Grouping animals - Classification

Teacher Notes/ Activity/Worksheets

What can we offer

At Hamilton Zoo we can provide educational opportunities for students of all levels. This programme gives students the opportunity

- To recognise that living things can be grouped into science-based classifications.
- To investigate the many ways animals can be grouped.

Key Competencies

Participating and Contributing – *students are* given the opportunity to see how zoos contribute to the conservation of animals.

Using Language, Symbols and Text - *students will* explore animal behaviour and habitat through visual, oral and written text and communicate findings in a variety of formats.

Relating to others – *students will* be able to listen actively to each other, recognise different points of view and share ideas in relation to classifying animals.

Thinking – *students will* use creative and critical thinking to make sense of observations, information and ideas, which will allow them to confidently groups animals.

Managing Self – *students will* be self-motivated, follow instructions and complete tasks.

Values

Innovation, Inquiry and Curiosity *by thinking critically, creatively, and reflectively.*

Participation in the wider community

Respect for themselves, others and animals.

Possible Learning Areas / Achievement Objectives

(main focus Science with links to other areas)

Science	**Level 1/2** **Living World - Ecology** - Recognise that living things are suited to their particular habitat. **Living World - Evolution** - Recognise that there are lots of different living things in the world and that they can be grouped in different ways. **Level 3/4** **Living World - Ecology** - Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced. **Living World - Evolution** - Begin to group animals and other living things into science-based classifications.
English	Listening, Reading and Viewing Speaking, writing and Presenting
Mathematics	Statistics, Number,
The Arts	Music, Visual Arts
Health and Physical Education	Movement Concepts and Motor Skills – Science and Technology

Learning Intentions

- Respect self, others and the environment
- Communicate effectively
- Solve problems efficiently

Teacher Notes

Dividing things into groups on the basis of similarities and differences is something that is done every day. Imagine going into a library to find a book if there was no grouping: you would have to look through thousands of books to find the one that you wanted.

Scientist use a similar process to group. There are a couple of groupings before we can look at the animals at the zoo.

1. Living or Non-living
2. Plant or animal

Animals can then be broken down into two groups. Vertebrates (those with a spine) and invertebrates (those without a spine). Although we use invertebrates here at the zoo to feed some of our animals we will be looking at vertebrates.
Vertebrates can be split into 5 main groups. Mammals, Amphibians, Reptiles, Birds and Fish. (please remember for each group there can always be exceptions)

Mammals

- They are warm blooded
- They have fur, hair or wool
- They give birth to live young (exception here is that platypus and echidna lay eggs)
- The mother feeds milk to their young
- They all have lungs

Birds

- They are warm blooded
- They have feathers
- They lay eggs with hard shells
- They have a beak, two wings and two legs

Reptiles

- They are cold-blooded
- They have hard leathery scales
- Most have 4 limbs and a tail (exception here is the snake has no limbs)
- Most lay eggs with leathery shells
- They have lungs

Amphibians

- They are cold blooded
- Young have gills and adults have lungs
- Moist scale less skin
- Webbed feet
- Young live in water, adults live on land

Fish

- They are cold blooded
- They live in water
- They have gills
- They have scales and fins
- They lay soft eggs

Warm blooded animals: are able to generate heat internally and maintain a constant body temperature that can differ from the surrounding air temperature.

Cold blooded animals: are not able to maintain a constant internal body temperature. The temperature of cold blooded animals is determined by the temperature of the surrounding environment. An example of this is the reptile that needs to sit in the sun to warm up and sit in holes in the ground to cool down.

Vocabulary

Vertebrate, invertebrate, cold-blooded, warm-blooded, vertebra, species, amphibians, mammals, reptiles, fish, birds, regulation, endotherms, ectotherms, adaptation, aquatic, carnivore, herbivore

Pre-visit Learning

- Think about the different ways things around us can be grouped. Ask the class to choose everyday items like buttons or pencils and group them in as many different ways they can think of.
- Find out the names of students' pets. Can they classify the pets just from their names? Get them to draw their pets; is it easier to classify them now?
- Get students to cut out animal pictures from magazines. Can they put them into piles of similar ones? Discuss the problems that arise. Get them to think about body coverings, breeding strategy and mode of breathing.
- Make students aware of the difference between vertebrates and invertebrates.
- Activity – What group do I come from? (see activity details)

Learning at the Zoo

- Zoo educator can reinforce classifying of animals. Look at the 5 different groups of vertebrates. Look at examples they may find here at the zoo and talk about their special features.
- Worksheet – Observing animals
- Worksheet - Where can I hide?
- Worksheet – Observing Animals
- Worksheet - Bird, reptile, mammal, amphibian or fish?
- Worksheet – Who am I? - Scavenger Hunt
- Choose animals to sketch the patterns on their fur, skin etc.

