

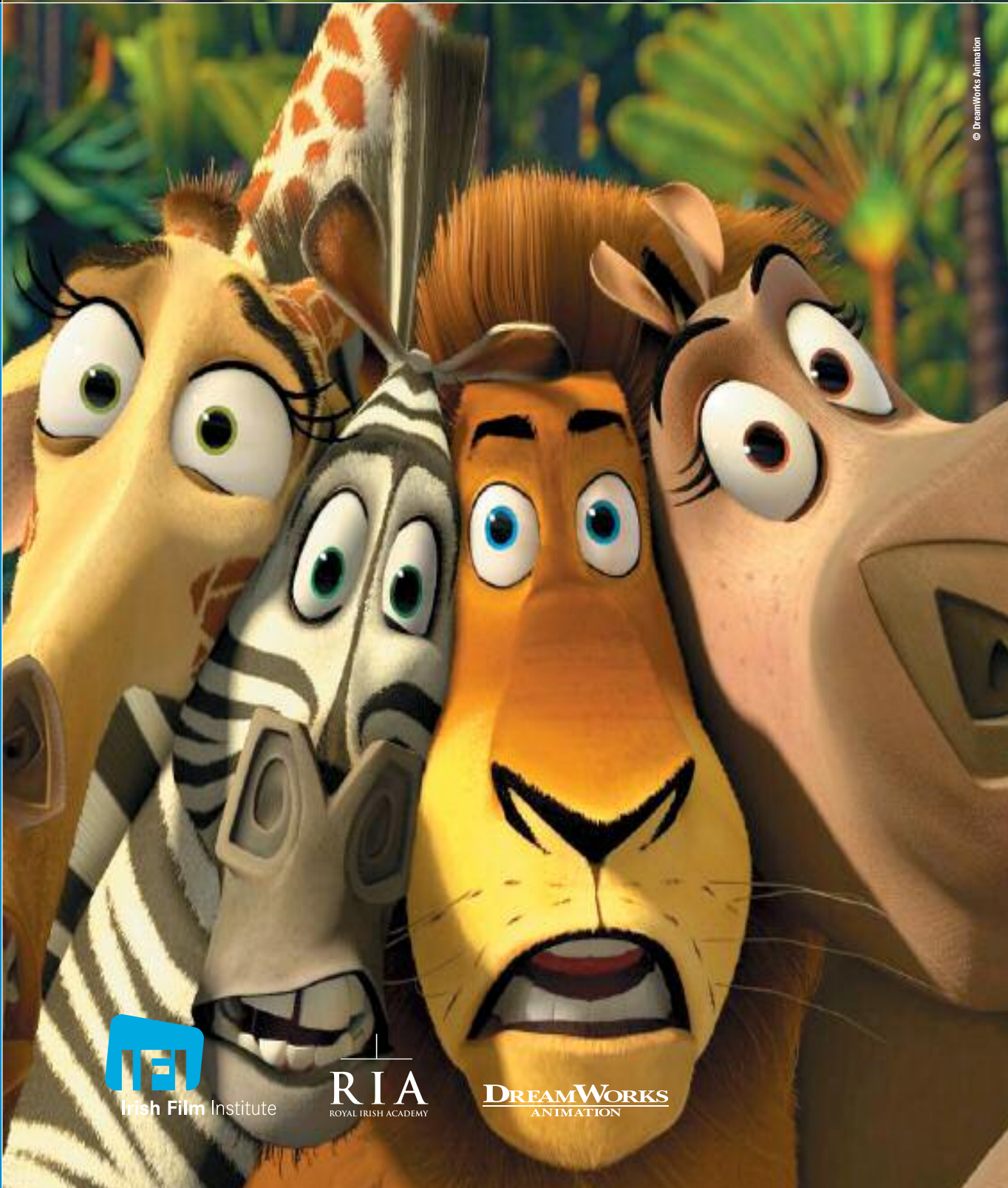
The Irish Film Institute & Royal Irish Academy present

# MADAGASCAR

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IFI Education

Follow-up Classroom Activities for Hamilton Year of Science 2005



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Irish Film Institute

RIA  
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# Introduction & Synopsis

## Introduction

The Royal Irish Academy, Ireland's academy for the sciences, humanities and social sciences, co-ordinated events in 2005 celebrating the life of Ireland's most eminent scientist, William Rowan Hamilton (1805 – 65). He is best known for his discovery in 1843 of quaternions – an important mathematical expression used in describing 3D spaces in computer graphics – whilst walking along the Royal Canal in Dublin.

