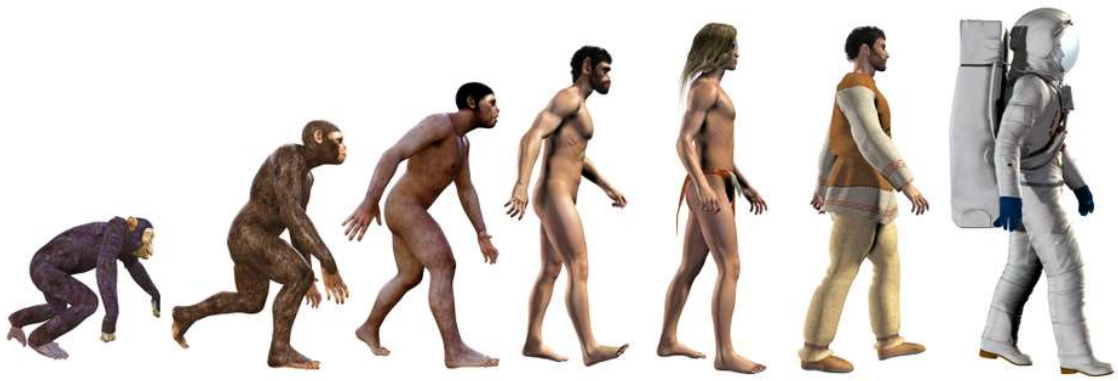
Fossils and animals over time



YEAR 5

Autumn 2

NAME:

CLASS:

Fossils and living creatures across time | Year Five | Autumn 2

Fossilisation process

1.	Animal dies, its skeleton settles on the sea floor and is buried by sediment.
2.	The sediment surrounding the skeleton thickens and begins to turn to stone.
3.	The skeleton dissolves and a mould is formed.
4.	Minerals crystallise inside the mould and a cast is formed.
5.	The fossil is exposed in the Earth's surface.

How evolution works:

1. Not all individuals of a species are exactly the same. There is variation between them.
2. The individuals of a species who are best adapted to their environment are most likely to survive.
3. These individuals are more likely reproduce and pass their useful adaptations onto their offspring.
4. Individuals that were poorly adapted were less likely to survive.
5. Over time, the characteristics that help survival become more common and a species gradually changes.
6. Given enough time, these small changes can add up to the extent that a new species altogether can evolve.

Variation

- The differences between living things in a species.

Adaptation:

- How living things are specialised to suit their environment.

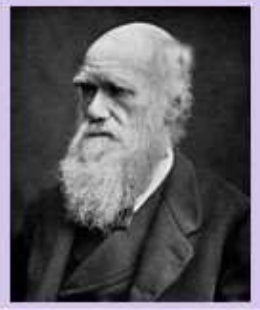
Species:

- A group of living things with very similar characteristics. They can breed together to make more living things of the same type.

Evolution:

- The process by which living things can gradually change over time.

Charles Darwin



Born: 1809

Died: 1882

Nationality: British

Famous for: his book 'On the Origin of Species' (1859). In his book he laid out his theory of evolution which was very controversial at the time but is now widely accepted as scientific fact.

Life on Earth timeline

Cenozoic Era	Modern humans first appear (Homo sapiens)	0.2 mya
	First human-like animals appear	2.5 mya
Mesozioc Era	Dinosaurs go extinct	66.4 mya
	First flowering plants	141 mya
	First birds	195 mya
	First dinosaurs and mammals	230 mya
Paleozoic Era	First reptiles	340 mya
	First insects	360 mya
	First amphibians	370 mya
	Plants appear on land	420 mya
	Cambrian explosion – the first fish	530 mya
Proterzoic Era	Simple single celled creatures appear	700 mya
	Algae, fungi, single-celled animals appear	2100 mya
	Life first begins with single-celled creatures like bacteria	3600 mya

Week	Lesson Title	What will I learn?	Learning Review
1	What is the theory of evolution?	- how random changes in characteristics lead to an advantage in an organism - how the survival of these organisms leads to evolution - how Charles Darwin came up with the theory of evolution	1._____ 2._____ 3._____
2	How do fossils provide evidence for evolution?	- what a fossil is and how it is made - what fossils show us about changes in species over time - why fossils do not give us a complete record of past organisms	1._____ 2._____ 3._____
3	Which types of organism have lived over each era of time?	- the names of the main periods of time - which groups of organisms existed in each period - the reasons why some organisms became extinct	1._____ 2._____ 3._____
4	How have different animal kingdoms developed over time?	- the name of each of the animal kingdoms - the key traits of each animal kingdom - how the evolutionary tree shows us how animal kingdoms are related	1._____ 2._____ 3._____
5	What impact have homo sapiens had on the organisms over time?	- know the key stages in the development of homo sapiens - describe the impact of homo sapiens on plants - describe the impact of homo sapiens on animals	1._____ 2._____ 3._____
6	What is the likely impact of humans on organisms in the future?	- describe the decline in numbers of species over the last 200 years - describe the impact of homo sapiens hunting animals and cutting down forest - know what a conservationist is and what they are trying to do	1._____ 2._____ 3._____

1. What is the theory of evolution?

Do Now

1. Science is about asking and answering questions. What science question have you always wanted to know the answer to? Write it on the lines below.

_____

_____

2. Write in the definition of each of the things below. If you are stuck, look at your knowledge organiser on page 2.

Word	Definition
	The differences between living things in a species.
	How living things are specialised to suit their environment.
	A group of living things with very similar characteristics. They can breed together to make more living things of the same type.
	The process by which living things can gradually change over time.

Read the following passage about Darwin's observations.

Darwin was born in 1809 in Shrewsbury, England. He was interested in lots of different types of animals from a young age. When he was 22 years old, he went on a trip on a boat called the HMS Beagle that travelled all around the world.

He discovered that different animals seemed to have different characteristics that meant they were well suited to their surroundings. For example, he noticed that different types of birds called 'finches' all lived on islands that were close to each other. However, each island had finches with different types of beaks that were helpful to get different types of food that could only be found on that island. He decided that over time, one type of finch must have existed but that each family of finches must have gradually changed over lots of generations to make new finches which were suited to each island. With this in mind, he came up with his 'Theory of Evolution'.

Keyword – a 'characteristic' is a physical feature shown in a living organism (for example, the shape of a bird's beak).

Find the answers to the quick questions below:

1. When was Darwin born? _____
2. Darwin was interested in _____.
3. How old was he when he sailed on the HMS Beagle? _____
4. Darwin realised that different _____ seemed to have different _____ that meant they were well suited to _____ .
5. This helped him come up with the theory of _____ .

Match up the different types of beaks that birds had with the type of food they would get from their surroundings:

	Large and slightly turned to remove fruit from branches
	Long and narrow to pick out grubs from deep inside bits of wood
	Gripping small branches to use as a tool
	Big and pointed to be able to break open nuts and get into seeds

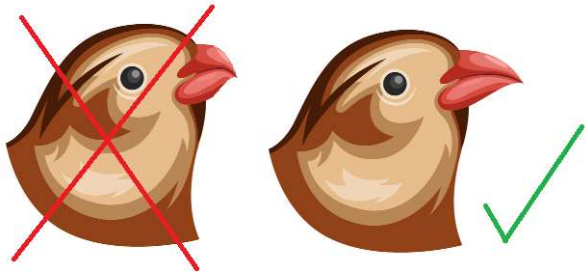
Read the following passage about Darwin's theory of evolution.

