

Lesson 1: How to classify animals

Children will learn to: recognize the difference between vertebrates and invertebrates; classify animals into groups: mammals, reptiles, amphibians, birds, fish, insects, arachnids, molluscs; identify and describe key features of animals in each group

Main outcome: Children write descriptions of animal groups

Cognitive skills: predicting, classifying, reasoning, applying knowledge, identifying and sorting, justifying

Main language: *We've put ... in one/the other group; Are they ...? Yes, they are. / No, they aren't.; Do they ...? Yes, they do. / No, they don't.; Why ...?; The ... is a ... because ...; They live / lay eggs / have got ...*

Main vocabulary: *vertebrates, invertebrates, backbone, mammals, reptiles, amphibians, birds, fish, insects, arachnids, molluscs, names of animals, parts of the body, fur, shell, scales, eggs, lungs, gills, warm-blooded, cold-blooded, water, land*

Materials: Worksheet 1: Animal picture cards (copy for each child); Worksheet 2: Finding out about vertebrates (copy for each child); photos of animals (optional)

Introduction and setting objectives

- Explain to the children that they are going to do a project on the 'Amazing world of animals'. As part of the project they are going to produce a group e-zine (or magazine).
- Divide the class into 'project groups' of 3-6 children (depending on the size of the class). Explain that the children will work with their project groups to produce material for their e-zines (or magazines) but they will also work with other children during lessons to do activities.
- Play an alphabet game with the whole class to elicit the names of animals. Say the letters in turn and children name animals they know, e.g. A - Alligator! Ant! / B - Bear! Butterfly! / C - Camel! Cow! etc. If the children can't name an animal for the letter, they say *Pass!* Keep a record of answers. Children win the game if they can name at least one animal beginning with each letter more than they say *pass*.
- Ask *Are animals the same? / Are bears the same as butterflies?* (for example) and elicit some of the differences, e.g. *Bears have fur. / Butterflies have wings.*
- Say *In this lesson we're going to learn how to classify animals and to identify and describe the features of different animal groups.* Elicit or explain that 'classify' means to put things into groups to show how they are alike, and that 'features' are characteristics, such as fur or wings, for example. Say *We're also going to write about and illustrate different animal groups for our e-zines (or magazines).*

Suggested lesson procedure

Activity 1

- Give a copy of Worksheet 1 to each child and ask the children to cut out the cards.
- Divide the class into pairs. Ask the children to arrange the animal cards on their desks into two groups using a feature that the animals have in common.
- Ask different pairs to report back on how they have grouped the animals e.g. *We've put animals, that live in or near water in one group, and animals that live on land in the other group. / We've put animals with legs in one group and animals with no legs in the other group.* Listen and accept the logic of the criteria children have used to classify the animals. Then establish that all animals in the world can be put into two main groups: *vertebrates*, or animals with a backbone, and *invertebrates*, or animals with no backbone. Clarify meaning by asking the children to feel their own backbones and demonstrate this.
- Give children time to rearrange their cards based on this criteria.
- Check children have sorted the cards correctly by asking them to name the animals in each group (vertebrates: *tiger, frog, parrot, whale, snake, parrot, goldfish, crocodile, newt, owl, shark*; invertebrates: *spider, butterfly, ladybird, scorpion, snail, octopus*). Be ready to explain, if necessary, that although insects have an exoskeleton (or outer skeleton), they do not have a backbone.

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Activity 2

- Explain that within each main group of animals, vertebrates and invertebrates, there are different sub-groups. Ask children to work with their partner and rearrange the cards on their desks into as many different groups as they can identify.
- Ask different pairs to report back, either naming the groups they have identified (e.g. *mammals, fish*) or, if they don't know the name, to explain the criteria they have used, e.g. *they haven't got legs, they live in water and on land.*
- Establish that there are eight different animal groups with two of the animal cards in each one (mammals: *tiger, whale*; reptiles: *crocodile, snake*; amphibians: *frog, newt*; birds: *parrot, owl*; insects: *butterfly, ladybird*; arachnids: *spider, scorpion*; molluscs: *snail, octopus*).
- Ask the children to name other animals in each group and listen to their responses.