In association with the Royal Irish Academy, and as an extension of Hamilton Year of Science 2005, IFI Education is delighted to present this study guide, based on popular animated feature *Madagascar*.

The study guide contains follow-up classroom activities with a primary science focus.

**Section One** – Teacher Guidelines

**Section Two** – Student Activity Sheets 1 – 7

I hope you will find this study guide a useful, interesting and fun resource in your teaching of science in the primary curriculum.

**Ann Ryan**

Education Officer

Irish Film Institute

## Synopsis

Alex the Lion (voiced by Ben Stiller), Marty the Zebra (Chris Rock), Melman the Giraffe (David Schwimmer) and Gloria the Hippo (Jada Pinkett Smith) live happily at New York Zoo. But when Marty discovers that a group of plotting penguins are planning an escape to 'the wild' he decides to do the same – even though he has no idea what to expect. Eventually, after some hilarious misadventures, all four end up on the island of Madagascar.

Alex, the most reluctant escapee, is desperate to get back to the zoo, but finds that his natural hunting instincts are beginning to surface – and he begins to view his best friend Marty as a tasty dinner! The chase is on to get back to New York and the safety and comfort of the zoo.

USA • 2004 • Animation • 80 mins • Film Classification: G

**Directors:** Eric Darnell/Tom McGrath



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# Section One

## Teacher Guidelines



### Section One – Teacher Guidelines

#### Lesson 1 – What do we like to eat?

1. Refer to the animal characters from *Madagascar* and discuss what they each like to eat – eg Alex likes eating steaks. Make the point that Alex, Marty, Gloria and Melman live in captivity at the zoo so they don't have to hunt/look for food as they would have to do in the wild.

Discussion questions to include:

- Did the zookeepers look after the animals well?
- What kinds of food did they feed them?
- Do you think the animals would have been able to find their own food if they were set free?
- We all have different tastes too! What do you like to eat? How about your classmates?

2. Pupils to use dictionaries to find definitions of the following words:

captivity, diet, habitat



3. Refer to Activity Sheet 1. Divide class into groups. Ask them to record what each member usually eats for different mealtimes, e.g. breakfast, lunch, dinner, snacks.

4. Ask students to compare their findings with other groups.

Discussion questions could include:

- Are there any similarities/differences?
- Do we all like the same foods?
- Does anyone have a special diet? (e.g. vegetarian)

5. Ask students to display their results graphically, e.g. in a bar chart or a pie chart.

6. Further discussion:

- Is there a difference between the foods we like to eat, and the foods we need to eat to stay healthy?
- Are there some 'junk' foods listed among our favourites?
- What have we learned about our eating habits from this activity?

**Learning objectives in Lesson 1:**  
*Record and recognise different eating habits/diets*

**Methodologies:**  
*Researching, Communicating, Prediction and recording*

*Pair/Group work*



## Section One – Teacher Guidelines

### Lesson 2 – Do you have a NOSE for food?



#### 1. Refer to Activity Sheet 2.

- a. Students to work in pairs to recognise different kinds of food using their senses of taste, touch and smell.
  - Prepare a selection of food of different sorts: fruit segments, vegetable slices and grain based products, such as breakfast cereals, bread, crackers or biscuits. You will also need scarves/material to use as blindfolds.
  - Sort food into Set A and Set B with a selection in each set.
  - Students work in pairs with one of them blind-folded. The other student gives him/her a piece of food from Set A, and the blindfolded student has to guess what the food is, using his/her senses of smell, touch and taste.
  - Then, guessing again, student is asked to touch and taste the food but hold his/her nose to avoid smelling it.
  - When all the foods from Set A have been sampled, ask students to swap blindfolds, and follow the same guessing steps as before, this time with foods from Set B.
  