A species is a group of living things with similar features that can mate to create offspring (for example, dogs). Darwin's theory of evolution suggested that species will change over time to make new versions of the species. This happens in a number of stages.

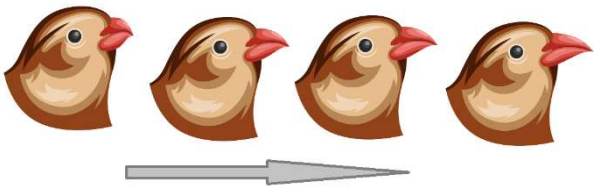
In every species of living things, each of the living things are slightly different. We call their physical features 'characteristics' and we say that when there are differences in characteristics that there is 'variation'.

Humans can use tools and types of clothing to survive, living things that live in the wild have to survive on their own. Sometimes, living things are killed for a number of reasons. For example, they may be hunted, they may become diseased, they may struggle to find food or struggle to stay alive in extreme heat or extreme cold.

However, sometimes, the living thing will survive ***because of their differences***. For the finches that Darwin observed, if the only food available were to be the grubs that are found deep in wood, only a bird with a longer peak may be able to reach the food. This means the birds with longer beaks survive and reproduce and the ones without this characteristic may die without reproducing.



We say that the bird with the long beak was 'best adapted' to survive so it produces offspring that are more likely to have longer beaks. If this happens again and again with each set of offspring birds that reproduce, over time, the adaptation of a long beak becomes more common until ***all*** finches in that place have long beaks. These finches have 'evolved'.



Find answers to the questions below in the text above.

1) For living things, we call the physical features of the organism the _____ and when there are differences between them we say there is _____.

2) What are four reasons why a living thing may not survive?
   a. they may be _____ .
   b. they may become _____ .
   c. they may struggle to find _____ .
   d. they may not stay alive in extreme _____ or extreme _____ .

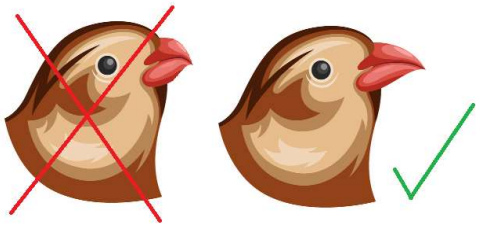
3) Sometimes, if an organism has a characteristic that makes them different, they may be able to _____ and _____ when another organism would die. This means that they create offspring (children) and this new characterstic will be _____ to the offspring of this organism.

4) If this change helps the offspring survive, grow up and have more offspring again and again with the same features, we say the species has completely a_____ and it has now e_____.

Fill in the gaps in the writing to describe what happens in each stage of evolution below:

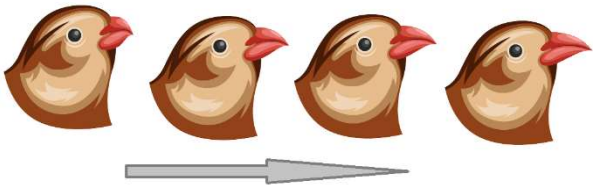
Not all individuals of a species are exactly the _____. There is _____ between them.

The individuals of a species who are best _____ to their environment are most likely to _____.

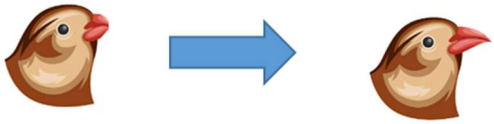


These individuals are more likely _____ and pass their useful adaptations onto their _____.

Individuals that were poorly _____ were less likely to _____ .



Over time, the _____ that help survival become more common and a species gradually _____.



Given enough _____, these small changes can add up to the extent that a new _____ altogether can evolve.

Characteristics | changes | time | Variation | Adapted | Survive | Reproduce | Offspring | Survive | Same | species | Adapted

Speak to a partner about 3 things you observe happening to the number of each type mice in the diagram

What happens to the number of white mice and black mice over time and why?:

Picture	*Number of white mice*	*Number of black mice*	*Why do you think it has changed?*
1			This is the number of mice at the beginning.
2			The numbers has changed because_____
3			The numbers has changed because_____

Many people believe that giraffes have long necks because they evolved long necks over many generations. Explain how giraffes may have evolved long necks.

Re-draft your explanation to explain how giraffes may have evolved long necks over time

Return to page 3 to complete the learning review.

2. How do fossils provide evidence for evolution?

<u>Do now</u> – fill in the gaps to say what happens during evolution

- Not all individuals of a species are exactly the _____. There are _____ between them.
- The individuals of a species who are best _____ to their environment are most likely to _____.
- These individuals are more likely _____ and pass their useful adaptations onto their _____.
- Individuals that were poorly _____ are less likely to _____ .
- Over time, the _____ that make survival more likely become more common and a species gradually _____.
- Given enough _____, these small changes can add up to the extent that a new _____ can evolve altogether.

Listen to the story of how fossils are made.

Discuss with a partner what each picture shows us about how fossils are formed.

Fill in the stages of a fossil being made using the words underneath to help you

1.	When an animal dies, its skeleton settles onto the _____ and it is buried by sediment.
2.	The sediment surrounding the skeleton _____ and begins to turn _____ .
3.	The skeleton _____ and a _____ is formed.
4.	Minerals _____ inside the mould and a _____ is formed.
5.	The fossil is exposed at the Earth's _____ .

stone | dissolves | surface | cast | seafloor | mould | crystallise | thickens

Discuss with a partner to answer 'How might fossils help us to understand how species have changed over many years?'

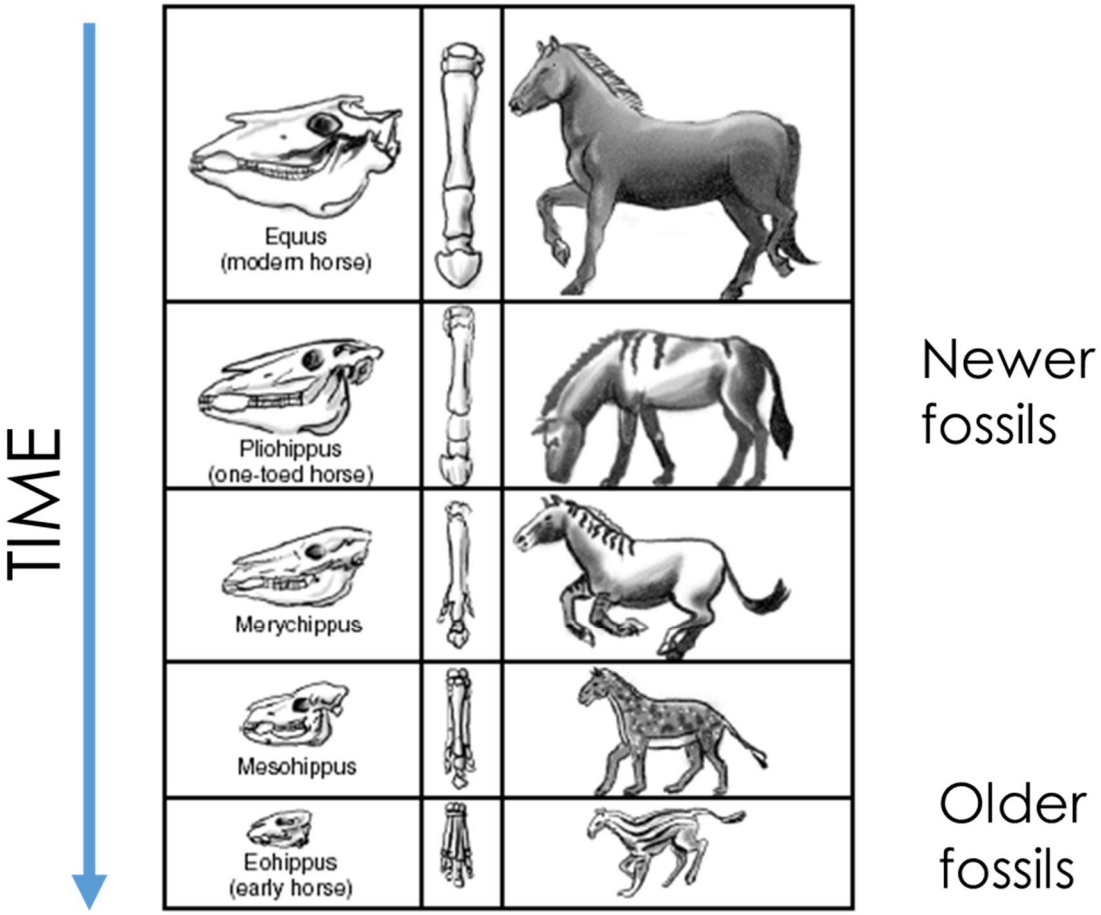
Read the following passage about how fossils show us how different species have changed over time.

