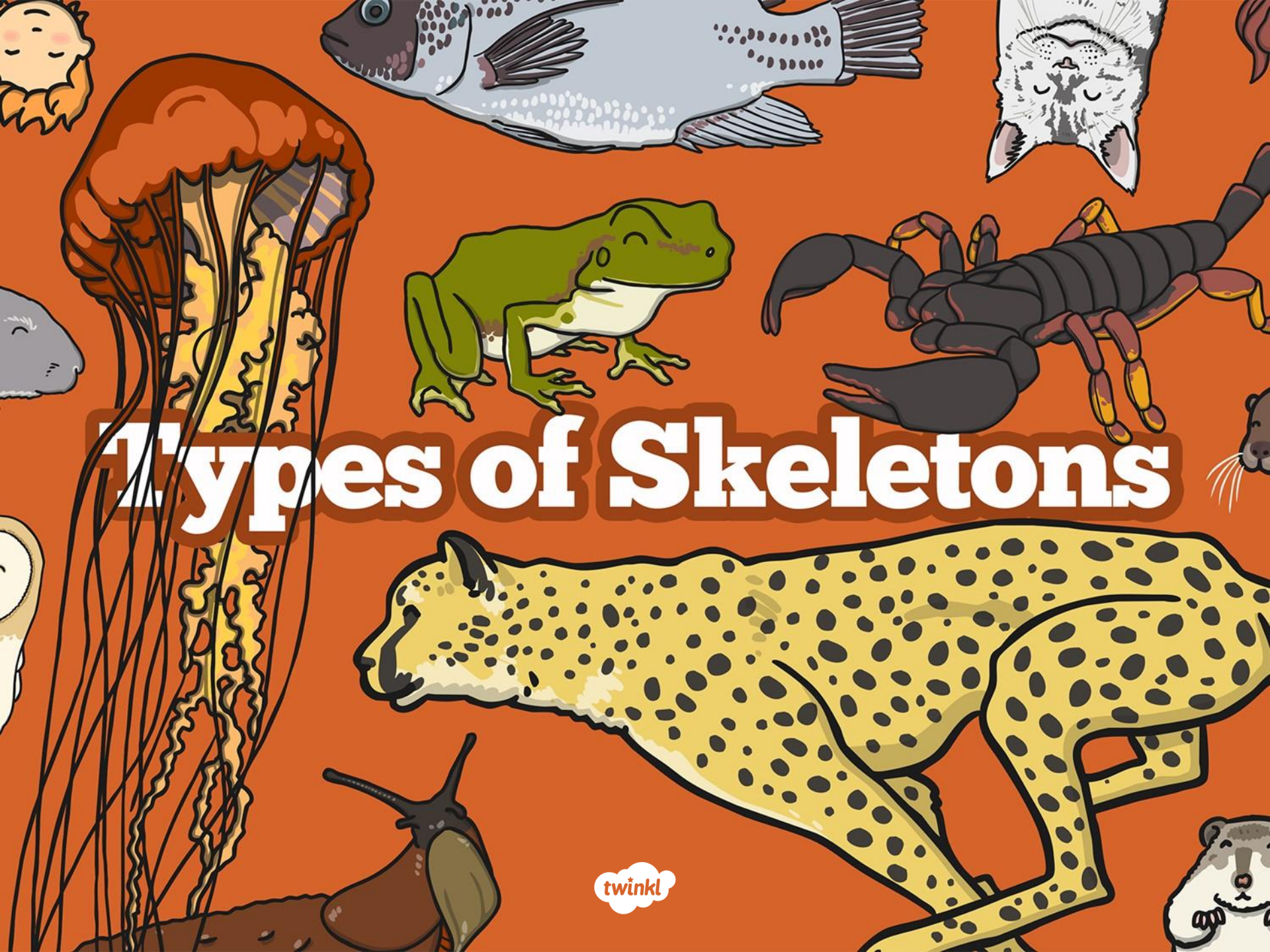




# Science

## Animals Including Humans



# Types of Skeletons

# Aim

- I can sort animals based on their skeletons.