2. Follow-up discussion of the results to include the following questions:
  - What were your guesses like when you could touch, taste and smell the food?
  - What were your guesses like when you could touch and taste the food but not smell it?
  - What did you learn about your sense of smell from this activity?

### Lesson 3 – Animal tastes

#### 1. Introduce the concept of classifying animals according to their diets.

##### Possible questions:

- What foods do lions eat?
- What do rabbits eat?
- What is the difference in their diets?
- How do we describe/define this?

#### **Learning objectives in Lesson 2:**

Explore different foods using sense of smell, touch and taste.

#### **Methodologies:**

Prediction, recording and assessing results

Pair/Group work

#### **Learning objectives in Lesson 3:**

Classify and compare animals according to diet

#### **Methodologies:**

Researching and communicating

Individual/pair/group work



## Section One – Teacher Guidelines

### Lesson 3 – Animal tastes (cont)



2. Ask pupils to complete Activity Sheet 3.

a. Classifying

- Use a dictionary to find out the meanings of the words on the left.
- Match with the words on the right.

b. Who is the odd one out?

- Match the *Madagascar* characters with their species, then with their diets. Who is the odd one out? Why?
- Which of the four friends is nocturnal? (Answer: Gloria the hippo)

### Lesson 4 – Species & habitats

1. Think about where we live. How can we describe our habitat?

- Is it urban or rural?
- What sort of climate do we have?
- Describe your location. What does it look like?

2. Our Habitat

In groups, make a poster to display the information you find out about your habitat. Use different headings and pictures as well as words. Compare with other groups.

3. In the film, Alex, Marty, Gloria and Melman are friends even though they are from different species.

Discuss:

- Do you think they would have known each other if they really did live in 'The Wild' as Marty suggested?
- What kind of habitat would they live in?

**Learning objectives in Lesson 4:**  
Recognise different animal species and habitats. Recognise different aspects of where they live

**Methodologies:**  
Researching using the Internet

Group, pair, individual work



## Section One – Teacher Guidelines

### Lesson 4 – Species & habitats (cont)

#### 4. Pupils to do the following:



- a. Find out where these animals live in real life and what they eat there.
- b. As you research, fill your answers into the grid on **Activity Sheet 4**.  
There are extra spaces so you can choose some more species to research.  
*Check answers at the end of Section One – Teacher Guidelines.*

#### Useful websites for this activity include:

*Fota Wildlife Park, Cork:* [www.fotawildlife.ie](http://www.fotawildlife.ie)

*Dublin Zoo:* [www.dublinzoo.ie](http://www.dublinzoo.ie)

*Madagascar Movie:* [www.madagascar-themovie.com/](http://www.madagascar-themovie.com/)

*PBS:* [www.pbs.org/edens/madagascar](http://www.pbs.org/edens/madagascar)

*World Wildlife:* [www.worldwildlife.org/wildplaces/mad/index.cfm](http://www.worldwildlife.org/wildplaces/mad/index.cfm)

### Lesson 5 – Animal families and facts

#### I) Animal Families

##### 1. Collective nouns

Introduce the idea of collective nouns to describe groups of animals.



- a. Do you know the names for groups of some of the animals in the film?  
e.g. a group of lions is called 'a pride of lions.'
- b. Pupils to match the collective nouns to the correct animals on **Activity Sheet 5**, the answers to which are at the bottom of the page.

#### II) Animal Facts

##### 1. True or False?



Introduce the idea of facts about animals, referring to the statements on **Activity Sheet 5**.