Darwin's theory of evolution suggested that different species will change over time. Fossils show us a range of living creatures from across different times in the past. This is known as the 'fossil record'.

How can we know when each fossil is from? Rock most often forms in layers where the higher the level of the rock, the more recently it has been made.

If we find the fossils in newer rock, we know the organisms existed more recently. If we find the fossils in older rock, we know the organisms were from much longer ago. If we get fossils from similar organisms, we can see how those species have changed over time.

For example the pictures below show a number of fossils over time that show how horses have developed from something called 'Echippus'.



Answer the questions below using the text above

1. The collection of fossils found across different ages of rock is known as the _____ .

2. Overall, the deeper in the ground we go, the _____ the rock. This means, the fossils found deepest in the ground are the _____ .

3. Overall, the closer the rock is to the surface, the _____ the rock is. This means, the fossils found here are the _____ .

4. Put the following fossils of organisms related to the modern day horse in order of oldest to newest (use the diagram to help you):

   Merrychippus | Pliohippus | Echippus | Equus | Mesohippus

   Oldest: _____

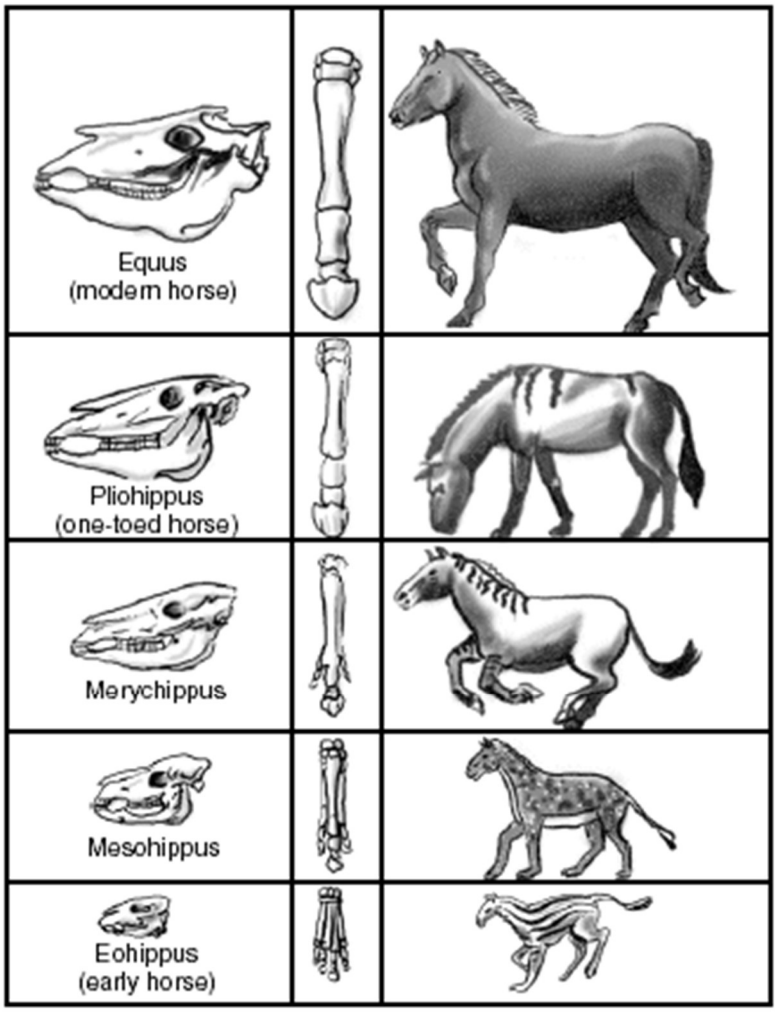
   _____

   _____

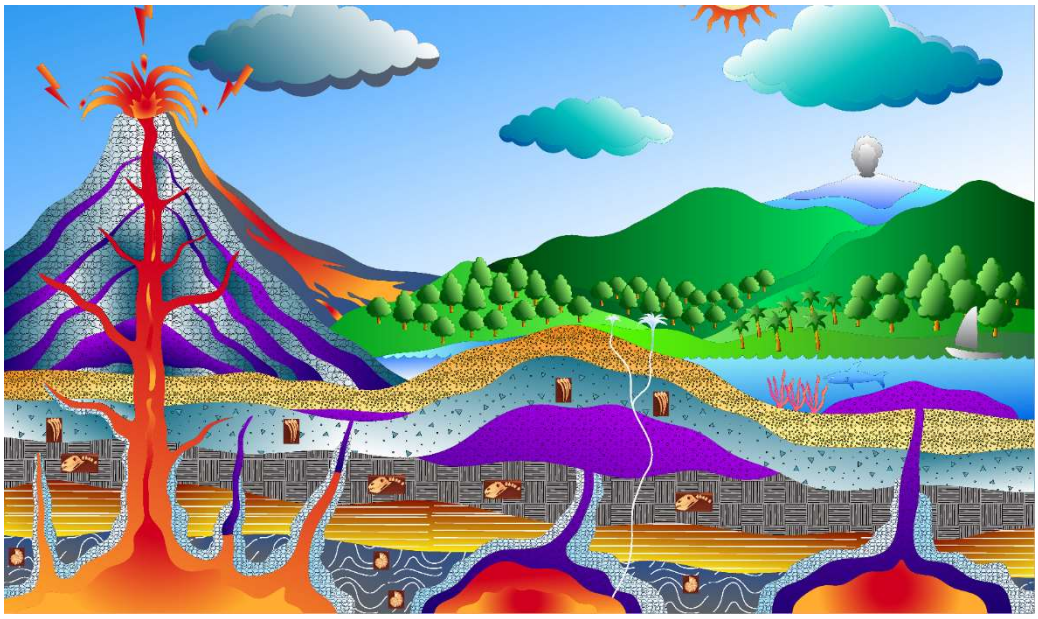
   _____

   Newest Equus

Look at the diagrams of the sets of the fossils shown over time – annotate to show how an Echippus evolved over time to become an Equus we have seen today.



