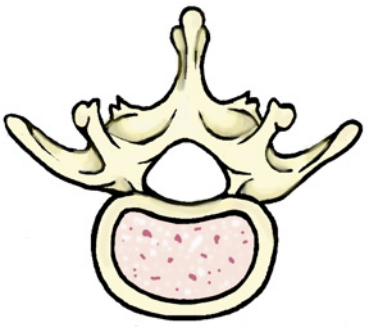
Vertebrates

In a modern system of classification, all animals can be divided into two groups – vertebrates and invertebrates. Vertebrates are animals that have a skeleton inside their bodies. Biologists call this an internal skeleton. In this lesson you will be using biological keys, to classify vertebrates.

What is a vertebrate?

An internal skeleton includes a backbone which is made up of bones called vertebrae.



A vertebra

Vertebra is one bone in a backbone; *vertebrae* is more than one bone from a backbone

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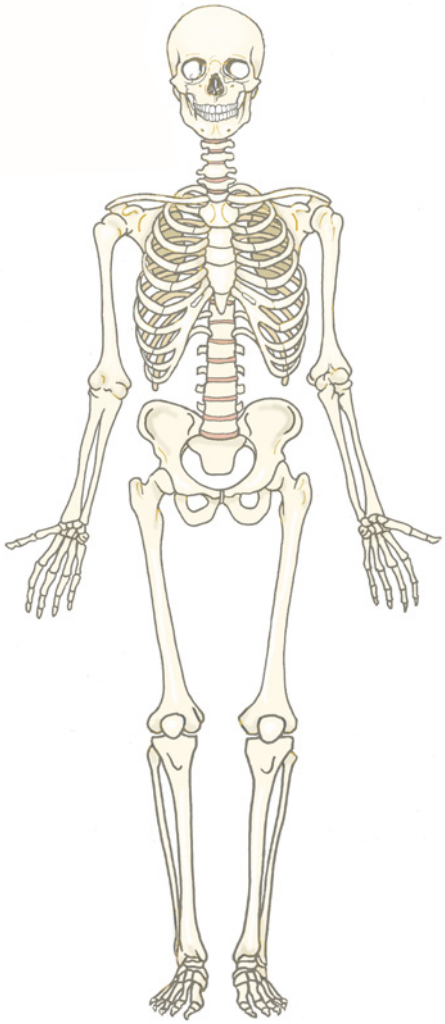

Human skeleton

All other animals are called invertebrates. Invertebrates do not have an internal skeleton. Examples of invertebrates include sponges, jellyfish, corals, worms, shellfish, octopuses, starfish, spiders and insects.

What are some examples of vertebrates?

Examples of vertebrates include humans, dogs, cats, birds, snakes, crocodiles, turtles, frogs, lizards and fish.

Some examples of vertebrates

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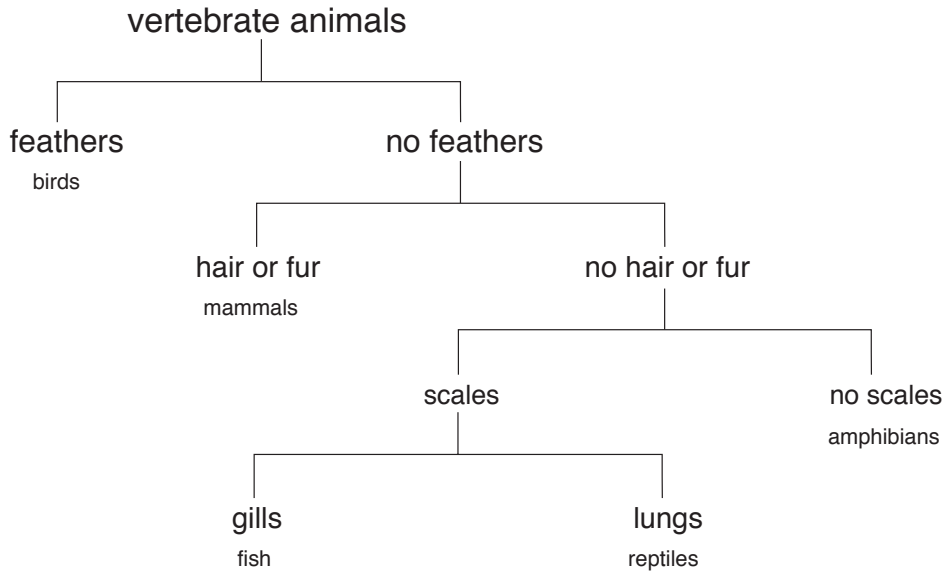
As you know, there are a large number of vertebrates. This is going to make studying these animals very hard, isn't it? It will be easier if you can make even smaller groups. And this is what biologists have done.

