Animal Skeletons

Do you think animals have skeletons like ours?

Are there any bones which might be similar?

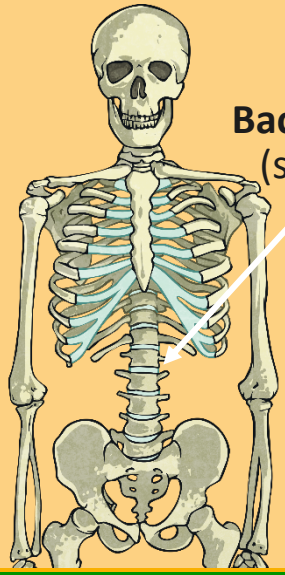
Vertebrate or Invertebrate

- Look at the words above…
- What do you think the difference is?
- Hint: Break the words up (Vertebrae)

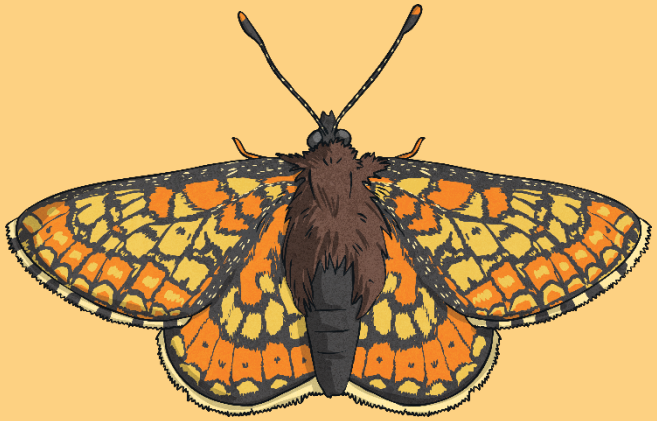
Vertebrates and Invertebrates

The difference between vertebrates and invertebrates is simple!

Vertebrates have a backbone (spine)…



…and invertebrates don't



vertebrate **invertebrate**

So, if the animal has a backbone or a 'vertebral column' it is a '**Vertebrate'** and if it doesn't, it is called an '**Invertebrate.'**

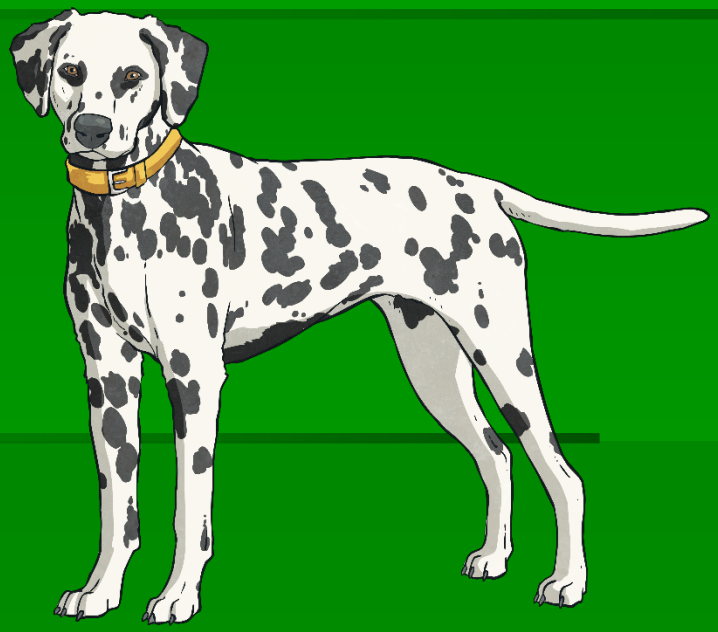
It's Quiz Time!!

Put this PowerPoint onto full slideshow before starting.

You will be shown a series of animals, click if you think it is a 'Vertebrate' or an 'Invertebrate.'