Discuss with a partner to why some fossils that have once been in rock will never be found (use the diagram to help you and think about the rock cycle)



Write down the reasons why some living creatures are missing from the fossil record

In the rock cycle, some rocks that contain fossils are _____

_____

_____

Also, most organisms that have lived in the past are not seen in the fossil record because only a small amount _____ .

The only organisms that became fossils were ones that _____

_____ .

Retrieval Practice

1) When we consider a species of a living thing, we call the physical features of the organism the _____ and when there are differences between them we say there is _____.

2) What are four reasons why a living thing may not survive?

   a. they may be _____ .

   b. they may become _____ .

   c. they may struggle to find _____ .

   d. they may not stay alive in extreme _____ or extreme _____ .

3) Fill in the gaps below to describe how a fossil is created:

1.	Animal dies, its skeleton settles _____ and is buried by sediment.
2.	The sediment surrounding the skeleton _____ and begins to turn _____ .
3.	The skeleton _____ and a _____ is formed.
4.	Minerals _____ inside the mould and a _____ is formed.
5.	The fossil is exposed at the Earth's _____ .

stone | dissolves | surface | cast | seafloor | mould | crystallise | thickens

4) What is one reason why the fossil record has some organisms missing from it?

_____

Return to page 3 to complete the learning review.

3. What are the different animal kingdoms?

Do now

Complete the multiple choice quiz below

1. Which word describes differences between organisms of the same species?
   i) Characteristics
   ii) Evolution
   iii) Variation
   iv) Fossilisation

2. Which **two reasons** below explain why the fossil record is not complete?
   i) The bodies of many animals decomposed before they were covered over on the seabed
   ii) There were not many organisms around in the years gone by
   iii) Fossils have been burned up as fuel
   iv) Some fossils were in rock that has been melted to make magma

3. Why are some new characteristics passed on over time?
   i) Animals choose to change
   ii) The new characteristic helps the organisms to survive so they reproduce
   iii) Weaker organisms stay alive for longer
   iv) New organisms appear on their own out of nowhere

Talk to a partner – what are some similarities and differences between the animals on the board?

Read the comprehension about kingdoms

All living things that exist have been put into categories according to different kinds of characteristics that they have. Each of these categories are called 'kingdoms'. These kingdoms are called by latin names: **Animalia**, **Plantae**, **Fungi**, **Prokaryotes** and **Protoctista**.

Prokaryotes and Protoctista are micro-organisms (so small that we can't see them) such as bacteria and viruses. Animalia is the kingdom of animals – organisms that eat other organisms like Rabbits or Whales. Plantae is the kingdom of plants – organisms that create they own food using sunlight such as trees or flowers. Fungi grow from the remains of other organisms such as mushrooms or yeast.

Find answers the to to the questions below in the text above

1. What are the names of each of the kingdoms

   _____ , _____ , _____ ,

   _____ , _____ .

2. Match up the kingdoms with the characteristics that we observe in that kingdom

Prokaryotes and Protoctista	grow from the remains of other organisms
Animalia	the kingdom of animals – organisms that eat other organisms
Plantae	are micro-organisms (so small that we can't see them)
Fungi	the kingdom of plants – organisms that create they own food using sunlight

3. Give an example of each kingdom

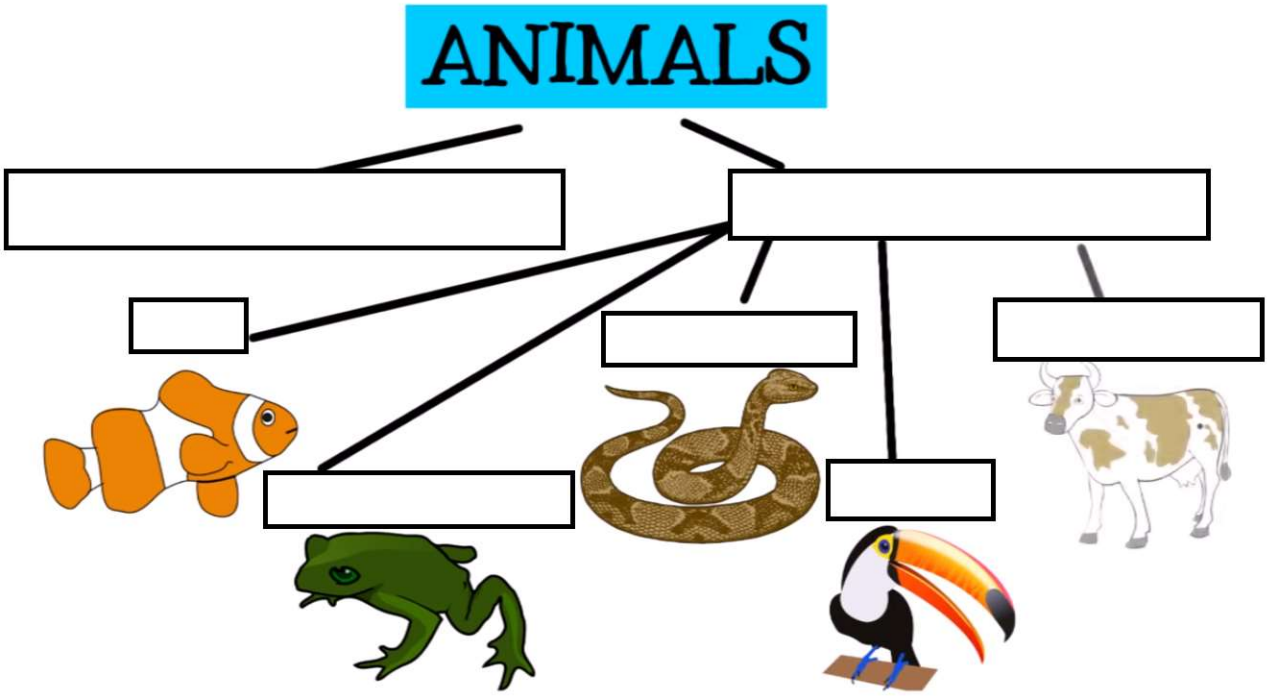
Prokaryotes/Protocista: _____

Animalia: _____

Plantae: _____

Fungi: _____

Watch the video and fill in the categories of animals in the diagram below



What is the different between vertebrates and invertebrates?

Vertebrates have _____ . Invertebrates do not have _____.

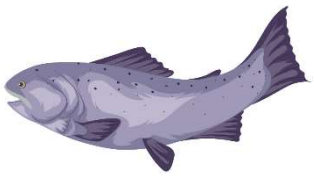
Give 3 examples of invertebrates:

1) _____
2) _____
3) _____

Read the comprehension about each of the animal kingdoms and answer the questions below:

The 'animal kingdoms' are the 5 main types of categories of vertebrates. We can tell the difference between each kingdom by their characteristics. The names of each of the animal kingdoms are Fish, Mammals, Reptiles, Birds and Amphibians.