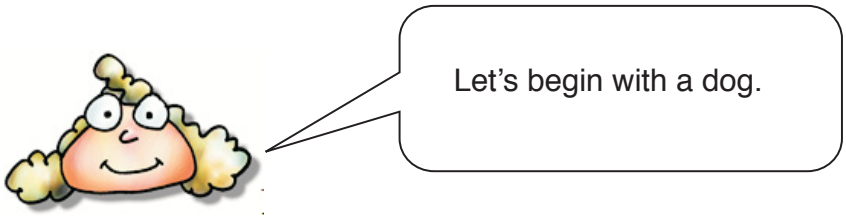
How can we classify vertebrates?

Vertebrates can be divided into five smaller groups. These vertebrate groups are called classes. Do you know what they are? The five classes are fish, amphibians, reptiles, birds and mammals.

Use a key to classify the five vertebrates shown previously.



A vertebrate key



Starting at the top of the key, the first question to ask yourself is – does a dog have feathers? The answer is no, so you go to no feathers. Then, does a dog have hair or fur? Yes, a dog has hair. Therefore, from the key, a dog belongs to the mammal class.

Now you can practise using the vertebrate key to classify the other four vertebrates shown in the previous picture.

Activity: How can we classify vertebrates?

Complete the table below.

Vertebrate	Class
Forest dragon	
King parrot	
sardine	
Green tree frog	

Check your response by going to the suggested answers section.

Preparing for the Exercise

These exercises show your teacher how well you can use a biological key.

Go to the exercises section and complete Exercise: Vertebrates

Now you can use your knowledge of classification to play a game.

Vertebrate snap – a learning game

This game is designed so that you can have fun while you are learning more about vertebrates.

Activity: Vertebrate snap – a learning game

On the following pages, there are drawings of thirty different vertebrates. There are six different examples each of fish, amphibians, reptiles, birds and mammals. Detach the two sheets of vertebrates. Cut along the lines to produce thirty different cards.

Sort the thirty different vertebrate cards into five groups – fish, amphibians, reptiles, birds and mammals. Use the key 'A vertebrate key' to help you decide.

Now write the name of each vertebrate into the correct box in the table below.

Vertebrate class	**Examples from vertebrate cards**
fish	
amphibians	
reptiles	
birds	
mammals	

Check your response by going to the suggested answers section.

Playing the game

You need at least one other person to play this card game.
Almost anyone will do!

How do you play the game?

1 Shuffle the cards.

2 Deal out all the cards face down.

3 Take turns to place a card in the centre of the table, face up, one on top of the other.

4 When two animal cards from the same vertebrate class are put one on top of the other, everyone has a chance to win the card pile. The first person to shout ‘snap’, put their hand on the cards and then say to what class the two vertebrates belong, wins the card pile.

5 The person who ends up with all the cards wins the game.

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Summary

Activity: Summary

Complete a summary for the lesson.

- Animals can be divided into two groups – _____ and invertebrates.
- Vertebrates have an internal _____ with a backbone.
- Vertebrates can be _____ into five classes – fish, amphibians, reptiles, birds and mammals.
- Vertebrates can be classified using a _____ .

Check your response by going to the suggested answers section.

What did you achieve?

Tick what you can do.

- ❒ use a key to classify vertebrates
- ❒ list examples of the five vertebrate classes
- ❒ use information from a table to write a description of each vertebrate class

Suggested answers

Check your responses against these suggested answers.

How can we classify vertebrates?

Vertebrate	Class
forest dragon	*reptile*
parrot	*bird*
sardine	*fish*
river frog	*amphibian*

Vertebrate snap – a learning game

Vertebrate class	Examples from vertebrate cards
fish	eel, shark, goldfish, wrasse, angel fish, seahorse
amphibians	river frog, tree frog, water holding frog, marsh frog, axolotl, salamander
reptiles	brown snake, tortoise, crocodile, dinosaur, goanna, bearded dragon
birds	kingfisher, emu, hummingbird, parrot, cormorant, owl
mammals	ringtail possum, bilby, platypus, fruit bat, dolphin, human

Summary

- Animals can be divided into two groups – vertebrates and invertebrates.
- Vertebrates have an internal skeleton with a backbone.
- Vertebrates can be classified or grouped into five classes – fish, amphibians, reptiles, birds and mammals.
- Vertebrates can be classified using a key.

