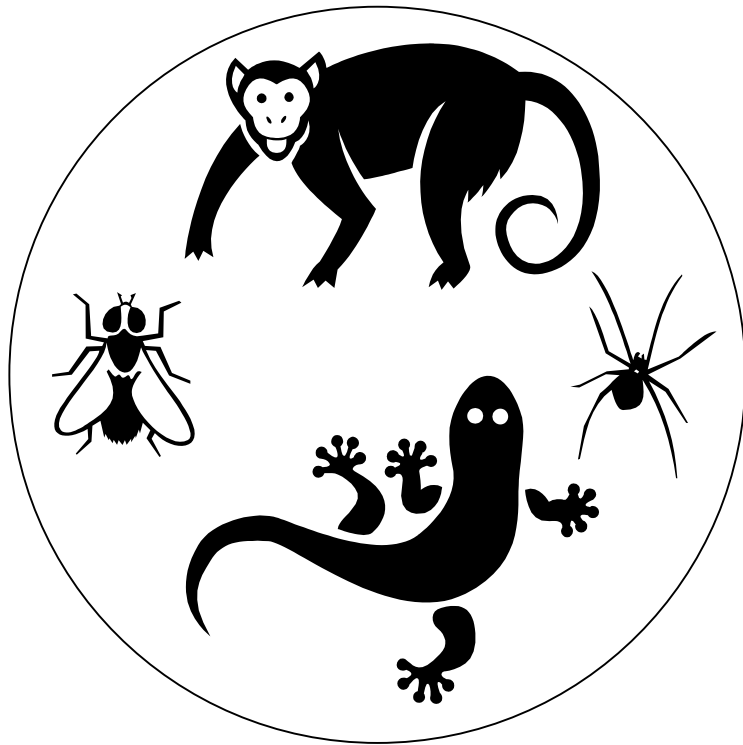


# Animals



Teacher's Notes

Ontario Science and Technology Curriculum 1999

Strand: Life Systems

Topic: Growth and Changes in Animals

Grade 2

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Developed by T. Tasker

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#### Overall Expectations

- demonstrate an understanding of the similarities and differences among various types of animals and the ways in which animals adapt to different environmental conditions
- investigate physical and behavioural characteristics and the process of growth of different types of animals
- identify ways in which humans can affect other animals

#### Specific Expectations

\* All specific expectations are covered by this unit and are mentioned at the end of each activity. The following are specific expectations that are met throughout the unit but are not specifically mentioned: LS11: plan investigations to answer some of these questions or find ways of meeting these needs, and describe the steps involved.

Materials Box
A variety of books about animals Magic School Bus: Inside a Beehive (video tape © Scholastic Inc., 2001) <u>The Very Hungry Caterpillar</u> by Eric Carle (ISBN 0-399-29853-4) Magic School Bus: All dried up (video tape © Scholastic Inc., 2001) Magic School Bus: In the Arctic (video tape © Scholastic Inc., 2001) Carnivorous, Herbivorous, and Omnivorous teeth made of fimo or crayola model magic <u>Voices from the Wild</u> by David Bouchard (ISBN 1551-92040-9)



Dear Parent or Guardian,

We are beginning our next Science and Technology Unit, Life Systems, Growth and Changes in Animals. By the end of this unit, your child will:

- demonstrate an understanding of the similarities and differences among various types of animals and the way in which animals adapt to different environmental conditions
- investigate physical and behavioural characteristics and the process of growth of different types of animals
- identify ways in which humans can affect other animals

As outlined in the Science and Technology Curriculum, Ministry of Education , 1999.

Home Links:

To help your child further their understanding of this science unit, here are some fun activities for you and your family:

- visit the Metro Toronto Zoo or another local zoo.
- visit a petting farm or petting zoo.
- research information on any pets that you own.
- visit a wildlife reserve or nature centre.
- visit the WWF kids treehouse at [www.wwfcanada.org/satellite/wwfkids](http://www.wwfcanada.org/satellite/wwfkids)



Happy Adventures,

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# Growth and Changes in Animals

## Animals

**\*\* As a class discuss what we know about animals.\*\***

Draw a picture of your favourite animal:

Write about your favourite animal:

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**\*\* Have students share their favourite animals with the class. After sharing, talk about some of the differences between the animals. Introduce how the Animal Kingdom is broken down into three classes; mammals, reptiles and insects. This is very simplistic in terms of the true classification system. Although these groups are all under the kingdom animalia, they would have been first divided into phyla and then into a class. In addition, all the classification names are much more scientifically specific. Talk about what makes an animal a mammal, reptile and insect. Below are specific definitions for your information:**

**MAMMALS: an animal that**

- has a backbone
- nurses its offspring with mother's milk
- is usually born alive
- is warm-blooded, so its temperature stays about the same no matter the weather
- has hair during all or part of its life
- cares for its young longer than other animals
- has a larger brain than other animals

**There are about 4,000 different animals! These include cats, dogs, cows, seals, whales and humans.**

**REPTILE: an animal that**

- is cold blooded
- has a spine
- has skin of scales or plates, and shed their skin several times a year
- has lungs
- in general reproduces by laying eggs

**There are about 6,000 different reptiles! These include snakes, lizards, alligators, crocodiles, and turtles.**

**INSECT: a small animal that**

- has three pairs of legs
- has a body divided into three parts (head, thorax and abdomen)
- usually has two pairs of wings

**Insects make up 80% of all animals on earth!**

Cut out the animal stickers and sort them into their classes:

Mammals	Reptiles	Insects
What are some common characteristics: _____ _____ _____	What are some common characteristics: _____ _____ _____	What are some common characteristics: _____ _____ _____