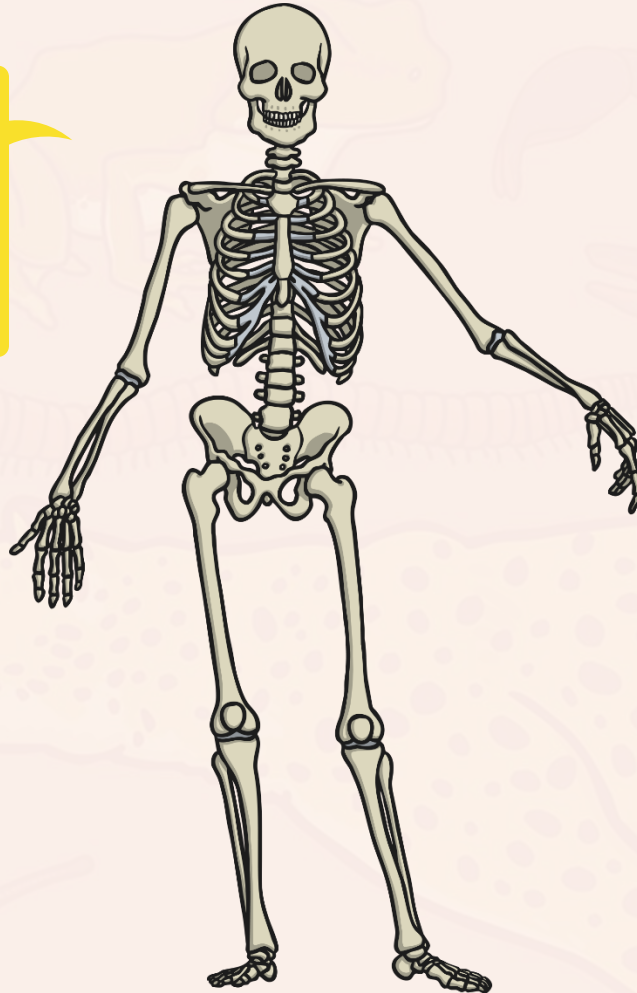
# Success Criteria

- I can name the three different types of skeletons.
- I can explain the pros and cons of different types of skeletons.

# Skeleton



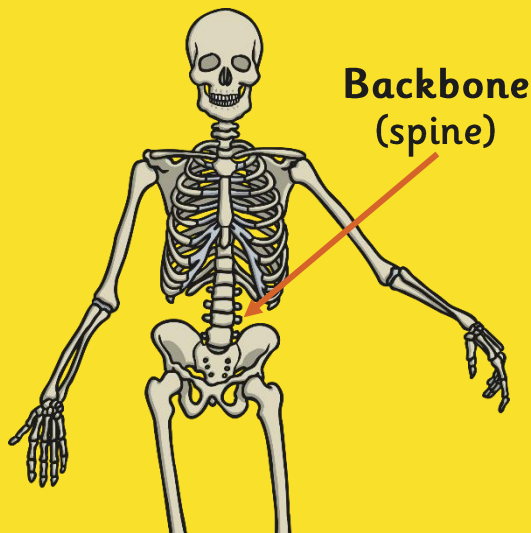
What do you  
associate with  
the word  
**skeleton**?



# Vertebrates and Invertebrates

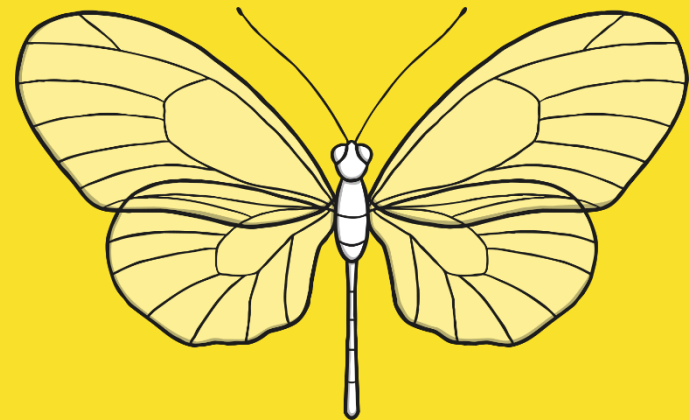
The difference between vertebrates and invertebrates is simple!

Vertebrates have a backbone (spine)...



