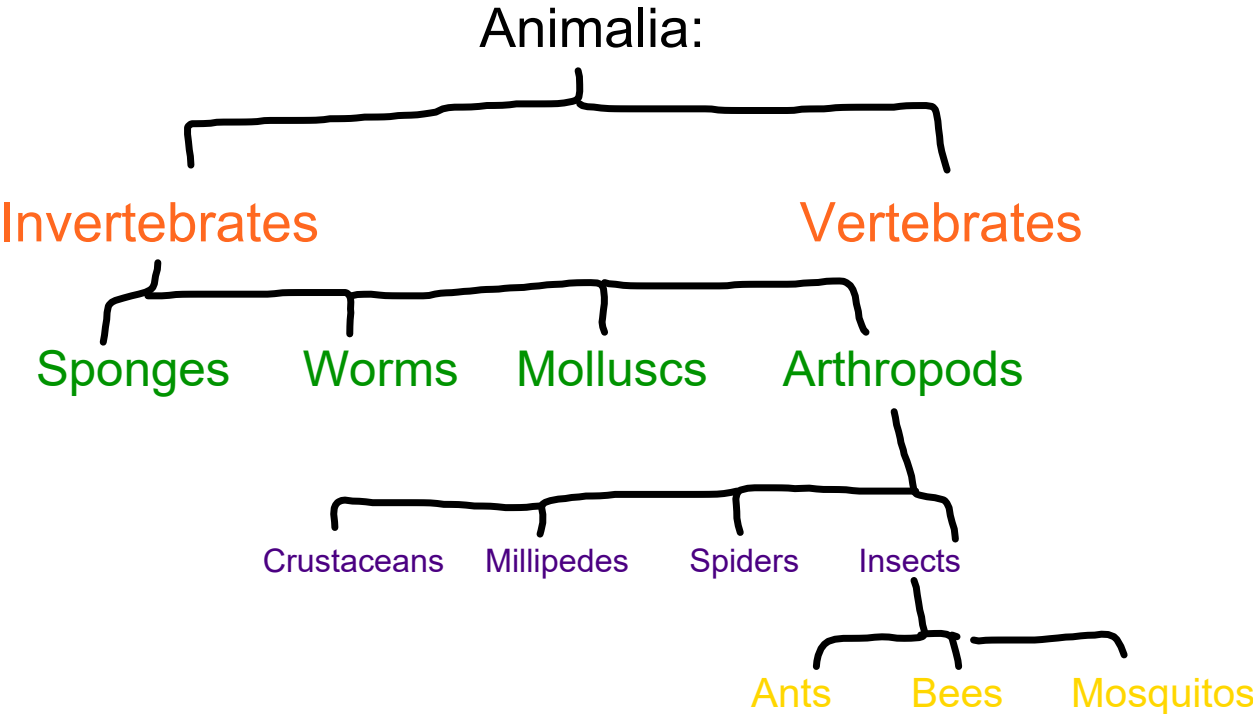


Lesson 4-Classifying Vertebrates



## Lesson 4-Classifying Vertebrates

What is the difference between an invertebrate and a vertebrate?

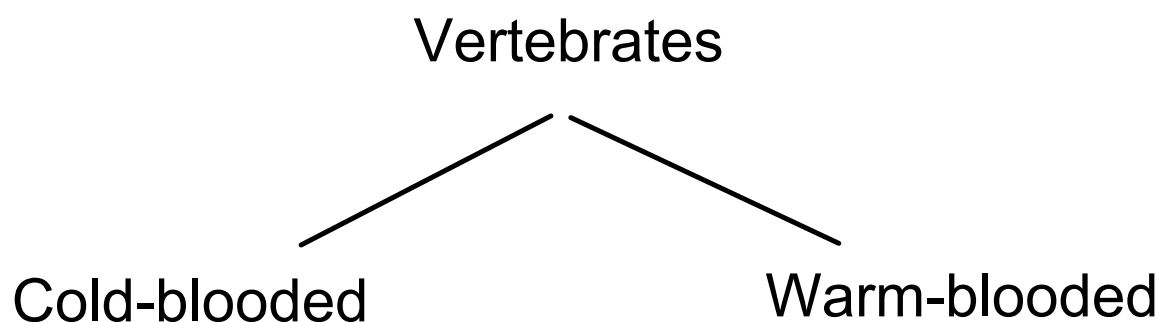
## Lesson 4-Classifying Vertebrates

What are some examples of vertebrates?