Dog

Whole Class

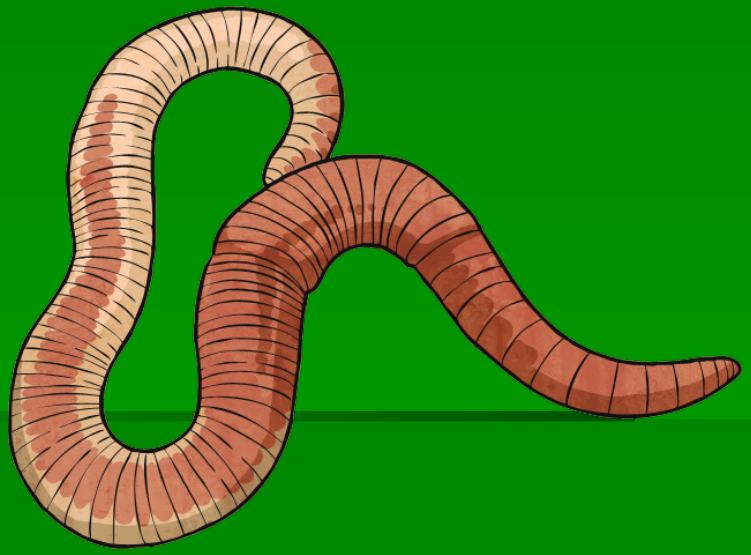


✓ Vertebrate

or

✗ Invertebrate

Worm



✗ Vertebrate

or

✓ Invertebrate

Dinosaur

✓ Vertebrate

or

✗ Invertebrate

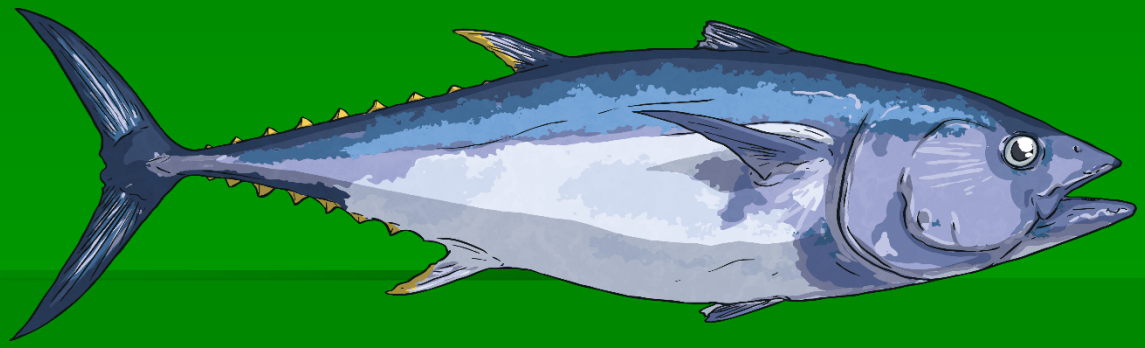
Human

Vertebrate

or

Invertebrate

Fish



✓ Vertebrate

or

✗ Invertebrate

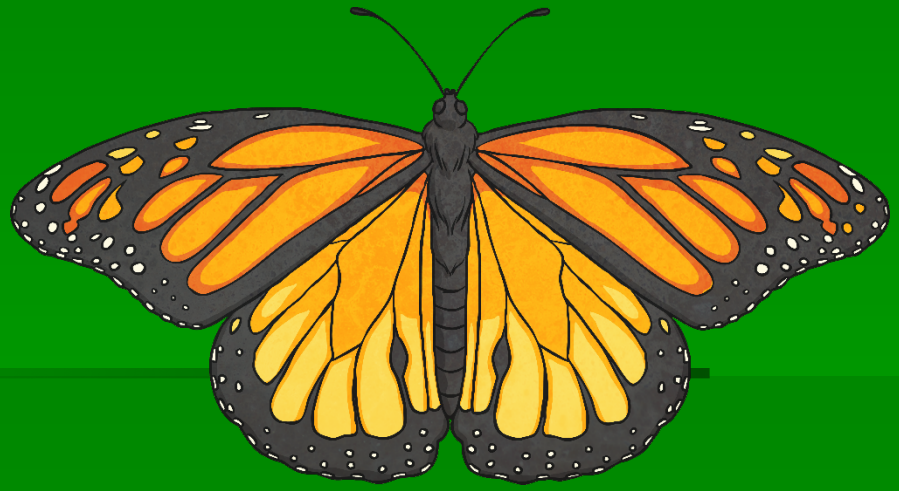
Jellyfish

✗ Vertebrate

or

✓ Invertebrate

Butterfly



✗ Vertebrate

or

✓ Invertebrate

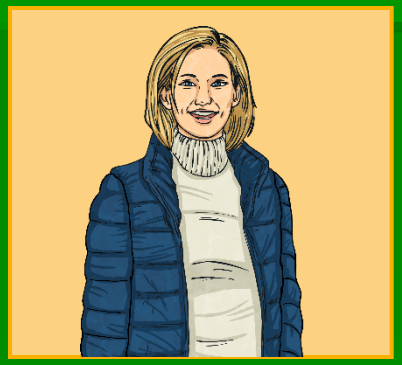
Types of Skeleton

- Now we know the difference between ‘Vertebrate’ and ‘Invertebrate.’
- Let’s dive a little deeper…