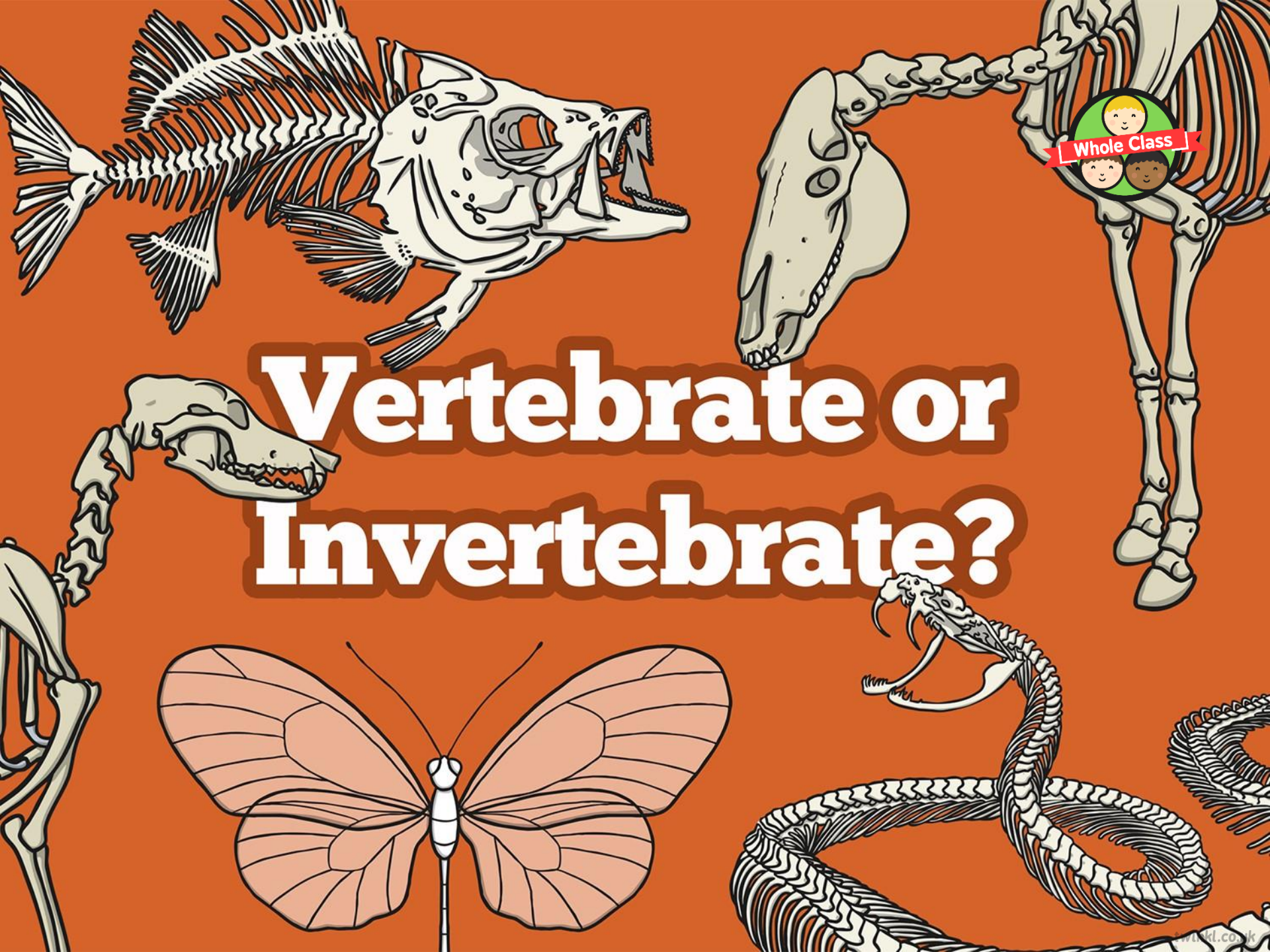
**vertebrate**

...and invertebrates don't



**invertebrate**

Now let's see if you can categorise animals as vertebrates or invertebrates.