Post-visit Learning

- Worksheet – Fur, feathers, skin or scales?
- Worksheet – Classifying vertebrates
- Worksheet – Classification Key
- Design a classification flow chart with the understanding that you have of each animal.

Activity – What group do I belong to?

What group do I come from??

This game/activity can be used as a group or individual activity at school.

Cut out cards (see below) and get students to try and place these in the correct groups. This activity could be used as a before view and after view. It is also a way of introducing some of the vocabulary used when classifying animals.

References and Resources

Animal Classification Game - http://www.pbslearningmedia.org/asset/lsps07_int_animalclass/
This webpage has facts about each animal group but also an interactive online grouping game.

A-Z Animals - http://a-z-animals.com/reference/animal-classification/
This webpage is full of animal information including classification/ taxonomy.

Who Am I? by Gervase Phinn, 2012 (picture book)

Mammals - www.youtube.com/watch?v=_YSCLSFm2eA#t=53
Discover Channel Clip

Classification of Species - www.sciencechannel.com/tv-shows/greatest-discoveries/videos/100-greatest-discoveries-classification-of-species.htm
Science Channel Clip

Mammals: Investigating a Group of Animals - scienceonline.tki.org.nz › ... ›
Titles and concept overviews

Classifying Vertebrates

Vertebrates all have similarities and differences. This makes grouping clearer. Get students to answer the question first then list animals at the zoo that belong to each group.

	What is my body covering?	What do I use to breathe?	How do I have babies?	Am I warm-blooded or cold-blooded?	Animals of this group
Fish					
Amphibian					
Reptile					
Bird					
Mammal					

Where can I hide? – Camouflage

Can you put animals you see at the zoo into the right habitat?
Look at the animal signs for your answers or their colourings/markings of their fur or skin may give you a clue ☺

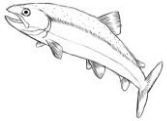
Savannah – Grasslands	**Rainforest**
Bush	**Wetlands**

*answers can also be found on our website under each individual animal

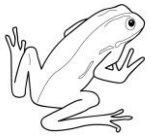
Fur, feathers, skin or scales?

Draw lines to connect animal coverings with animal groups and animals.

Fur **Feathers** **Scales** **Skin**

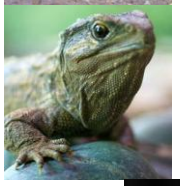

fish

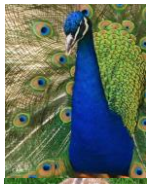
reptile

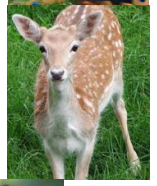

amphibian

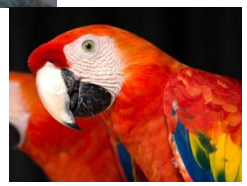
mammal

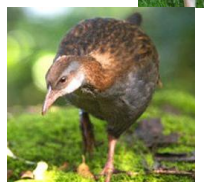
bird











What group do I come from?

(Activity cards page 1 of 3 – Cut out cards to use for Activity)

Mammals	I have a backbone	I can be covered in fur/wool/hair	I carry babies in my stomach	Babies are fed milk
I am warm blooded	I have lungs	I have ear flaps	Most animals in this group live on land	I am warm to touch
Birds	I have a backbone	I am covered in feathers	I lay eggs	I am warm blooded
My eggs have hard shells	I am warm to touch	I have lungs	Most in this group can fly	

What group do I come from?

(Activity cards page 2 of 3 – Cut out cards to use for Activity)

Reptiles	I have a backbone	I am cool to touch	I lay eggs	My eggs are leathery to touch
Most in this group live on land	I am cold blooded	I have lungs	My body is covered in leathery scales	
Amphibians	I have a backbone	I lay eggs	My eggs are soft jelly covered	Young have gills
Adults have lungs	Young live in water	Most do not have scales	I am cold to touch	I am cold blooded

What group do I come from?

(Activity cards page 3 of 3 – Cut out cards to use for activity)

Fish	I have a backbone	Live in water	I lay eggs	I have gills
I am covered in scales	I have fins	I am cold blooded	My eggs are soft	I have cartilage skeleton instead of bone
Invertebrates	I have no backbone	I can have 6 or more legs	I can have many eyes	I have hemolymph instead of blood
I can have feelers, stings or antennae	I can be brightly coloured	Some in this group can fly	I can be tiny but don't get very big	

Observing animals

Use this table to observe the animals while at the zoo and then find ways to group them.

ANIMAL	COVERING	FOOD	LIMBS	TAIL	SIZE
human	skin, hair	plants, meat	2 arms, 2 legs	no	medium
giraffe					
ostrich					
tiger					
kea					
gecko					
rhino					
frog		insects		adults no	
fish	wet scales	plants, meat	none	yes	mainly small
chimp					
tui					

Looking at the characteristics of the animals above can you find different ways to group the animals?
What would your groups be?