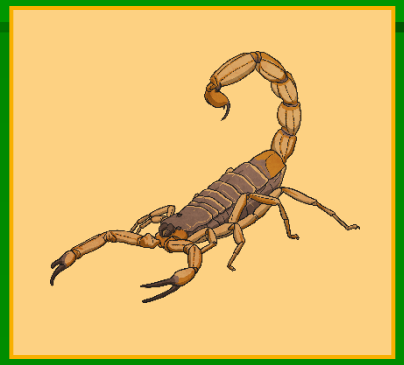
A further classification of skeletons comes from if an animal has a skeleton and where it is.

All vertebrates have an endoskeleton. However invertebrates can be divided again between those with an exoskeleton and those with a hydrostatic skeleton.

vertebrate → **endoskeleton**



invertebrate → **exoskeleton**

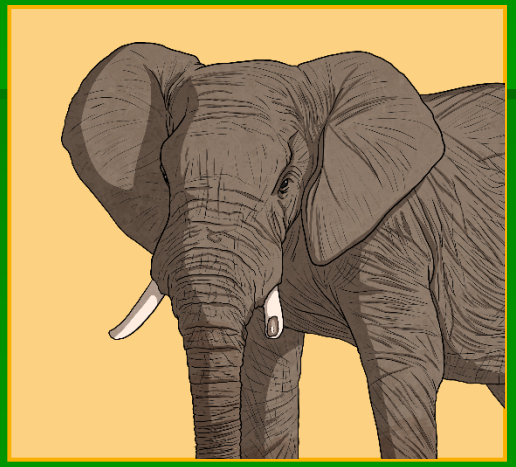


invertebrate → **hydrostatic skeleton**

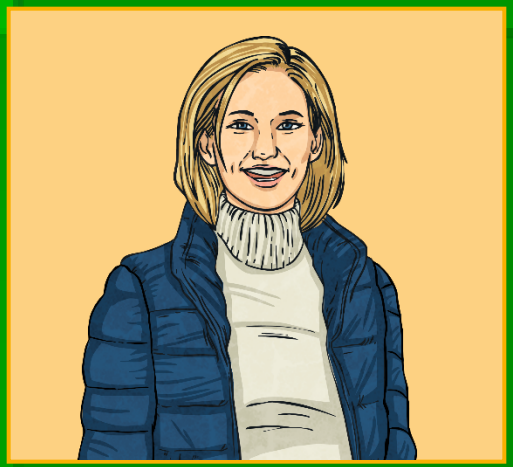
What do you think the words endoskeleton, exoskeleton and hydrostatic skeleton mean?

Endoskeletons

Animals with endoskeletons have skeletons on the **inside** of their bodies.



Endoskeletons are lighter than exoskeletons.

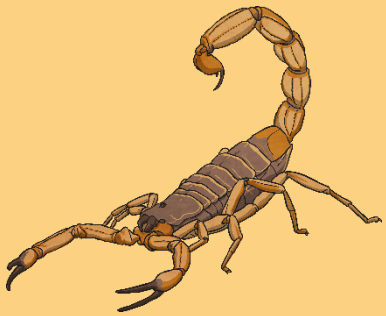


As the animal grows so does their skeleton.

Exoskeletons

Animals with exoskeletons have their skeletons on the outside!

Watch the following clip to see how they shed their skeletons (clip the crab below).

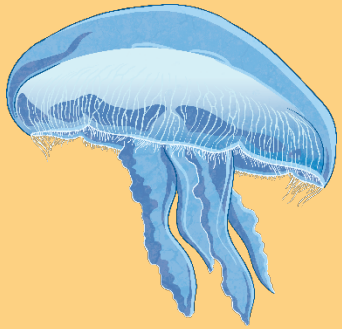


Exoskeletons do not grow with the animal. Therefore the animal has to shed its skeleton and produce a new one!

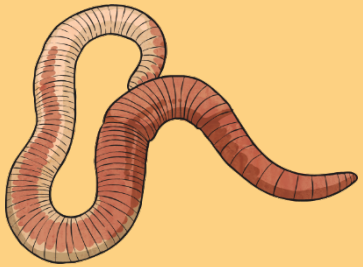
Hydrostatic Skeletons

Animals with hydrostatic skeletons don't actually have
any bones!

