become extinct. **The dodo, dinosaurs, woolly mammoths and black rhino** are just a few examples.

Choose an animal that has become extinct and find out, in as much detail as you can, what led to the species becoming extinct. Use the space below.

Plan your work here

Carry out your work here

