Steps to Success

Date	Tuesday 12th January 2021
Subject/s	***Science***
Learning Objective	To classify animals

		SA	TA
Success Criteria	I know animals can be sorted into vertebrates and invertebrates		
	I can sort animals into: mammals, reptiles, fish, birds, amphibians		
	I can use key questions to be able to sort the animals e.g. "Does it give birth to it's young?"		
Support	Independent Adult Support ( ) Group Work		

Lockdown learning

Key vocabulary for the lesson:

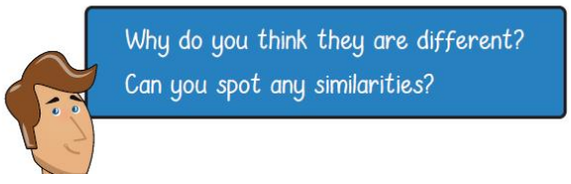
Classifying grouping characteristic species similarities differences taxonomists Carl Linnaeus Linnaean System variation vertebrates invertebrates

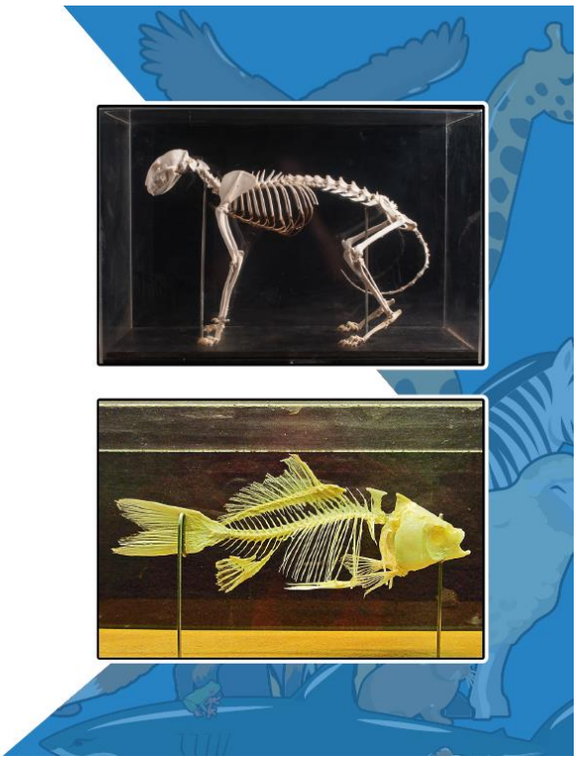
Write down 6 animals.
Now can you organise them into groups?

Today we are going to learn about Vertebrates and Invertebrates.

Thinking Time...

All animals, like humans, have a skeleton. However, they don't all look the same! **Mammals, fish, amphibians, birds and reptiles all have bony skeletons.** These skeletons come in all shapes and sizes. Look at these two skeletons and notice how they are different from each other.





Vertebrates and Invertebrates

When we are **looking at skeletons** of animals, we can sort them into **two different groups. Vertebrates** are animals that **have a spine or backbone as part of their skeleton. Humans are vertebrates. Invertebrates** are animal that **do not have a backbone. A butterfly is an invertebrate.**

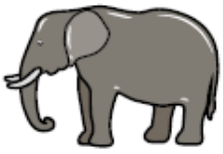
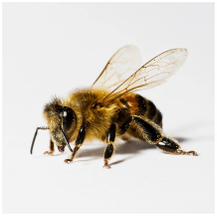
Exoskeleton

Some animals don't have a skeleton inside their body, they have a hard outer casing on the outside of their body which acts like a skeleton! This is called an **exoskeleton.** Their skeleton doesn't look like ours but it still does the same job of **supporting and protecting** their body. **Cockroaches and some spiders have an exoskeleton. Animals with an exoskeleton are invertebrates.**

Some animals can shed or moult their exoskeleton when they grow too big for it. They climb out of their old exoskeleton and a new one forms!

No skeleton!

Some animals have **no skeleton** at all! They have **no bones or hard outer casing** which means they have **no protection. Slugs and worms have no skeleton.**

	 seagull
 elephant	
 lizard	
	 shark
 frog	 snake

jellyfish
butterfly
slug
bee

Vertebrates	Invertebrates
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Classifying Animals

We can classify animals in 5 different broad groups.

fish | reptiles | amphibians | mammals | birds

Can you name any animals that would be part of one of these groups?

Fish

Fish **live in water** and **have gills, scales and fins on their body.**
There are many **different types of fish**, large and small.

clownfish

shark

salmon

Can you name any other animals in this group?

Birds

Birds are animals that have **feathers** and hatch from **hard-shelled eggs.** Some people think that if an animal has wings then it must be a bird. Bats and flies have wings but they are not birds. So what makes an animal a bird? **Feathers! All birds have feathers** and birds are **the only animals that do.**

pigeon

eagle

seagull

Can you name any other animals in this group?

Amphibians

Amphibians are **born in the water.** When they are born, **they breathe with gills like a fish.** When they grow up, **they develop lungs** and can live on land.

frog

newt

toad

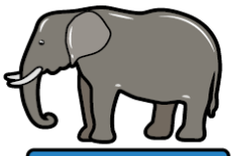
Can you name any other animals in this group?