Some statements are true and some are false. E.g. first statement – Do polar bears eat penguins? Ask class for a show of hands for True, and a show of hands for False. Then tell them the correct answer (False. Polar bears do not live in the Antarctic, where penguins live, so they never meet!) **Check answers at the end of Section One – Teacher Guidelines.**

*Learning objectives  
in Lesson 5:  
Find collective  
nouns for animal  
families*

*Methodologies:  
Investigation &  
research using  
dictionaries*

*Individual/pair  
work*



## Section One – Teacher Guidelines

### Lesson 6 – Camouflage

1. Pupils to use dictionaries to find definitions of:

camouflage, predator



2. Children can discover how camouflage works by creating a background in which an animal can 'hide'. (Activity Sheet 6)

*Materials:*

paper, scissors, collection of science/nature magazines, a selection of textures cut from magazine illustrations, glue, coloured markers.

*Instructions to pupils:*

- 1) Look through some magazines to find an interesting picture of an animal or other creature.
- 2) Cut out the animal carefully making sure you cut away all of the background.
- 3) Looking at the colours of the animal prepare a different background for it in which it can 'hide' from predators.
- 4) Use coloured paper or paint a background that you think will work.
- 5) Making sure the new background is dry, glue on the animal.
- 6) Next add some details such as trees, leaves or stick on textures to ensure that your creature is well camouflaged.
- 7) When you have finished ask your classmates if they can see where and what the animal is. If you want another challenge, try to camouflage a zebra!!

**Learning objectives in Lesson 6:**

*Design and make suitable background to 'hide' or camouflage animal*

**Methodologies:**

*Researching, selecting using magazines*

*Individual/pair work*





## Section One – Teacher Guidelines

### Lesson 7 – Escape from Madagascar!



#### 1. Make an escape vessel. Refer to Activity Sheet 7.

- Introduce the idea of designing and making an escape vessel. This activity may be carried out over a number of lessons.

*Discuss:*

- What materials will float?
- How can you hold them together?
- Which size would float best?

**NB:** Children will need a variety of materials from which to make their vessel: plastic tubs, card, cartons, food trays, wooden dowels or lollipop sticks, glue, lego, small pieces of light wood, plasticine, etc. Encourage children to come up with a range of solutions – they need not all produce the same vessel.

*Instructions to pupils:*

**Design:** Once you have chosen a suitable material start designing your raft or boat. Draw some ideas first.

**Make:** Put together your raft or boat. Remember to allow lots of time for the glue to dry before trying to launch the craft!

**Test:** Try launching your raft/boat in the sink or in a basin of water. It will need to take at least one passenger (model-sized) and withstand some choppy seas (ask your classmates to help you!).

**Review:** How did it go? After testing your raft/boat, make any changes that you think are needed to improve it. Then, check out some of the other designs in the class. Are there some that float more easily than others? Why?

**Learning objectives in Lesson 7:**  
*Identify materials that float.  
Designing and making an escape vessel.*

**Methodologies:**  
*Brainstorming and research, designing and making.*

*Group/pair work*



## Section One – Teacher Guidelines

### Answers to Lesson 4 – Species & habitats

#### Question 4b

Species	Habitat	Location	Diet
Lion	Grasslands and the savannah	South of the Sahara in Africa	Antelope, zebras, warthogs, giraffes, buffalo
Zebra	Grasslands and the savannah	South of the Sahara in Africa	Short grass and leaves
Hippopotamus	Deep water, rivers or lakes with reed beds or grasslands nearby	South of the Sahara in Africa	Nile River valley in East Africa GRASS – up to 45kg in one night
Giraffe	Grasslands and the savannah where there are trees	South of the Sahara in Africa	Accacia and Mimosa trees – up to 35kg a day
Penguin	Climates ranging from warm tropics to the cold regions. Predator-free islands or remote parts of continents	Southern hemisphere – Australia, New Zealand, Africa and Antarctica	Fish and squid
Chimpanzee	Tropical rain forests, woodlands and grasslands	Western and Central Africa	Leaves, fruit, seeds, tree bark, flowers, ant, termites and small animals
Fossa	Tropical rain forest and bush forest	Madagascar	Small birds and mammals, reptiles and frogs.
Lemur	Tropical rain forest and scrub forest	Madagascar	Plants, leaves, flowers, fruits and sometimes insects