# Vertebrate or Invertebrate?

Whole Class

# Dog

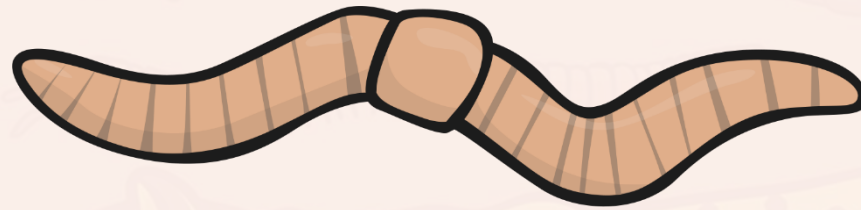


Vertebrate ✓

or

Invertebrate ✗

# Worm



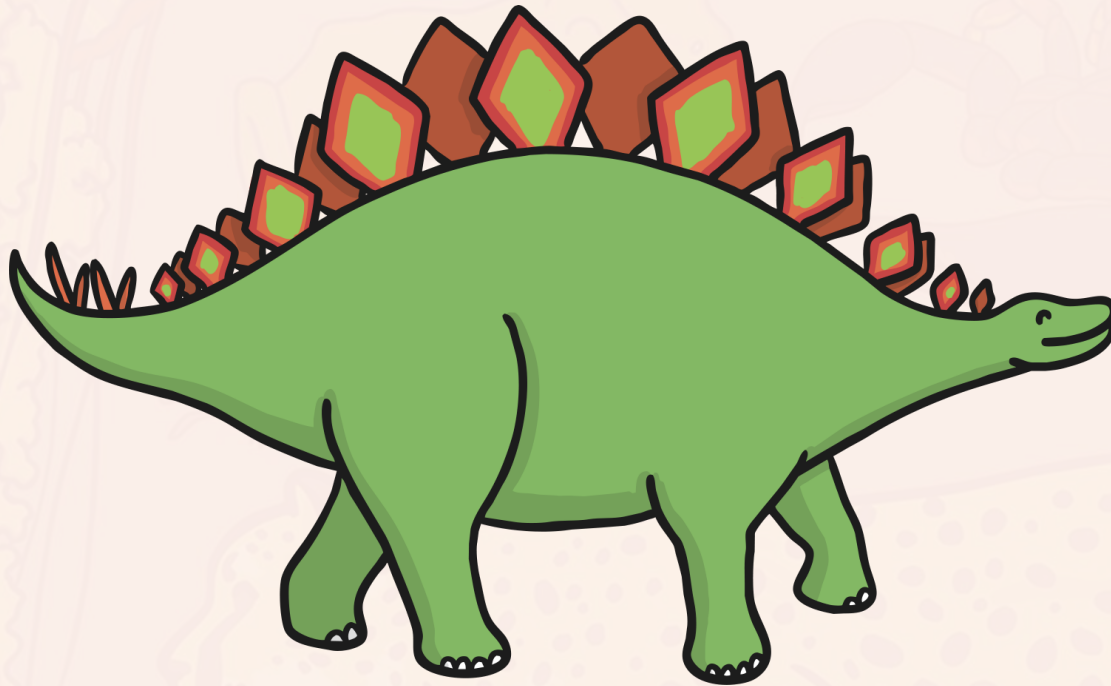
Vertebrate X

or

Invertebrate ✓



# Dinosaur



Vertebrate ✓

or

Invertebrate X

# Human

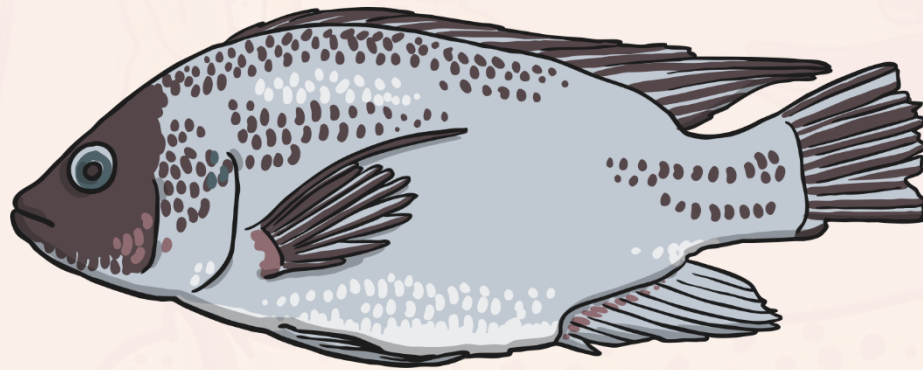


Vertebrate ✓

or

Invertebrate X

# Fish



**Vertebrate ✓**

**or**

**Invertebrate ✓**

# Jellyfish



Vertebrate X

or

Invertebrate ✓

# Butterfly



Vertebrate X

or

Invertebrate ✓

# Types of Skeletons



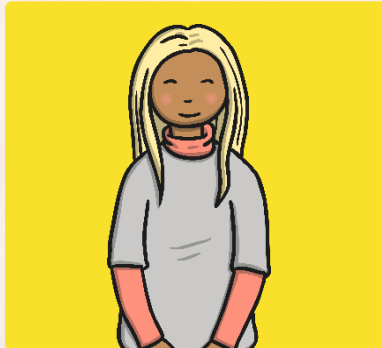
A further classification of skeletons comes from if an animal has a skeleton and where it is.