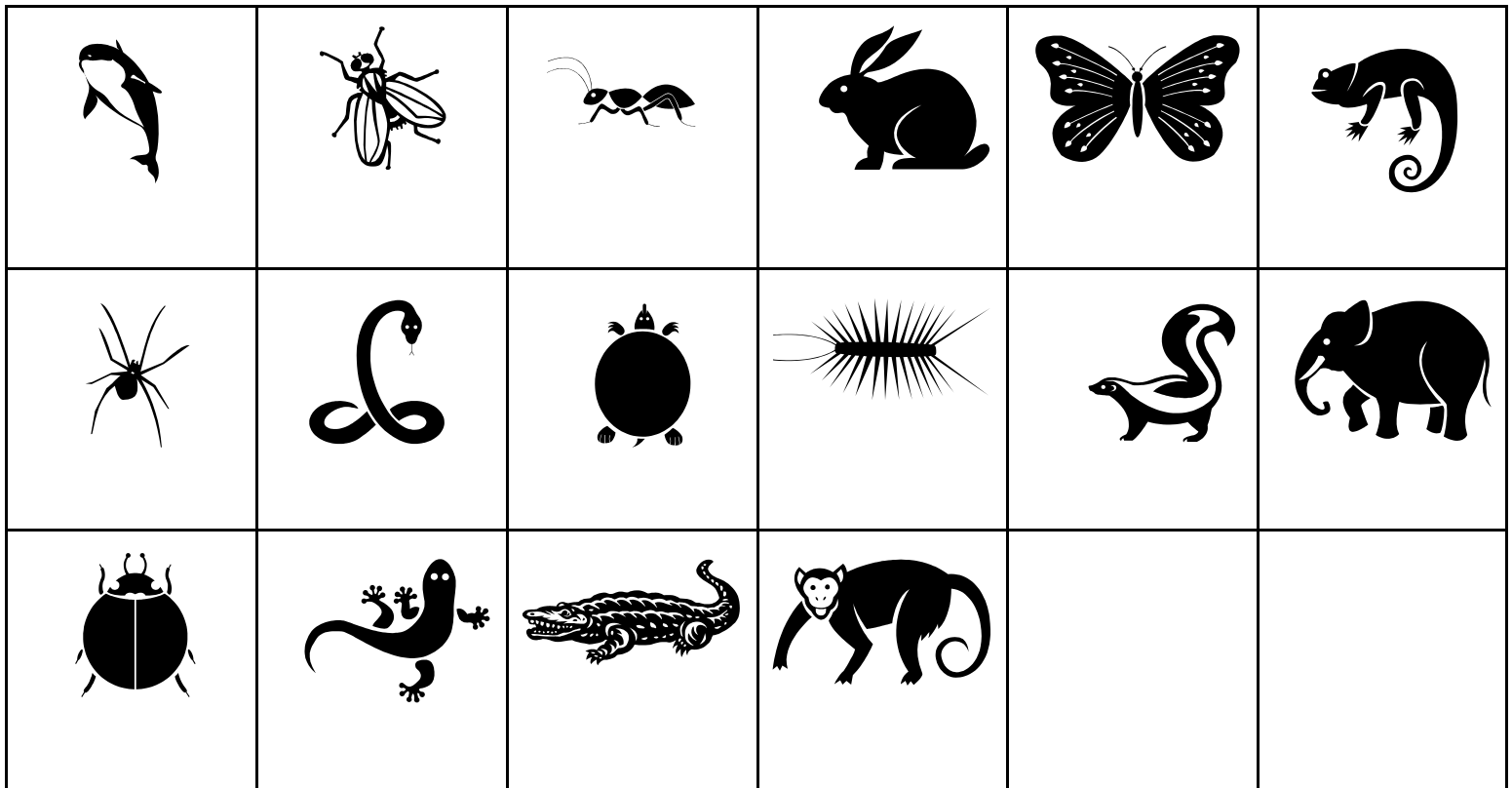
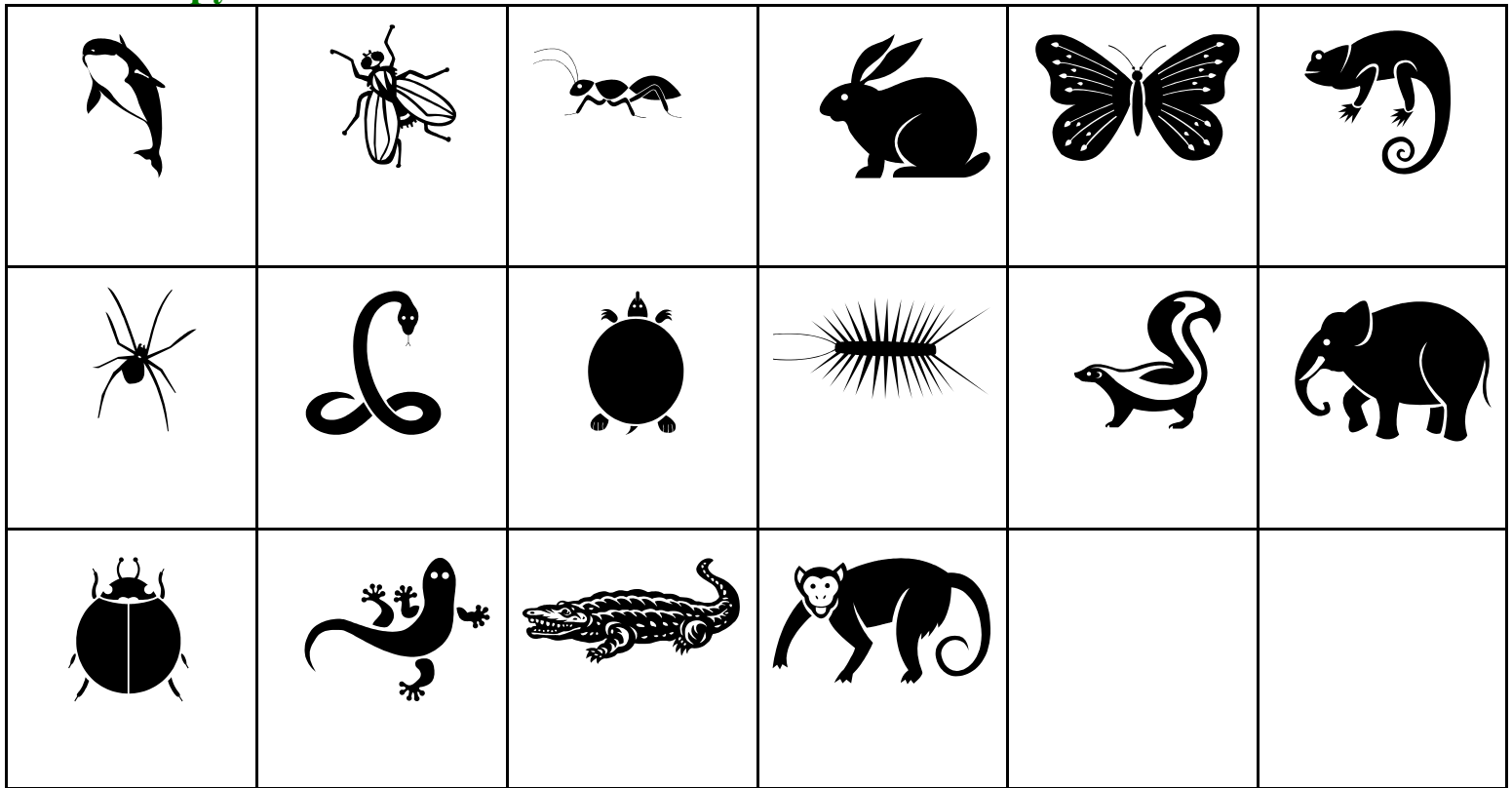
Grade 2 LSactivity001 covers:

LS1: identify and describe the major physical characteristic of different types of animals (eg. mammals, reptiles, insects)

LS3: classify a variety of animals using observable characteristics (eg. size, body covering, teeth).

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**\*\*Photocopy for students.\*\***



**(whale, fly, ant, rabbit, butterfly, iguana, spider, snake, sea turtle, millipede, skunk, elephant, ladybug, salamander, alligator, monkey)**

# Growth and Changes in Animals

## Life Cycles



As a class let's watch Magic School Bus: Inside a Beehive.

**\*\*The book is a good substitute.\*\***

Write down some interesting facts about the life cycle of bees:

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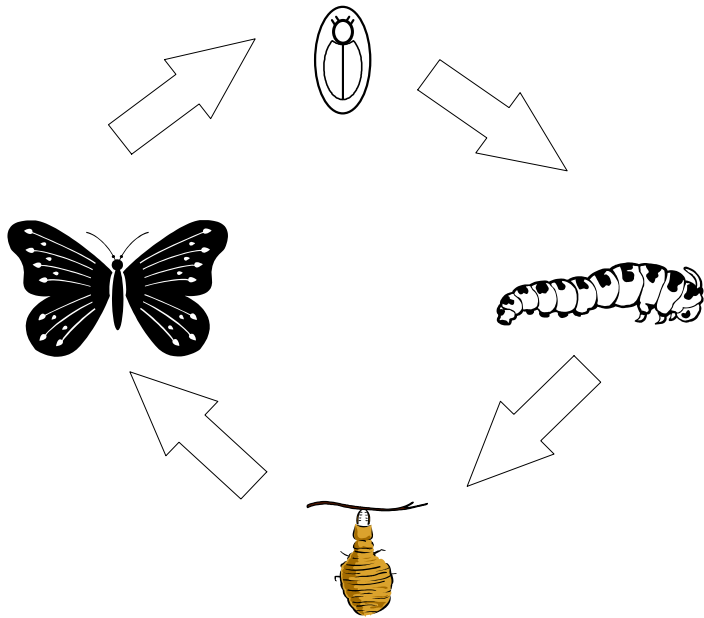
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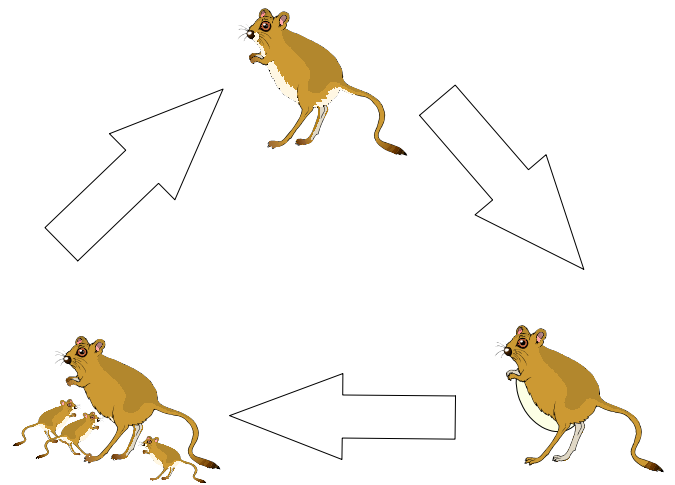
As a class let's read The Hungry Caterpillar, by Eric Carle.

Label the life cycle of the butterfly below:



*The life cycle of a butterfly goes through the stages of egg, caterpillar or larva, chrysalis in a cocoon and then finally an adult or butterfly.*

Let's label the life cycle of a gerbil:



*The life cycle of a gerbil is adult, pregnant adult, have baby gerbils, and baby gerbils grow up to become an adult.*

How are the life cycles of the bee and butterfly similar?