All animals with hydro-static skeletons are invertebrates.



Instead these animals have a fluid-filled compartment in their body called a coelom.

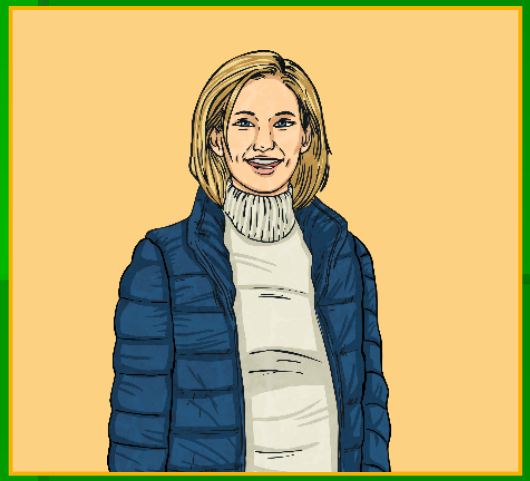


Some animals have an exoskeleton and an endoskeleton!

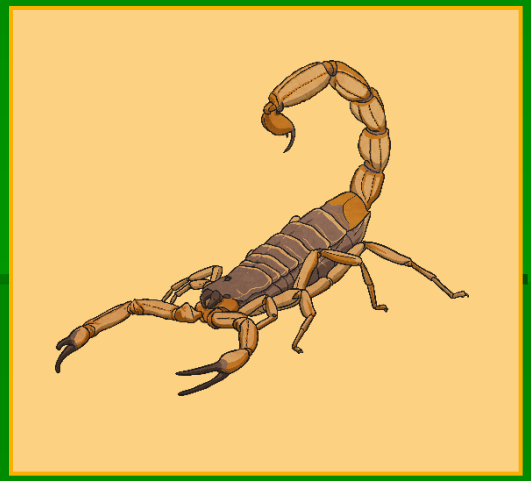
- This turtle has a hard outer shell for protection (exoskeleton).
- It also has an internal skeleton (endoskeleton).

Skeleton Types

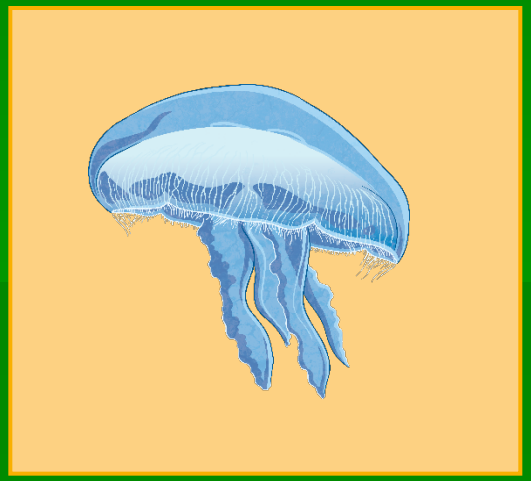
endoskeleton



exoskeleton



hydrostatic skeleton



Can you think of an example of an animal with an exoskeleton, endoskeleton or hydrostatic skeleton?

Have a go at the activity on the Worksheet:

Remember:

- Endoskeleton means the skele
- Exoskeleton means the skelet
- Hydrostatic skeleton means t

elephant

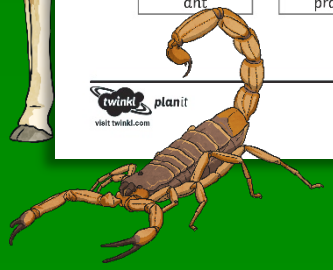
tortoise

jellyfish

mouse

ant

prawn

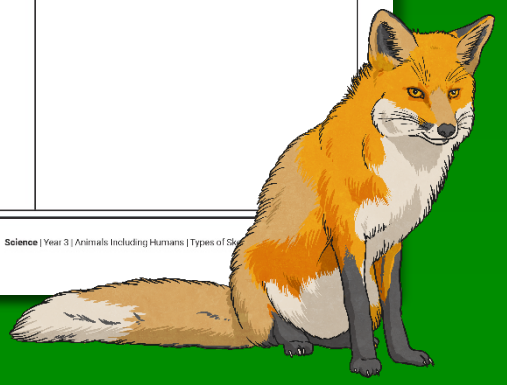


Sorting Skeleton Types

I can sort animals based on their skeletons.

Cut out and stick the animals based on the type of skeleton they have.