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



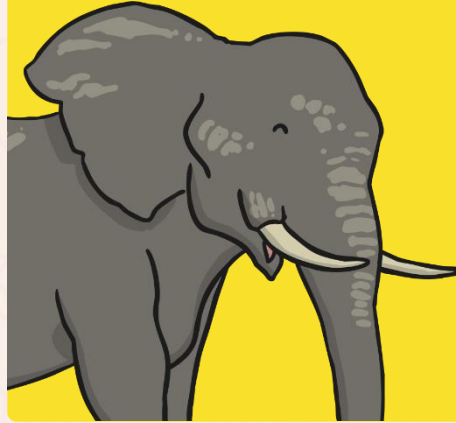
hydrostatic skeleton



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.



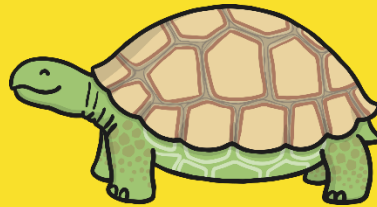
As the animal grows so does their skeleton.



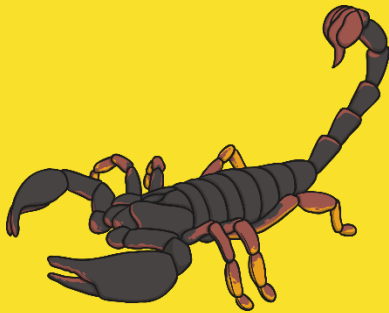
Watch the following [clip](#) to see the endoskeletons of different animals:

# Exoskeletons

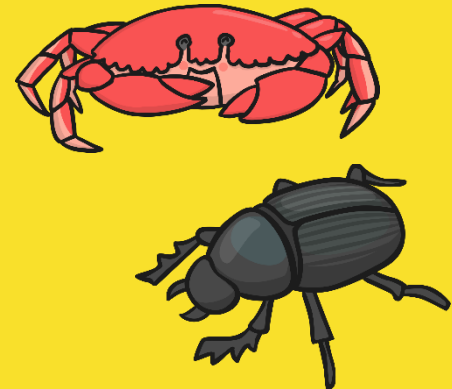
Animals with exoskeletons have their skeletons on the outside!



Watch the following video clips to see how they shed their skeletons (click the crab or the beetle below).



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





# Hydrostatic Skeletons

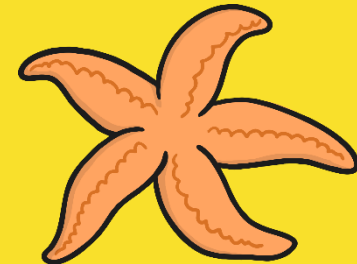
Animals with hydrostatic skeletons don't actually have any bones!



All animals with hydrostatic skeletons are invertebrates.

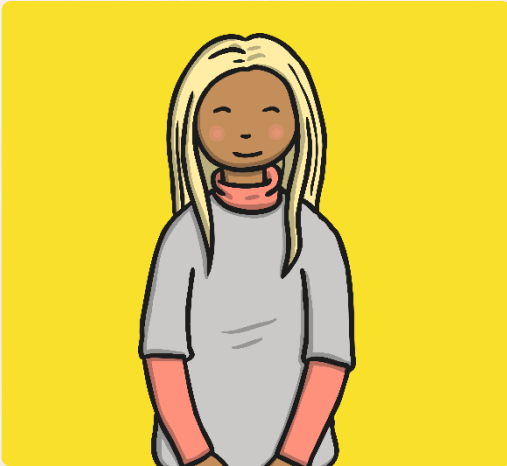


Instead these animals have fluid-filled compartment in their body called a coelom.



# Skeleton Types

**endoskeleton**



**exoskeleton**



**hydrostatic skeleton**



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

# Sorting Skeleton Types



**Sorting Skeleton Types**

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

Endoskeleton	Exoskeleton	Hydrostatic Skeleton

What other animals have endoskeletons? \_\_\_\_\_


What other animals have exoskeletons? \_\_\_\_\_

What other animals have hydrostatic skeletons? \_\_\_\_\_

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# 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**

# Aim



- I can sort animals based on their skeletons.

# Success Criteria

- I can name the three different types of skeletons.
- I can explain the pros and cons of different types of skeletons.