## Section One – Teacher Guidelines

### Lesson 5 Answers – Animal families and facts

#### I) Animal families – Question 1b.

##### 1b. Collective nouns

- 1) pride, 2) herd, 3) tower, 4) herd, 5) huddle, 6) gaggle, 7) school, 8) colony, 9) caravan, 10) litter

#### II) Animal facts – Question 1a.

##### 1a. True or False?

- 1) False Unlike penguins, polar bears do not live in the Antarctic.
- 2) True This is the same number of bones that you have in your neck (humans)
- 3) False The hippo is native to East Africa.
- 4) False No two zebras are identical - each one has a unique pattern.
- 5) True Male sea-horses do give birth to their young
- 6) False A cheetah is the fastest, reaching speeds up to 76kph. The fastest humans can only reach 30kph.
- 7) False It uses its tongue!
- 8) True A jellyfish is 95% water!
- 9) False In 1957 the Russians launched Sputnik 2, with a dog called Laika on board.
- 10) False A mouse next to an elephant is so small that the elephant would not even know that there is a mouse close to it!

# Section Two

## Activity Sheets



### Section Two – Activity Sheet 1

#### Lesson 1 – What do we like to eat?

In groups, complete the table below as you find out what you and your friends like to eat at different times of the day. Then, compare your results with other groups in the class. You can also display the results in a graph.



Name	Breakfast	Lunch	Dinner	Snacks

What have you learned about your eating habits from this activity?



## Section Two – Activity Sheet 2

### Lesson 2 – Do you have a NOSE for food?

Work with a partner for this activity. You will be finding out if you can recognise different kinds of food using your sense of touch, taste, and especially smell. One of you needs to wear a blindfold. Your teacher will provide you with a set of food samples.



- a) Guess the food, using your sense of smell, touch and taste.
- b) Guess the food, this time holding your nose while you touch and taste.

Your partner will write down the guesses. When you have finished your set, take off the blindfold and check your answers.

Name _____				
Food Set A	a) Smell it and guess the food!	b) Hold your nose, then guess!	Tick if you were right for a)	Tick if you were right for b)
1				
2				
3				
4				
5				



## Section Two – Activity Sheet 2

Name _____				
Food Set B	a) Smell it and guess the food!	b) Hold your nose, then guess!	Tick if you were right for a)	Tick if you were right for b)
1				
2				
3				
4				
5				

### Lesson 2 – Do you have a NOSE for food? (cont.)

- What were your guesses like when you could touch and taste the food but not smell it?
- What were your guesses like when you could touch, taste and smell the food?
- What did you learn about your sense of smell from this activity?



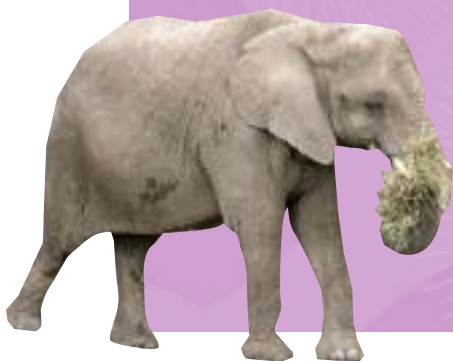
## Section Two – Activity Sheet 3

### Lesson 3 – Animal tastes

#### Classifying



- Use the dictionary to find out the meanings of the words on the left.
- Match with the words on the right.



Carnivore

Herbivore

Omnivore

an animal that feeds on plants

an animal that feeds on flesh

an animal that feeds on a variety of food

#### Who is the odd one out?

- Match the animals from the film with their species, then with their diet. Who is the odd one out? Why?



Alex



Marty



Melman



Gloria

Herbivore

Carnivore

Lion

Zebra

Hippopotamus

Giraffe

- There is another reason one of the friends may be the odd one out. Find out which one of the animals is nocturnal.