Activity 3

- Play a team game. Divide the class into two teams. Say sentences about key features of the different animal groups in turn. Children in each team take turns to identify the animal group(s) the sentences apply to and score points for their team. Keep a score on the board and the team who identifies most sentences correctly at the end of the game is the winner.
- As the children play, explain or check children's understanding of vocabulary to describe key features as necessary. Examples of sentences you can use in the game are: *They have fins / scales / damp skin / feathers / no legs / six legs / eight legs / two body parts / three body parts. They have babies / lay eggs on land / lay eggs in water. They have fur / a shell. They are warm-blooded / cold-blooded. They breathe with lungs / gills / lungs and gills.*

Activity 4

- Give a copy of Worksheet 2 to each child.
- Read the names of the animal groups at the top and the questions in the table and check understanding if necessary.
- Children work individually and write the answers in the table.
- Children compare and check their answers in pairs.
- Check the answers with the whole class by getting

children to ask and answer questions about the different animal groups, e.g. *Are they warm-blooded? Yes, they are. / No, they aren't. / Do they have fur or body hair? Yes, they do. / No, they don't.*

Key:

	mammals	reptiles	amphibians	fish	birds
Are they warm-blooded?	yes	no	no	no	yes
Are they cold-blooded?	no	yes	yes	yes	no
Do they have fur or body hair?	yes	no	no	no	no
Do they have feathers and wings?	no	no	no	no	yes
Do they have fins and scales?	no	no	no	yes	no
Do they have dry skin and scales?	no	yes	no	no	no
Do they have damp, smooth skin?	no	no	yes	no	no
Do they lay eggs in water?	no	no	yes	yes	no
Do they lay eggs on land?	no	yes	no	no	yes
Do they have live babies?	yes	no	no	no	no
Do they feed their babies with milk?	yes	no	no	no	no
Do they breathe with lungs?	yes	yes	no	no	yes
Do they breathe with lungs and gills?	no	no	yes	no	no
Do they breathe with gills?	no	no	no	yes	no

Activity 5

- Divide the class into their project groups. Explain that you want children to use the information in the completed tables to write descriptions of animal groups for their e-zines (or magazines) and *either* draw pictures, find photos, *or* colour and stick on relevant animal picture cards from Worksheet 1 to illustrate their descriptions.
- Ask children, either individually or in pairs within their project groups, to choose one animal group and circle all the 'yes' answers in their completed tables for this group.
- Ask children to use the circled 'yes' answers to write a short description of the animal group they have chosen. Build up a description of one animal group orally, as an example before they begin, e.g. *Mammals are warm-blooded and have fur or body hair. They have live babies and feed their babies with milk. They breathe with lungs.*

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- Get children to self-correct and check each other's work within their project groups.
- *Either* give out A4 paper, coloured pens and glue (if children are going to use the animal picture cards) *or* children work at their computers and prepare their descriptions to go in their e-zines (or magazines). Children can also optionally illustrate their descriptions with pictures or photos. These can be completed either as homework or in a follow-up lesson as necessary.

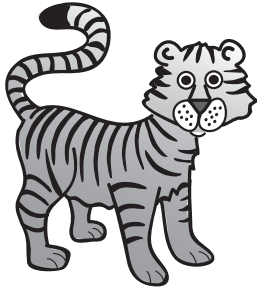
Learning review

- Briefly review learning by asking the children, *What have we done today? What have you learnt? How did the picture cards / table help you classify animals? What did you enjoy most / find most interesting / difficult?*