Endoskeleton	Exoskeleton	Hydrostatic Skeleton



Pros and Cons of Different Skeleton Types

Type of Skeleton	Pro	Con
Endoskeleton 		
Exoskeleton 		
Hydrostatic Skeleton 		

Grows with the body

More protection for the body

Does not grow with the body

Body is more flexible

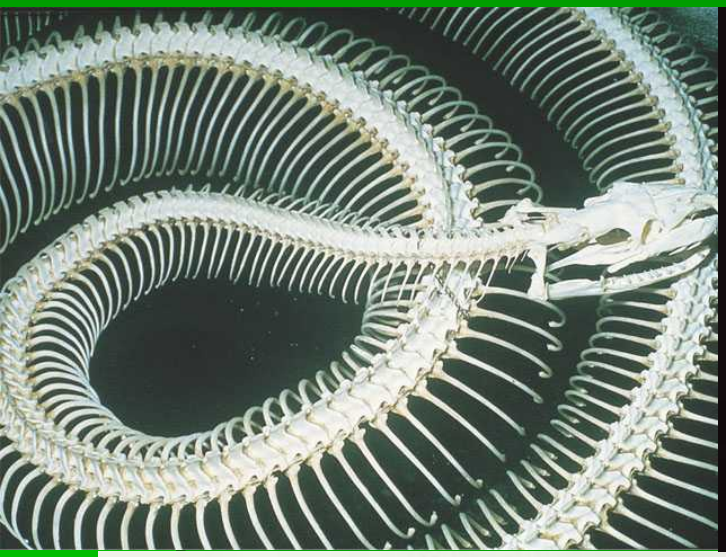
Cannot lift objects

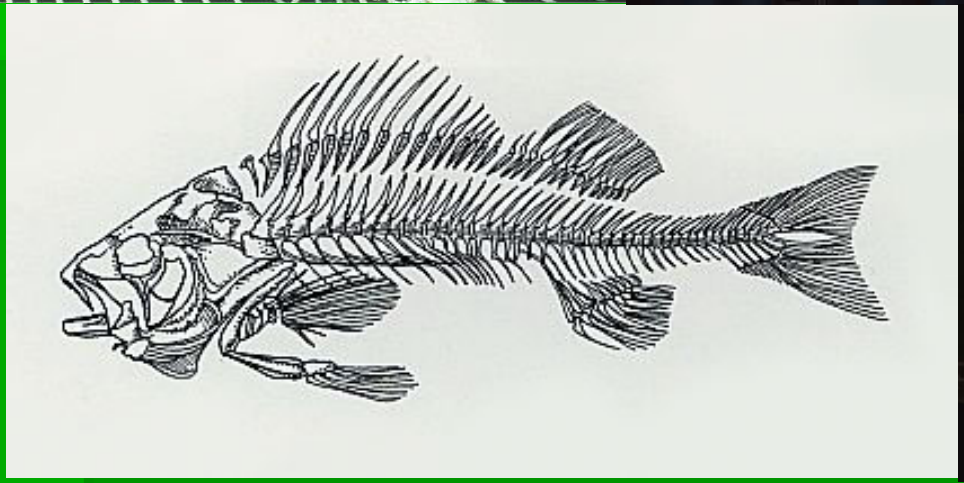
Muscles are less flexible

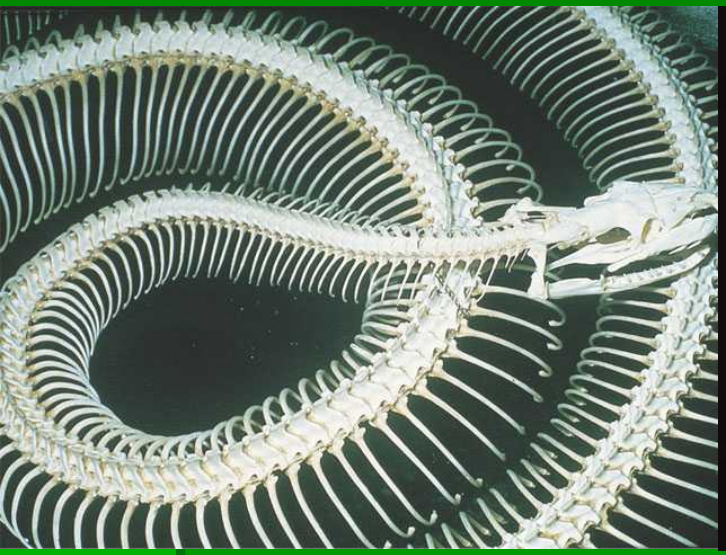
Have some fun:

- Then next few slides contain the skeletons of different animals.
- For a bit of fun, have a look through and see if you can guess what animal they are.