## Section Two – Activity Sheet 4

### Lesson 4 – Species and habitats

In the film, Alex, Marty, Gloria and Melman were friends even though they are from different species. What kind of habitat would these animals usually live in?



Find out where these animals live in real life and what they eat there. As you research, fill your answers into the grid below. There are extra spaces to allow you to choose species you would like to research yourself.

Species	Habitat	Location	Diet
Lion			
Zebra			
Hippopotamus			
Giraffe			
Penguin			
Chimpanzee			
Foosa			
Lemur			





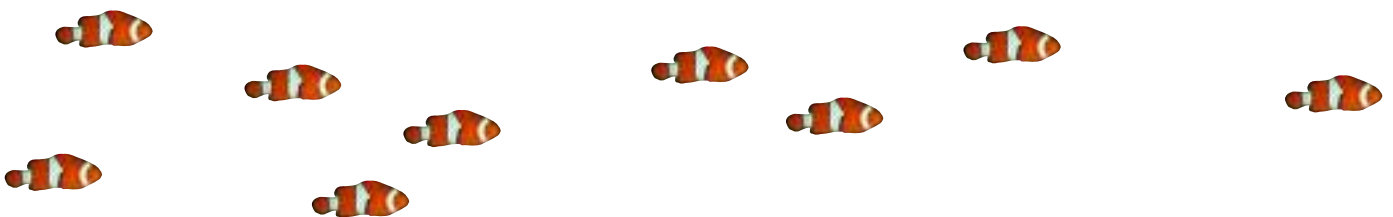
## Section Two – Activity Sheet 5

### Lesson 5 – Animal families and facts

A group of birds is called a flock of birds. Words that describe a group or family of animals are called collective nouns. Look at the list of animals below. Match the animals with their collective nouns on the right. Then check your answers below.

- |                         |                       |
|-------------------------|-----------------------|
| 1) A ..... of lions.    | 6) A ..... of geese.  |
| 2) A ..... of zebras.   | 7) A ..... of whales. |
| 3) A ..... of giraffes. | 8) A ..... of ants.   |
| 4) A ..... of hippos.   | 9) A ..... of camels. |
| 5) A ..... of penguins. | 10) A ..... of pups.  |