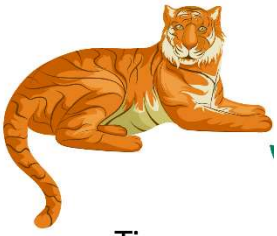
Fish are cold-blooded organisms (which means they do not control their own body temperature) that live in water. They breathe by taking oxygen from water as they swim using their gills. They have scales across their skin and lay eggs when they reproduce. Some examples are goldfish and sharks.



Salmon

Add information about fish to the table below.

Mammals are warm blooded organisms that have either hair or fur. They breathe by drawing air into their lungs and give birth to offspring that are alive. All mammal babies are given milk by their mothers to help them when they are born. Some examples are horses and cats.



Tiger

Add information about mammals to the table below.

Reptiles have dry, scaly skin and are cold blooded like fish. Also like fish, they lay eggs but do so on land where the majority of reptiles spend all of their time. They either have short legs or no legs at all. Some examples are snakes and crocodiles.

Turtle

Add information about reptiles to the table below.

Birds have feathers instead of scales or fur and almost all birds can fly. They lay eggs which hatch into their offspring and are warm blooded. They have two wings and two legs and have beaks or bills. Some examples of birds are chickens and ostriches.

Eagle

Add information about birds to the table below.

Amphibians are cold blooded and can live on land or in water. They simply have skin which is always kept moist. They lay their eggs in water and their offspring hatch and grow until they are large enough to also spend time on land. Some examples of amphibians are frogs and newts.

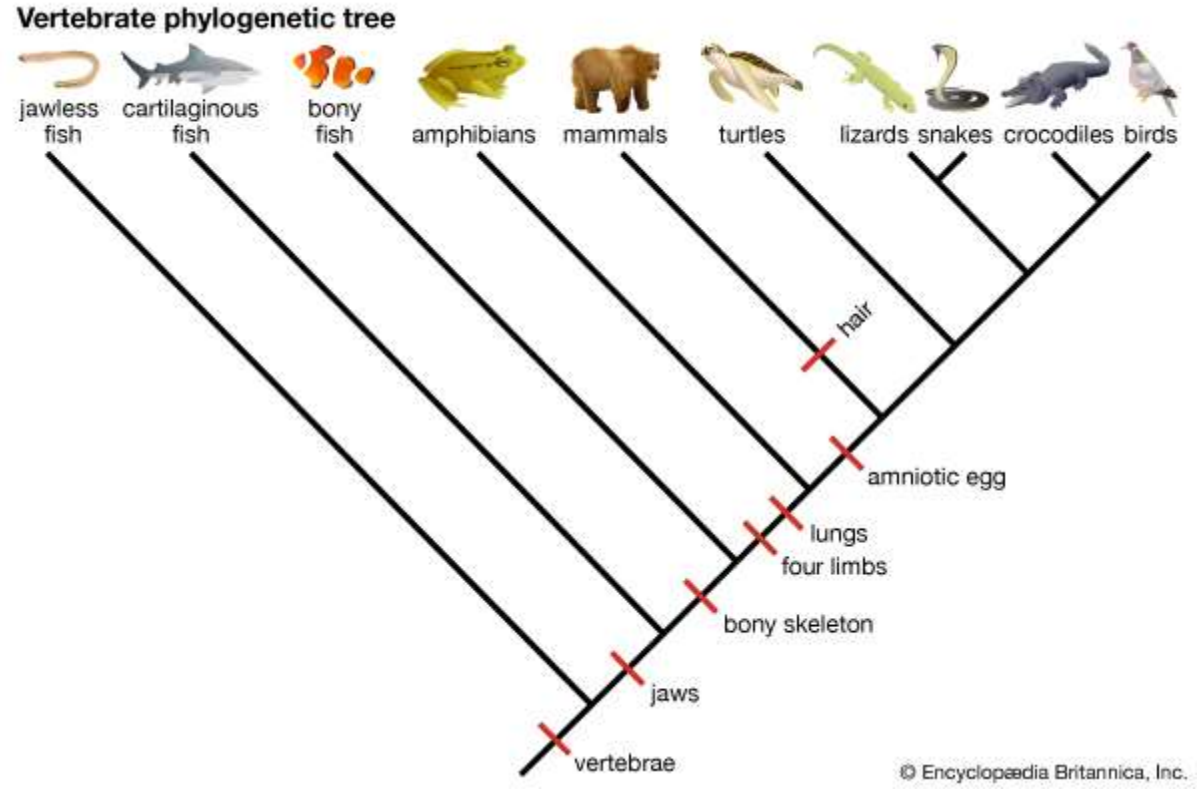
Toad

Add information about amphibians to the table below.

Fill in the table below to show say what characteristics each animal kingdom has:

Animal Kingdom	***Cold blooded or warm***	***Fur, feathers or scales?***	***Eggs or live young?***	***Legs?***	***Give 2 examples***
Fish					
Mammal					
Reptile					
Birds					
Amphibians					

Look at the 'evolutionary tree' below. This shows us a history of how different living organisms evolved away from each other.



Answer the questions below:

1) Which living organisms are most closely related to each other?

_____

2) Which living organisms are least closely related to each other?

_____

Return to page 3 to complete the learning review

4. Which organisms lived during each era of time?

Do now

Complete the multiple choice quiz below

1. Which of the following is an example of a protoctista?
   i) Bacteria
   ii) A cow
   iii) Mushrooms
   iv) A tree

2. What is the difference between a vertebrate and an invertebrate?
   i) One gives birth to live young, one doesn't
   ii) One has dry, scaly skin, one doesn't
   iii) One has a backbone, one doesn't
   iv) One does not exist anymore

3. Which of the following is only true of mammals?
   i) They lay eggs
   ii) They have wings
   iii) They can live in water and on land
   iv) Mothers feed their young with milk

4. What is a fossil?
   i) A creature found in a rock that is alive
   ii) The imprint in rock left over by a creature from a long time ago
   iii) Real bones that have survived being crushed in rock
   iv) Rock that has melted to become magma

Read the comprehension below about extinction.

Extinction of a species takes place when there are no longer any members of a species alive. If this happens, we say that the species is extinct. Although it is often thought that extinctions are rare and dramatic events, the fact is many, many species have become extinct since life was first formed.

Extinction takes place when there is a change in conditions that a species cannot adapt to and therefore they do not survive. If they do not reproduce before they die, then the species will no long exist.

There can be a number of reasons that conditions may change. For

example, there may be new predators in the area, other animals may take the food the species require, the climate can make it too hot or too cold or new diseases may spread.

On a few occasions during the history of the earth, there may be a 'mass extinction event'. This is when a dramatic event such as a huge volcano exploding or a large asteroid hitting the earth can cause the extinction of most of life on the earth. It is believed that this is what caused the extinction of dinosaurs.

Answer the questions below using the text above:

1) What is extinction?

   Extinction is when there is _____

   _____

2) Give three reason why extinction may take place:

   a. _____

   b. _____

   c. _____

3) What are mass extinction events?

   _____

   _____

4) Which group of reptiles do we think may have been made extinction by a mass extinction event?

   _____

Watch the video and add the names of each era of life to the timeline below

When was this period of time?	Name of the era	What could we find there?
Oldest and longest period of time		
2nd oldest and longest period of time		
3rd oldest and longest period of time		
Most recent period of time (that we are still in		

Read the comprehension below about geological eras.