Do you know which animals these skeletons are from?



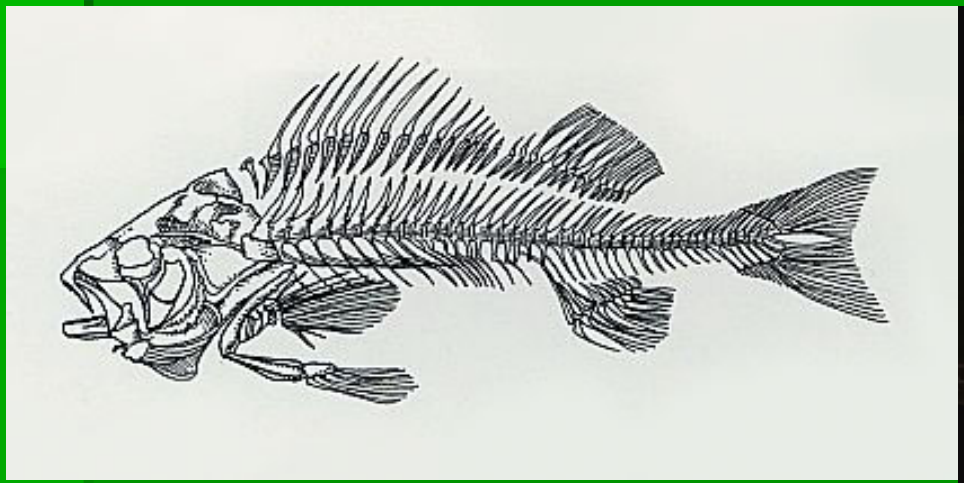




Snake

Chameleon

Chicken



Fish

Frog

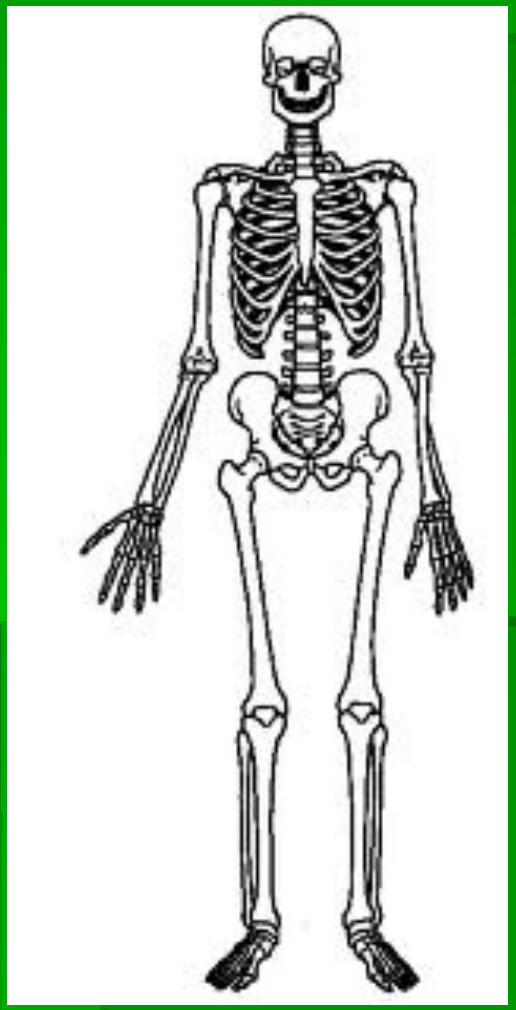
Do all animals need a skeleton?

There are more examples of animals without skeletons below.

What is the name of this skeleton?

Can you think of any animals which don't have a skeleton?

Where is your skeleton, inside or outside your body?