Each student must write 2 examples on the board! If another student writes the one you were thinking, you need to choose another.

## Lesson 4-Classifying Vertebrates

Vertebrates can be classified into two groups.



What do you think the difference between these groups is? Am I cold-blooded because I'm always cold?

Let's watch a Magic School Bus episode to learn more about the difference!

<https://www.dailymotion.com/video/x6vepdf>



Vertebrates can be classified into two groups.

## Vertebrates

```
graph TD; A[Vertebrates] --- B[Cold-blooded]; A --- C[Warm-blooded]
```

### Cold-blooded

Body temperature is the same as environment.

Examples: Fish, amphibians and reptiles.

### Warm-blooded

Body temperature stays the same in different environments.

Examples: Birds and mammals

## Lesson 4-Classifying Vertebrates

Let's read more about those examples and organize the information in a chart!

## Lesson 4-Classifying Vertebrates

In your chart, when you wrote down the characteristics of each group, some of those characteristics are adaptations.

What is an adaptation again?



## Lesson 4-Classifying Vertebrates

In your chart, when you wrote down the characteristics of each group, some of those characteristics are adaptations.

What is an adaptation again?

Adaptations are special features that help a living things survive in different habitats.

Fish need different adaptations than birds because fish live in the water.

What were some adaptations you read about that help a fish survive in it's habitat?

## Lesson 4-Classifying Vertebrates

What about birds? What adaptations do they have to help them?









Do you think different birds could have different adaptations depending on their habitat? Or should they all have the same adaptations because they are all birds?

## Lesson 4-Classifying Vertebrates

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### “Identifying Birds by Their Beaks”

SHAPE	TYPE	ADAPTATION
	Cracker	Seed eaters like sparrows and cardinals have short, thick conical bills for cracking seed.
	Shredder	Birds of prey like hawks and owls have sharp, curved bills for tearing meat.
	Chisel	Woodpeckers have bills that are long and chisel-like for boring into wood to eat insects.
	Probe	Hummingbird bills are long and slender for probing flowers for nectar.
	Strainer	Some ducks have long, flat bills that strain small plants and animals from the water.
	Spear	Birds like herons and kingfishers have spear-like bills adapted for fishing.
	Tweezer	Insect eaters like warblers have thin, pointed bills.
	Swiss Army Knife	Crows have a multi-purpose bill that allows them to eat fruit, seeds, insects, fish, and other animals.

[http://www.normanbirdsanctuary.org/beak\\_adaptations.shtml](http://www.normanbirdsanctuary.org/beak_adaptations.shtml)

## Lesson 4-Classifying Vertebrates

Let's explore how different beaks are better for certain foods!

On a piece of paper, please draw this chart:

	Marshmallows	Gummy Worms	Rice	Cereal
Fork				
Spoon				
Tweezers				

We are going to use our hand to hold our instrument (beak) instead of our mouths. However, your other hand cannot be used, birds can only use one beak, not two! So your other hand can touch one spot on the bowl to hold the bowl but that is it. The bowl cannot be lifted up off the desk or turned or moved in any way.

You will each be given all 3 beaks, and one type of food. I will tell you when to start and you will count how many of that food you can pick up (out of your bowl and on to your desk) in 30 seconds. At the end of 30 seconds, you will write that number in the appropriate spot on your chart. Once you are done all 3 beaks with that food, you will trade foods with someone else, to make sure everyone gets to try with all the foods.

## Lesson 4-Classifying Vertebrates

Which "beak" (fork, spoon or tweezers) worked best for the marshmallows? The gummy worms? The rice? The cereal?

How can we apply this knowledge to actual bird beak shapes?

## Lesson 4-Classifying Vertebrates

We've explored the general characteristics of fish, amphibians, reptiles, birds and mammals, and we looked specifically at different bird beaks.

### **Now it's your turn!**

You are going to choose an animal from one of the groups of vertebrates (must not be extinct) and research the answers to the following questions:

1. Describe the animal's appearance and body shape.
2. Is it warm-blooded or cold-blooded.
3. How does your animal breathe?
4. What adaptations does your animal have that help it survive in it's habitat?
5. How does your animal eat? What does it eat?

Once you have your answers, you are going to present your information on a poster, in full sentences! (This poster can be a regular sized paper or a larger one.)

Your poster must include one picture of your animal!

**\*Once you have chosen your animal, please write it on the board under Science 6 so nobody else chooses the same one!**