Geologists are scientists that study rocks to understand things about the world. Geologists have found out from their studies of rocks from different periods in time there have been a number of mass extinction events over time and have given names to each stretch of time between these extinction events. Each of these periods of time are called 'geological eras'.

If we study the fossils that existed during each geological time, we can find out which types of living things may have lived during each period of time. This helps us see how life has changed across each era and how life has changed over the history of the earth.

1) **What does Geologist do?**

   A geologist is a scientist that studies _____

   _____ .

2) **What are geological eras?**

   Geological eras are periods of time b_____.

3) **What can we find out about fossils from each geological era?**

   We can find out which _____.

   This helps us understand how life _____

   _____ .

Write the following out fully as numbers

In words	As a number
3600 million	
2100 million	
530 million	
420 million	
370 million	
340 million	
230 million	
195 million	
141 million	
66.4 million	
2.5 million	
0.2 million	

Read the comprehension below about each of the geological eras and answer the questions about each one.

It is believed that the earth is about 4.5 billion years old (4,500,000,000 years!) and that life first began to form 3,600 million years ago. From what we can see in the fossil records, life has changed a lot since it first began millions of years ago. With each mass extinction event, new types of life and groups of living organisms have come into existence.

How old do we think the earth is?

_____

The first era is known as the Proterozoic (or Pre-Cambrian) era. This era began 3,600 million years ago when very tiny organisms (like bacteria) first appeared. For a long time, this is the only type of life that existed until 2100 years ago when the first very simple, very small plants (algae), fungi and animals evolved. All life that existed at this point was in the earth's oceans. Algae (which were the first very tiny, simple plants) started turning carbon dioxide into oxygen.

1) Add the events from the Proterozoic era into the table below

2) Where did all life live at this point?

_____

This second era (known as the Paleozoic era) began 530 million years ago. At this point many kingdoms and types of animals began to appear. This point is known as the 'Cambrian explosion' as a large amount of fossils start to appear in rock of this age. The first fish appeared at this time, plants first appeared on land 420 million years ago, the amphibians evolved 370 millions years ago and the first reptiles 340 million years ago.

 **1) Add the events from the Paleozoic era into the table below**

2) What do we call the time when a large amount of animals and plants first appeared?

_____

The third era is called the Mesozoic era and this began 230 million years ago. This is when first mammals evolved and is also the period that dinosaurs existed on earth. The first birds appeared 195 million years ago, followed by the first plants to develop flowers from 141 million years ago.

 **1) Add the events from the Mesozoic era into the table below**

2) Which group of reptiles could be found during this era of time?

_____

66.2 million year ago, all dinosaurs seem to have died at one time – it is believed that a giant rock from space hit the earth and caused all dinosaurs to be killed. This began the fourth and final era that we are still in and is called the Cenozoic era. From this point onwards, all living created that are around today have evolved. The first human-like animals began 2.5 million years ago and the first fossils of modern day humans are found only 0.2 million years ago!

 **1) Add the events from the Cenozoic era into the table below**

2) What do we think happened that led to dinosaurs being wiped off the earth?

_____

_____

Life on Earth timeline	How many million years ago?	What happened?
Proterzoic Era	3600	
	2100	
Paleozoic Era	530	
	420	
	370	

	340	
Mesozioc Era	230	
	195	
	141	
Cenozoic Era	66.4	
	2.5	
	0.2	

 **Draw a circle to show whether you think each of the following is 'true' or 'false'**

1) The earth was formed 6.3 billion years ago. **TRUE/FALSE**

2) Only very small, very simple living things existed in the Protezoic era. **TRUE/FALSE**

3) The first living things lived on land. **TRUE/FALSE**

4) The 'Cambrian explosion' was a time when a large amount of new living things first evoled. **TRUE/FALSE**

5) Dinosaurs first evolved in the Paleozoic era. **TRUE/FALSE**

6) The first mammals first evovled during the Mesozoic era. **TRUE/FALSE**

7) It is believed the dinosaurs and many other living things were wiped out by an asteroid from space hitting the earth 66.2 million years ago. **TRUE/FALSE**

8) Modern humans first appeared 2.5 million years ago. **TRUE/FALSE**

 **Return to page 4 to complete the learning review**

5. Lesson five: What impact have humans had on plants and animals?

Do now

Complete the multiple choice quiz below

1. Which one of the following is NOT the name of a geological era?
   i) Mesozoic
   ii) Paleozoic
   iii) Contanoic
   iv) Cenozoic

2. What do we think happened 66.2 million years ago?
   i) An asteroid from space wiped out a large amount of life
   ii) Algae started to turn carbon dioxide into oxygen
   iii) The first mammals began to evolve
   iv) The first human-like animals evolved

3. What does the fossil record show us?
   i) How extinction happens
   ii) When volcanos have existed on the earth
   iii) How plants reproduce to create offspring
   iv) The types of living things that have existed over time

4. What did Darwin notice about finches on islands close to each other?
   i) The finches would fly between islands to get food
   ii) Each group had characteristics that would help them survive on their island
   iii) The finches were being turned into fossils over time
   iv) If he brought food to them, the strongest finches would get the most food

Discuss what you think the picture tells us about where humans may have come from.

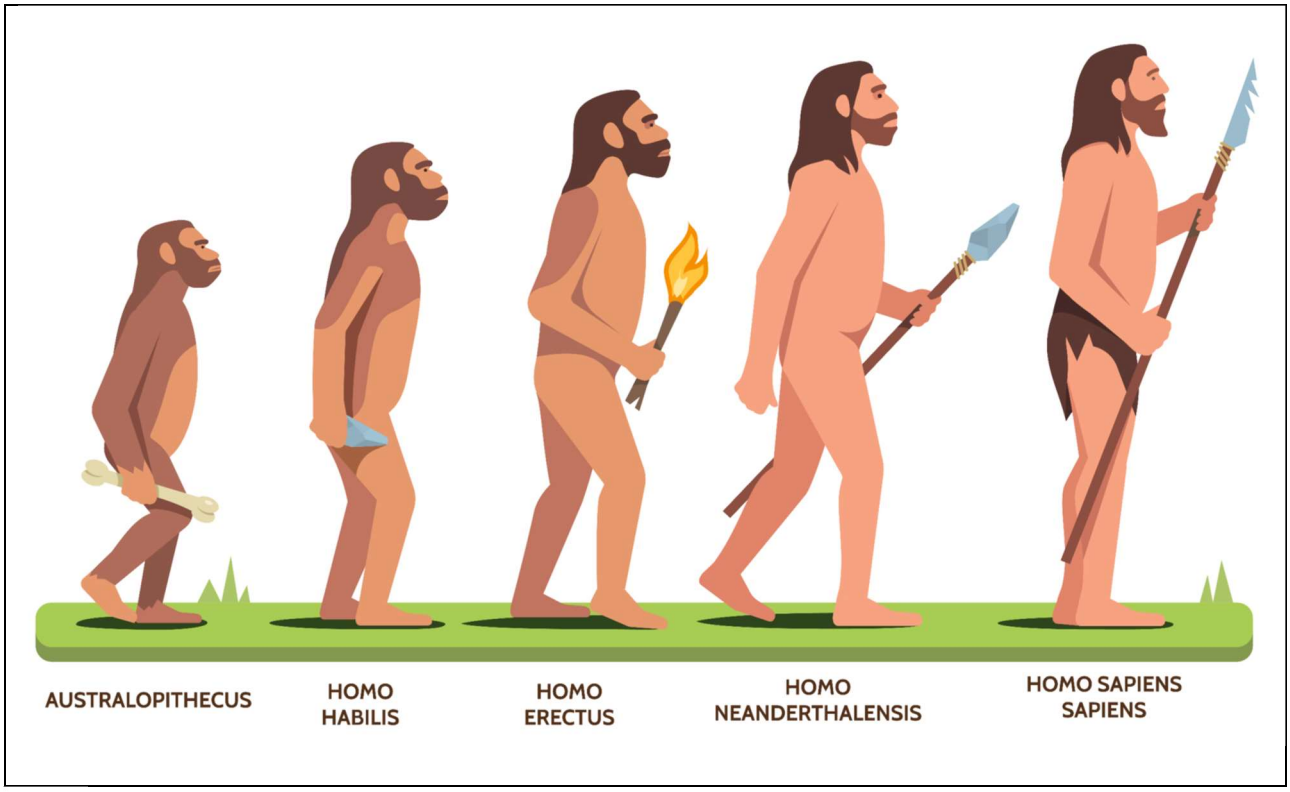
Write down two similarities between the different species of human and two things that change over time