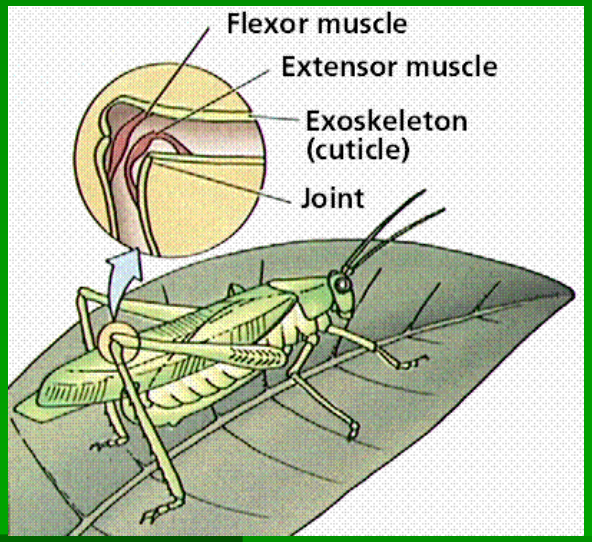
Do you think it is possible for an animal to have their skeleton on the outside of their Body?

You already know the answer to this!

Examples of Exoskeletons:

Why do you think nature gave some animals a skeleton on the outside of their body?

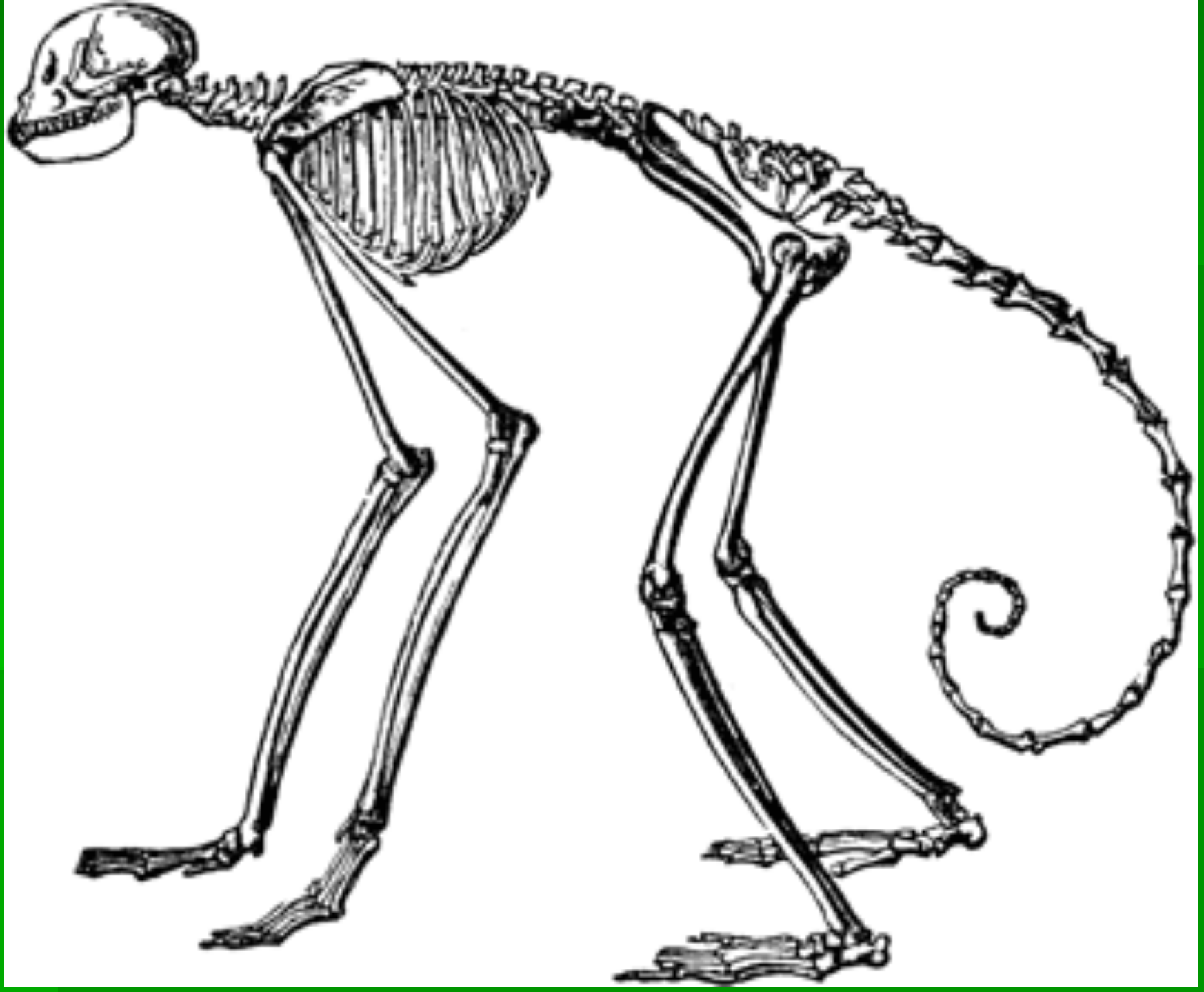
Having their skeleton on the outside of the body helps to protect the animals from predators.