pride, tower, huddle, herd, gaggle, school, litter, herd, colony, caravan

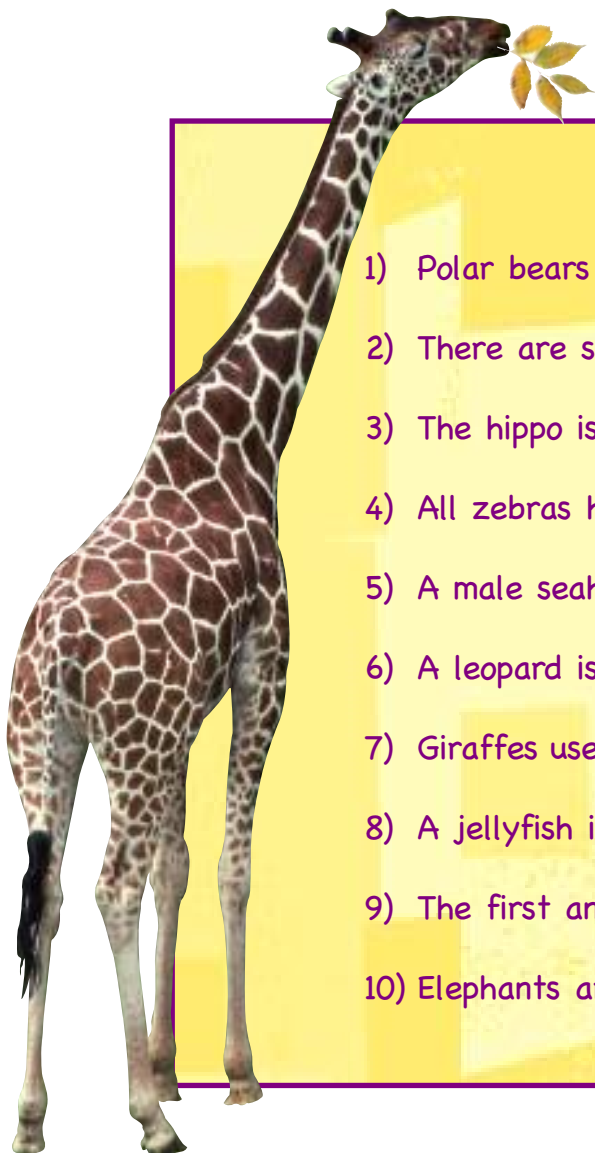




## Section Two – Activity Sheet 5

### Lesson 5 – Animal families and facts (cont)

Read the sentences below about different animals. Are they True or False? What do you think? Circle T or F for each of the sentences and then check your answers with your teacher.



	True	False
1) Polar bears eat penguins.	T	F
2) There are seven bones in a giraffe's neck.	T	F
3) The hippo is native to South America.	T	F
4) All zebras have the same pattern.	T	F
5) A male seahorse gives birth to its young.	T	F
6) A leopard is the fastest land mammal.	T	F
7) Giraffes use leaves on trees to clean its ears.	T	F
8) A jellyfish is mostly made up of water.	T	F
9) The first animal in space was a chimpanzee.	T	F
10) Elephants are afraid of mice.	T	F



## Section Two – Activity Sheet 6

### Lesson 6 – Camouflage

This involves disguising something in order to hide it. A zebra, like Marty in *Madagascar*, has markings that run off its edges into the background. This allows the zebra to fade into the background so it is difficult to see it.



You can find out how camouflage works by creating a background in which an animal can 'hide.'

*You will need:*

paper, scissors, science/nature magazines, glue, coloured markers.

*Instructions to pupils:*

- 1) Find an interesting picture of an animal.
- 2) Cut out the animal, making sure you cut away all of the background.
- 3) Look at the colours of the animal and then start making a different background for it so it can 'hide.'
- 4) Use coloured paper or paint a background that you think will work.
- 5) Glue the animal to your background.
- 6) Add some other things to the background, like trees and leaves.
- 7) When you have finished, ask your classmates to find the animal in the picture. How well have you hidden it?

***If you want another challenge, try to camouflage a zebra!***





## Section Two – Activity Sheet 7

### Lesson 7 – Escape from Madagascar!

Work in groups to design and make a raft or boat to escape from the island.

**Design:** Once you have chosen a suitable material, start designing your raft or boat. Draw some ideas first before making a final design choice.

**Make:** Put together your raft or boat. Remember to allow lots of time for the glue to dry before trying to launch it.

**Test:** Try launching your raft/boat in the sink or in a basin of water. It will need to take at least one passenger (model-sized!) and should float in choppy waters. (Ask your classmates to help you).

**Review:** How did it go? After testing your raft/boat, make any changes that you think are needed to improve it.

Check out some of the other designs in the class. Are there some that float more easily than others? Why?



# Curriculum & Acknowledgements

## Curriculum

These activities support the Revised Primary School Science curriculum addressing the following content objectives:

### Strand: Living Things (Primary School Science Curriculum p 84)

*Strand unit: Plant and Animal Life*

Variety and characteristics of living things.

- Develop an increasing awareness of plants and animals from wider environments
- Identify the interrelationships and interdependence between plants and animals in local and other habitats
- Observe and explore some ways in which plant and animal behaviour is influenced by, or adapted to, environmental conditions
- Recognise that there is a great diversity of plants and animals in different regions and environments
- Group and compare living things into sets according to their similarities and differences
- Become familiar with the characteristics of some major groups of living things

### Strand: Energy and Forces (Primary School Science Curriculum p 65 & 87)

*Strand unit: Forces*

- identify and explore how objects and materials may be moved

## Acknowledgements

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Images from *Madagascar* courtesy of Dreamworks Animation.