Similarities: 1) _____

2) _____

Differences: 1) _____

2) _____



Read the comprehension below about the evolution of human beings

Fossil records show that there were a number of living creatures that are very similar to human beings in the past (these are shown in the picture above – they have been drawn to show how scientists think they may have looked).

From the evidence scientists have from the fossil record, it is believed that humans evolved from the same ancestor as chimpanzees, gorillas and orang-utans. Our ancestors were became different when they began to walk upright on two feet only and were very good at learning. Over time, humans learned to do a number of very helpful things:

1) Use tools to open and gather food and to hunt - this meant humans could get more food and be more likely to survive
2) Make and use fire – humans could scare away bigger animals and cook food to get more nutrition out of it so they would be more likely to survive
3) Make clothing and shelters – humans could protect themselves from weather
4) They could use sounds to make a language and pass on what they had learned so that their children could also survive

Having knowledge of each of the things above helped humans become able to survive and grow in numbers before spreading out of east Africa and move across the globe.

Find answers to the questions below in the text above.

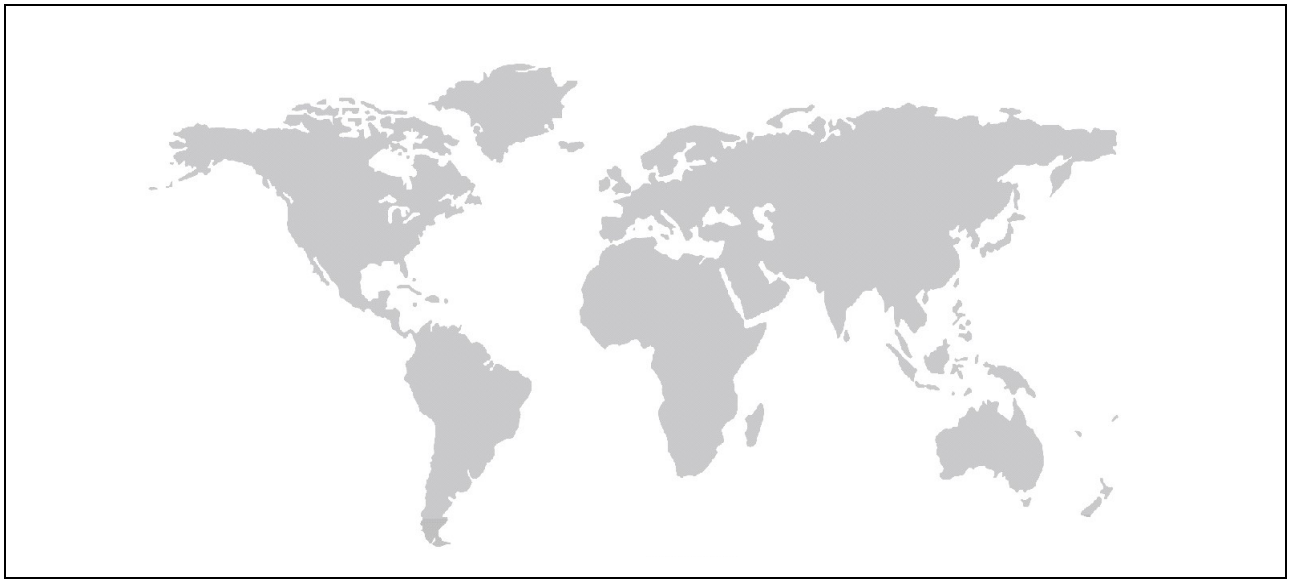
1) **Which creatures evolved from the same ancestors as humans?**
   a) _____
   b) _____
   c) _____

2) **What two things did our ancestors do differently that lead to modern humans evolving?**

   They would walk _____ and were very good at _____ .

3) **What four things did our ancestors learn that helped them to be more likely to survive?**
   a. Use _____ to open and gather _____ and to _____ .
   b. Make and use _____ .
   c. Make _____ to help them survive different kinds of weather.
   d. They could use sounds to make a _____ to pass on the things they had _____ to their children.

Watch the video to see how early humans moved out of Africa and spread across the world. Add arrows to your map to show where they moved over time.



Read the comprehension below about the impacts humans had on other plants and animals

About 10,000 years ago, humans began to affect the plants and animals around them and take a number of actions to make them help humans to survive. For the first time, one living creature started to change the world around them to help it survive.

Humans took the seeds of plants that they liked to eat and began to plant them where they would get enough sunlight and give them water to grow. Later they could gather them up and store them so that they had food such as wheat, barley and lentils. This meant that there were a lot more of these plants because humans helped them to survive, grow and reproduce.

Humans also began to look after certain animals that they found useful so that they could eat them as meat, drink their milk and use their skins for clothing and other uses. It is believed that the first animals to be looked after by humans are goats and sheep and later chickens. As a result, there are much, much more of these animals and animals such cows and horses because humans find them useful.

Find answers to the questions below in the text above

1) **What happened for the first time 10,000 years ago?**
   One living creature started to _____
   _____
2) **What did humans do with the seeds of plants that they liked to eat?**
   They began to _____ and give them _____.
3) **Why did humans look after certain animals and help them to survive?**
   Humans found animals like sheep and goats useful as they could _____ _____, drink _____ and use their skins for _____.
4) **What did these actions from humans do to the number of the plants and animals that they found useful?**
   This meant the number of these plants and animals _____.

Discuss with a partner why humans found each of the living things on the board helpful for survival

Return to page 4 to complete the learning review

6. What impact are humans likely to have on life in the future?

Do now

Complete the multiple choice quiz below

1. Which one of the following is a reason why the numbers of humans increased a lot:
    i) They became the strongest predators
    ii) They were good at swimming
    iii) They could use fire to get more nutrients from food
    iv) Other animals became extinct so they left lots of room

2. Which of the following is NOT a reason humans kept animals
    i) To eat as meat
    ii) To produce milk
    iii) To use skins to make clothing
    iv) Because they were scared of them

3. In which era did the first birds evolve?
    i) Pre-cambrian
    ii) Cenozoic
    iii) Paleozoic
    iv) Mesozoic

4. Is the following sentence true or false? Why?

Humans evolved from chimpanzees – true/false because _____
_____

Read the passage below about the impact of humans on other living things

Humans have changed many things about the world around them. They have hunted a number of animals for food or for sport. They have cut down forests to burn the wood, make building materials and make way for places to live (this is called deforestation).