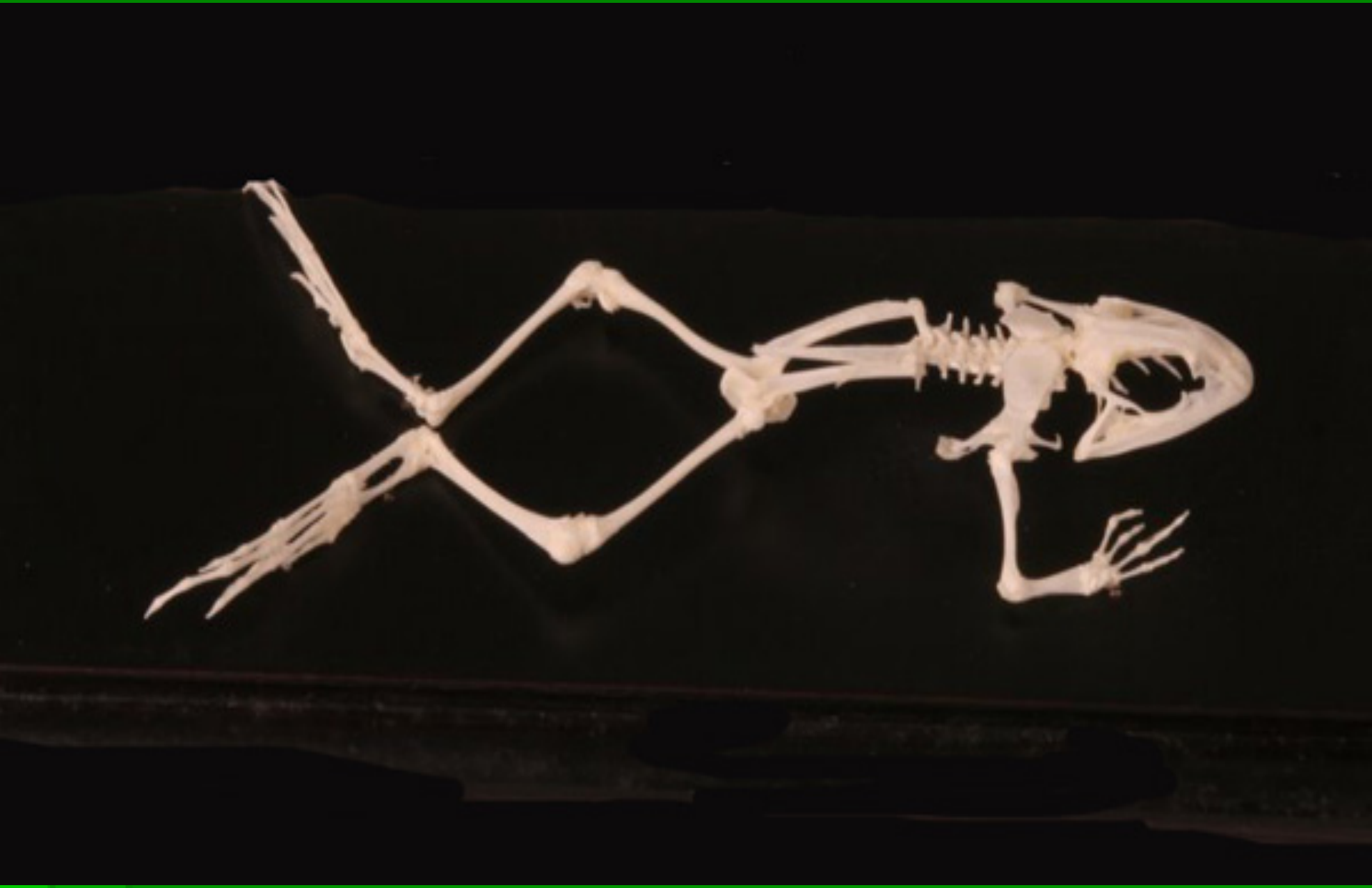


It also provides a frame for their muscles to stick to and hang from.

Animals with Endoskeletons

- Have a look at the pictures on the next few slides.
- Can you guess what animals they are?






Baby Giraffe