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-
-
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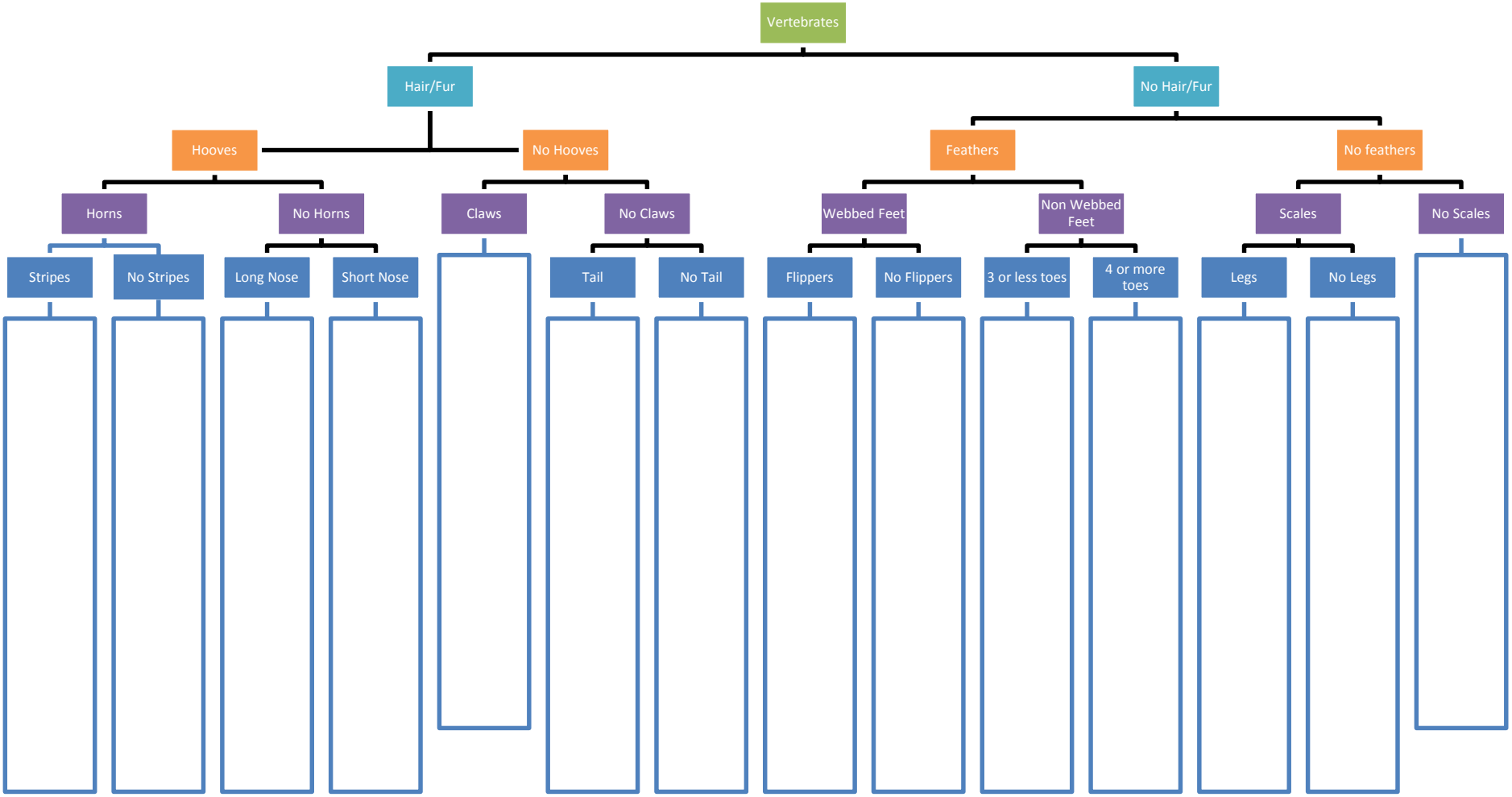
Classification Key

With a bit of research can you find an animal that fits each description to complete the key?



Bird, reptile, mammal, amphibian or fish?

Can you find the following animals? Look at their body coverings and complete the sentences.

A gecko is a _____, it is covered in _____.

A capuchin is a _____, it is covered in _____.

A tiger is a _____, it is covered in _____.

A red panda is a _____, it is covered in _____.

A kaka is a _____, it is covered in _____.

A turtle is a _____, it is covered in _____.

A frog is an _____, it is covered in _____.

An ostrich is a _____, it is covered in _____.

A tuatara is a _____, it is covered in _____.

A rhino is a _____, it is covered in _____.

A lemur is a _____, it is covered in _____.

A macaw is a _____, it is covered in _____.

One type of animal group you may not have seen.
Which group of animals is this?

_____

Draw one below.

Who am I?

Look at these close up pictures of animal coverings.
While walking around the zoo look closely at the animals and guess who belong to each one.

A

_____

B

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C

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D

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E

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