Some scientists believe species around the work are becoming extinct 1,000 times faster than before humans were around on the earth. A lot of the time, this is because humans have destroyed the place where the animal or plants have existed (which is called their 'habitat'). Sometimes it is because humans have spread new animals or new diseases in places that which leads the species in that area to die out.

The biggest impact that humans have begun to have on the planet is to increase the temperature of the world through global warming. This is where the where the earth is getting hotter because of the gases released when burning fuels. This is changing the overall temperature and weather of locations across the world over a long period of time which is making it harder for many living creature to survive.

Finally, human waste is spreading across the planet and affecting the lives of other creatures. Humans have created plastics which do not break down easily so plastics pollute many places across the earth and can damage sea creatures who get caught in it or may get sick from accidentally eating it.

Find the answer to the questions below in the passage above

1) **What are two reasons why humans have hunted animals?** Humans have hunted animals for _____ .

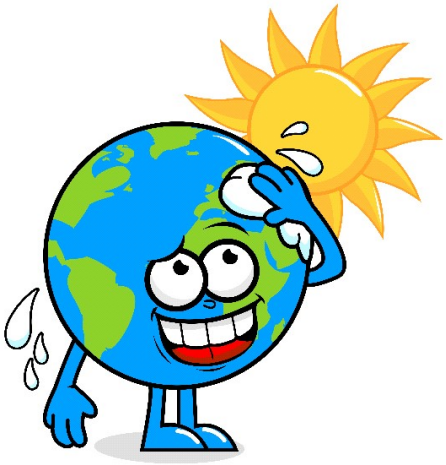
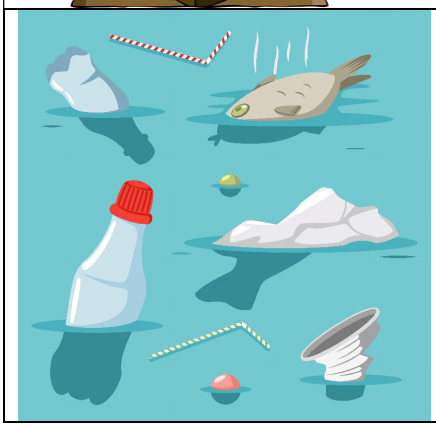
2) **What are the three reasons why humans have cut down forests?**
   a. _____
   b. _____
   c. _____

3) **How much faster do some scientists think species are going extinct due to the impact of humans?** _____

4) **A lot of the time, this is because humans are destroying the 'habitat' of a living thing. What is a habitat?** A habitat is a place that _____ _____ .

5) **What impact is plastic having on sea creatures?** Sea creatures are getting _____ .

Describe what each of the diagrams below represent in terms of the impact that humans have had on the earth.

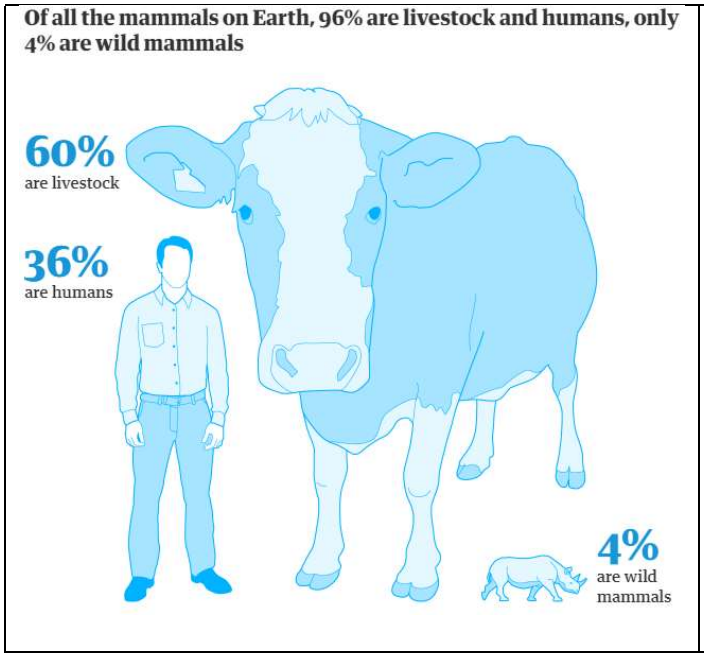
Watch the story of the Dodo and how it became extinct. Fill in the storyboard below to describe what happened.

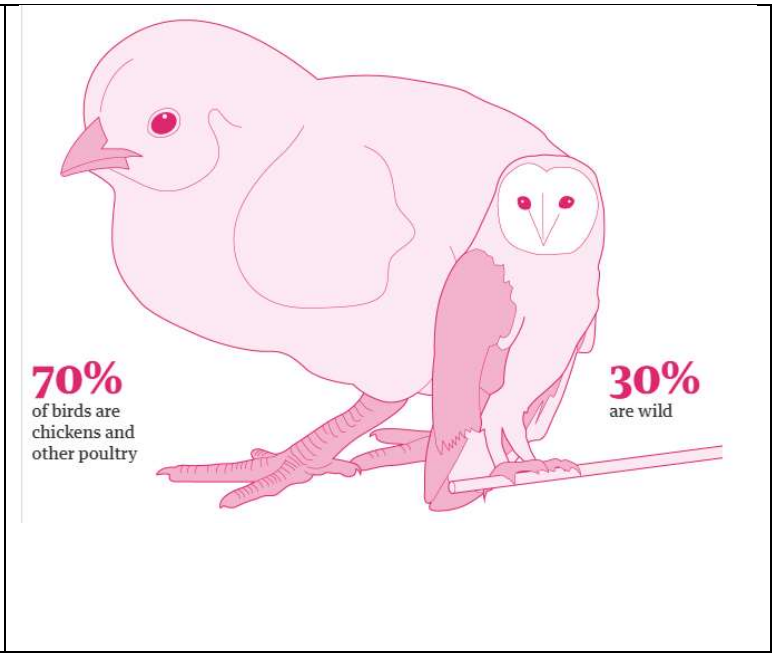
1. _____ _____	**2.** _____ _____	**3.** _____ _____
4. _____ _____	**5.** _____ _____	**6.** _____ _____

Read the passage below about domesticated animals.

If a plant or animal mainly exists because it is looked after by humans, we say that the living thing has been 'domesticated'. The amount of domesticated animals (such as cows, chickens and sheep) has grown as the number of humans on the planet has grown.

In fact this number has grown so much that there are more domesticated versions of animals from some animal kingdoms then there are wild animals. The amount of each animal kingdom that is domesticated, we will think about how many are domesticated out of every 100 of each type of animal.





Use the information above to answer the questions below

1) What does it mean if an animal or plant is 'domesticated'?

_____

2) Out of every 100 mammals, how many are wild?

_____

3) Out of every 100 birds, how many are wild?

_____

Watch this video that shows what a conservationist might do.

Use the internet to find out about what each of the following organisations do to help the planet:

World wildlife foundation	
The Jane Goodhall Foundation	
The international Rhino Fund	
Defenders of Wildlife	

Return to page 4 to complete the learning review