Optional extra

Children play a guessing game, either with the whole class and/or in pairs, based on the table. One child chooses an animal group and the rest of the class, or their partner, asks three questions to deduce the answer, e.g. *Are they warm-blooded? No, they aren't. Do they lay eggs in water? Yes, they do. Do they have fins and scales? Yes, they do. Is it 'fish'? Yes, it is!*

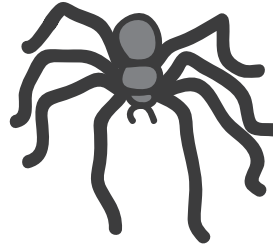
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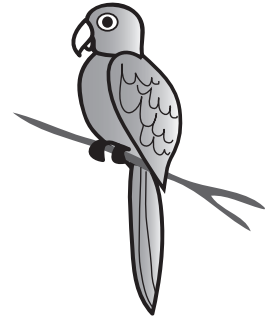
a tiger



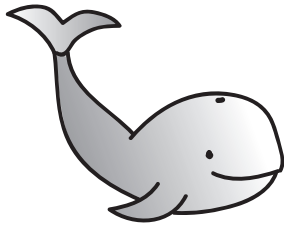
a frog



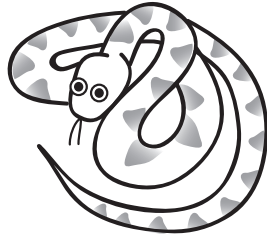
a spider



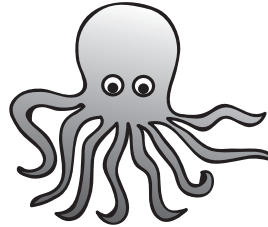
a parrot



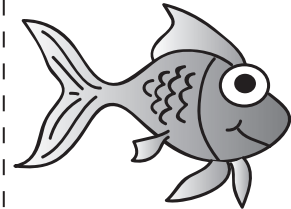
a whale



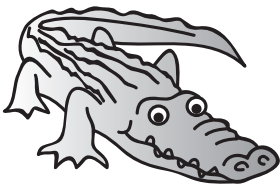
a snake



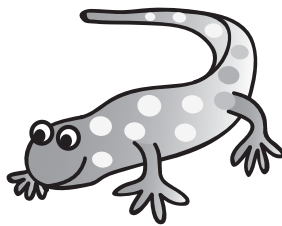
an octopus



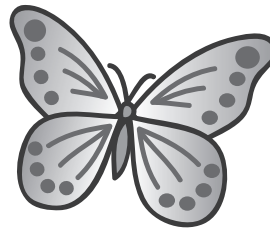
a goldfish



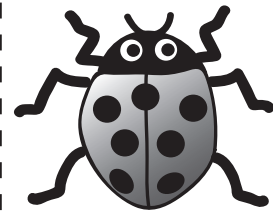
a crocodile



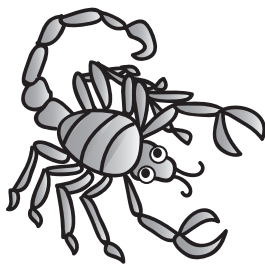
a newt



a butterfly



a ladybird



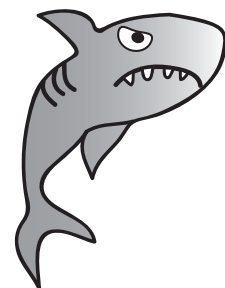
a scorpion



a snail



an owl



a shark

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1. Read and answer 'yes' or 'no'.

	mammals	reptiles	amphibians	fish	birds
Are they warm-blooded?	yes	no			
Are they cold-blooded?					
Do they have fur or body hair?					
Do they have feathers and wings?					
Do they have fins and scales?					
Do they have dry skin and scales?					
Do they have damp, smooth skin?					
Do they lay eggs in water?					
Do they lay eggs on land?					
Do they have live babies?					
Do they feed their babies with milk?					
Do they breathe with lungs?					
Do they breathe with lungs and gills?					
Do they breathe with gills?					

2. Choose one animal group and write a description.