Exercise

Living things

Name _____

Teacher _____

Exercise– Vertebrates

1 In the lesson, you classified five animals – a dog, forest dragon, parrot, sardine and river frog.

green tree frog

king parrot

sardine

forest dragon

dog

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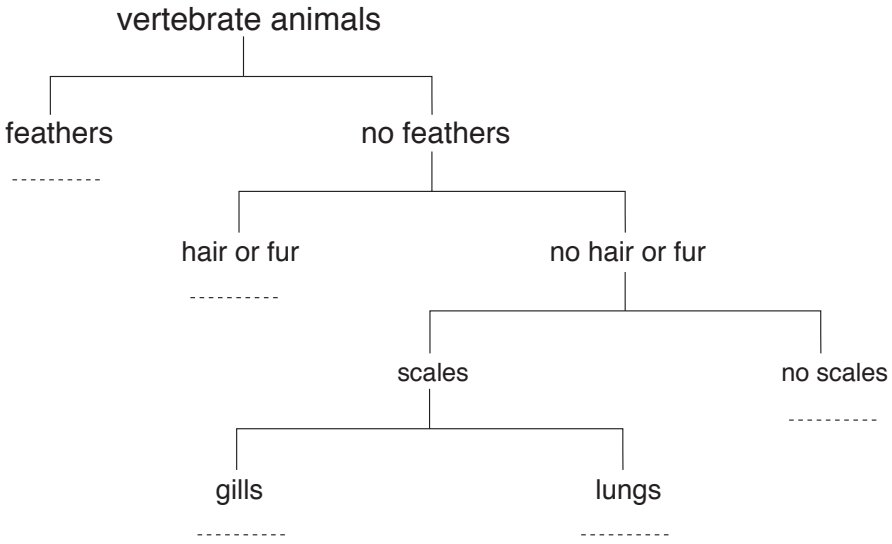
Write their names into the correct spaces in the following key.

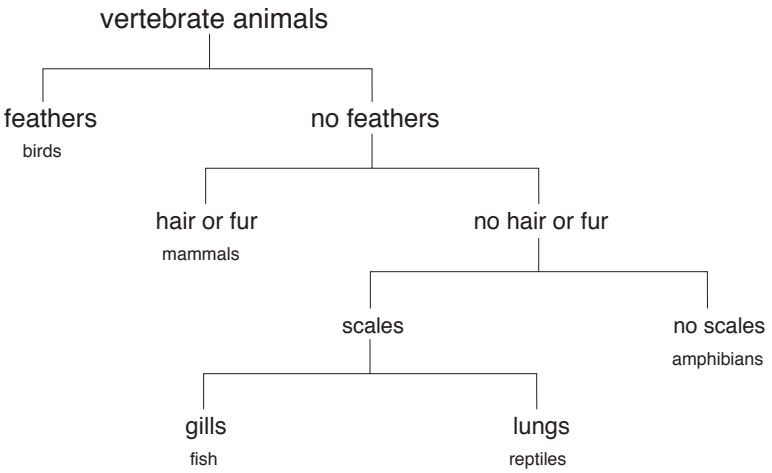


2 From the key, list the features of a forest dragon.

_____

_____

3 Here again is the vertebrate key you have been using this lesson.



Use the key to classify each of the vertebrates shown below.

Name: Ring-tailed possum

Class:

Name: Tuna

Class:

Name: Magpie

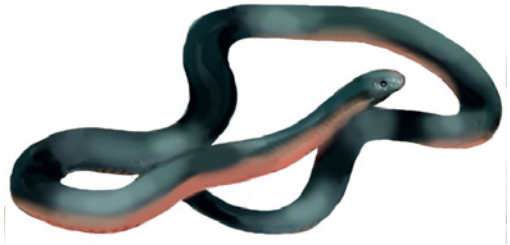
Class:

Name: Marsh frog

Class:

Name: Tawny frogmouth

Class:



Name: Red bellied black snake

Class:

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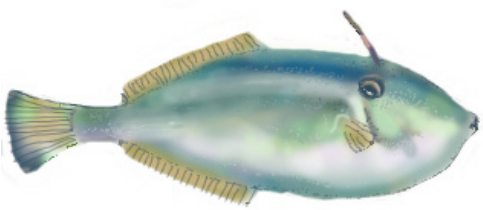
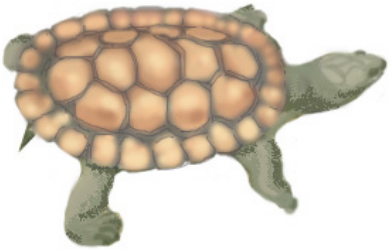
Name: Goanna

Class:



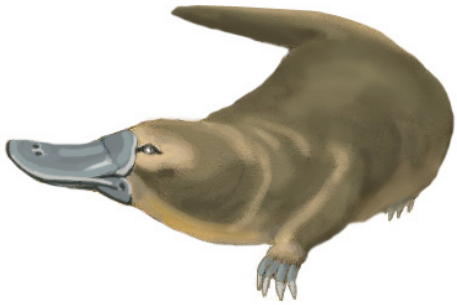
Name: Leather jacket:

Class:



Name: Tortoise

Class:



Name: Platypus

Class:

Name: Axolotl

Class:

Name: Bilby

Class:

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