Mammals

People are mammals. So are **dogs, cats, horses, elephants and kangaroos.** What makes all these animals mammals? **Milk! If an animal drinks milk when it is a baby and has hair on its body, it is a mammal.**

human

dog



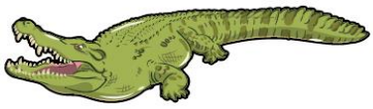
elephant

Can you name any other animals in this group?

Reptiles

Reptiles have **scaly skin**. They are **cold blooded** and are **born on land**. **Snakes, lizards, crocodiles, alligators and turtles** all belong to the reptile class.

lizard



crocodile

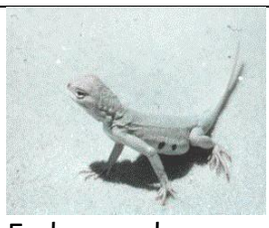
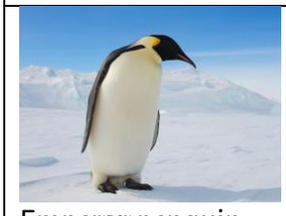
snake

Can you name any other animals in this group?

Bird	Amphibian	Mammal	Reptile	Fish

Now you are going to classify these animals independently:

Animals from the Arctic and Antarctic:

 Wood Frog	 Rockhopper penguin	 Moose	 Endangered snow lizard
 Orca	 Polar bear	 Walrus	 Arctic tern
 Emperor penguin	 Arctic wolf	 Seal	 Arctic Greyling
 Albatross	 Arctic Wolf	 Reindeer	 Ice fish

Bird	Amphibian	Mammal	Reptile	Fish
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Can you write a list of all the vertebrates? What do you notice?

_____

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Challenge

David can see these living things in his garden.

thrush

sparrow

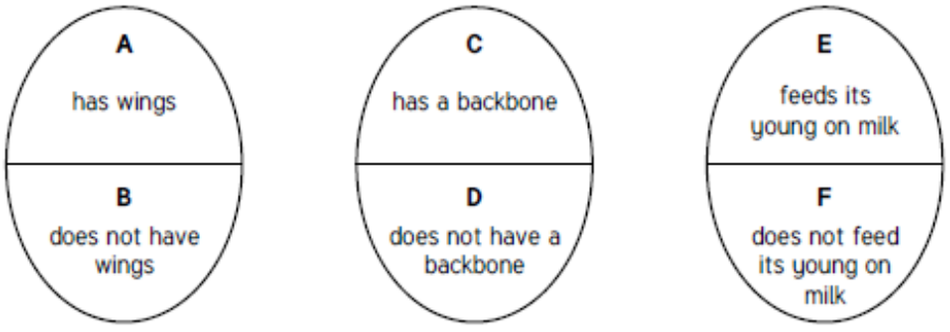
snail

cat

caterpillar

human

David sorts the animals in his garden into these groups.



Use only the living things in the pictures to answer these questions.

1. Name TWO animals in group A.

_____ and _____

2. Name TWO animals in group D.

_____ and _____

3. Circle THREE letters below to show which groups an adult human would be in.

A **B** **C** **D** **E** **F**

Next Step

Is this animal a vertebrate or an invertebrate? Explain your answer.

_____

_____

_____

Answers:

Bird	Amphibian	Mammal	Reptile	Fish
Arctic tern Rockhopper penguin Emperor penguins Albatross	Wood Frog Endangered Snow Lizard	Polar Bear Arctic wolf Arctic fox Reindeer Moose Walrus Seal		Arctic Greyling Orca Ice fish

200 species of birds in the Arctic because it is light in the summer months and there is lots of plants/zooplankton for them to eat.

In general, it is too cold for Amphibians and Reptiles to want to live in the Arctic. Amphibians and Reptiles are cold blooded which means they don't like to live in environments that are too hot or too cold.

However, birds, mammals and fish are warm blooded so can live in colder conditions.

All of the species that we have looked at are vertebrates!

Challenge

David can see these living things in his garden.

thrush = A C F

sparrow = A C F

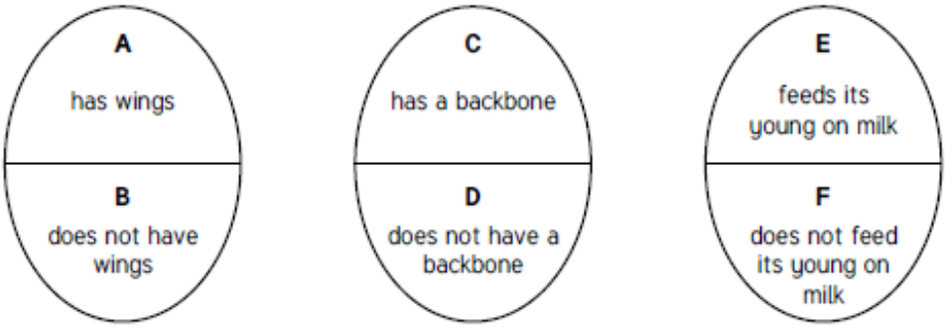
snail = B D F

cat = B C E

caterpillar = B D F

human = B C E

David sorts the animals in his garden into these groups.



Use only the living things in the pictures to answer these questions.

1. Name TWO animals in group A.

Thrush and Sparrow

2. Name TWO animals in group D.

Snail and Caterpillar

3. Circle THREE letters below to show which groups an adult human would be in.

A (B) (C) D (E) F

Next Step

Is this animal a vertebrate or an invertebrate? Explain your answer.

This animal is a vertebrate because it's backbone is part of it's skeleton.