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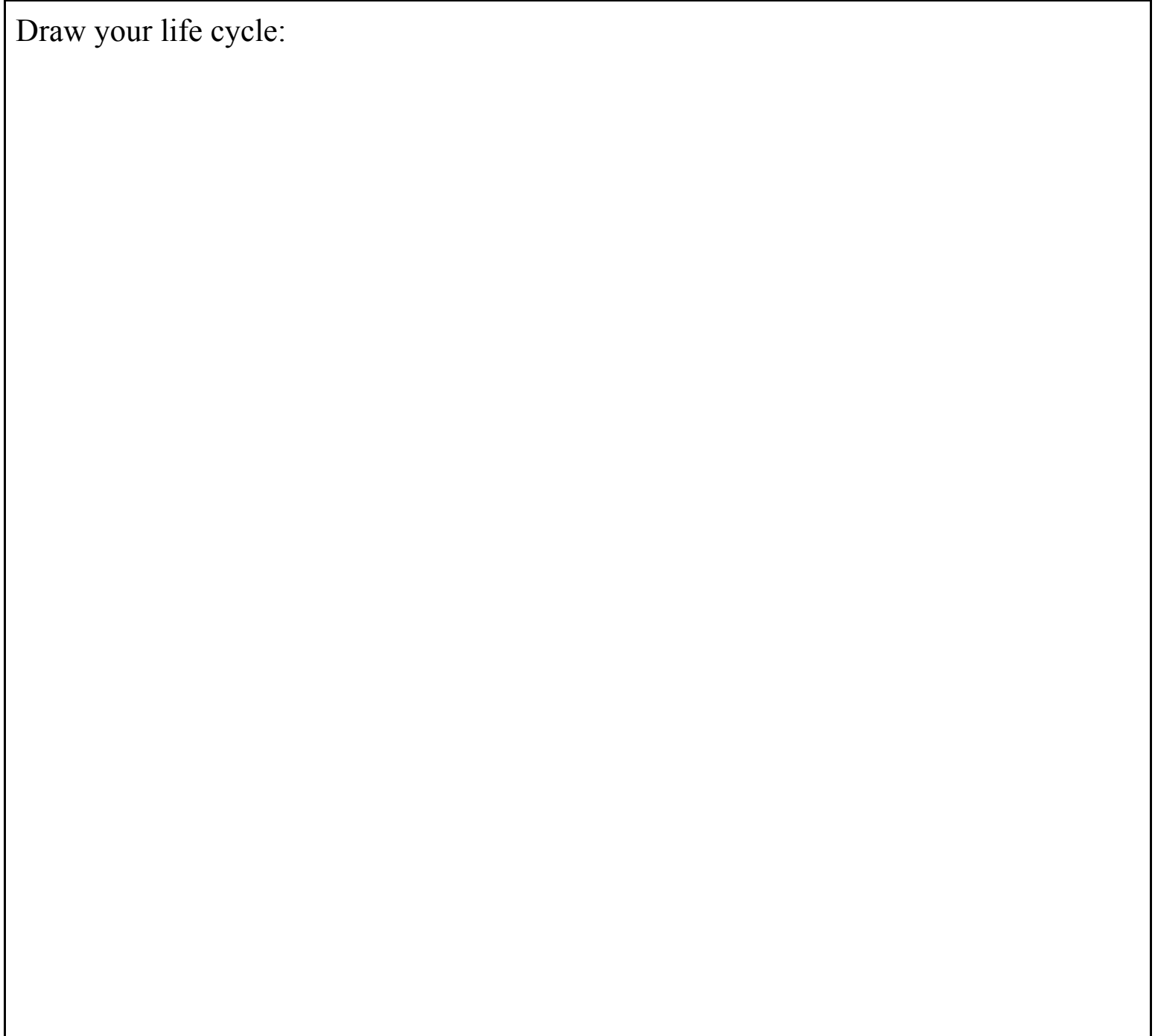
How are the life cycles of the gerbil and butterfly different?

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Draw your life cycle:



Grade 2 LSactivity002 covers:

LS6:compare the life cycles of some animals that have similar life cycles (eg. bee and butterfly) and some that have different life cycles (eg. gerbil and butterfly)

LS12:use appropriate vocabulary in describing their investigations, explorations, and observations (eg. use the words egg, caterpillar, larva, chrysalis, and adult in describing the metamorphosis of a butterfly)

LS13:record relevant observations, findings, and measurements, using written language, drawings, and concrete materials (eg. make accurately labelled drawings showing the life cycle of an animal)

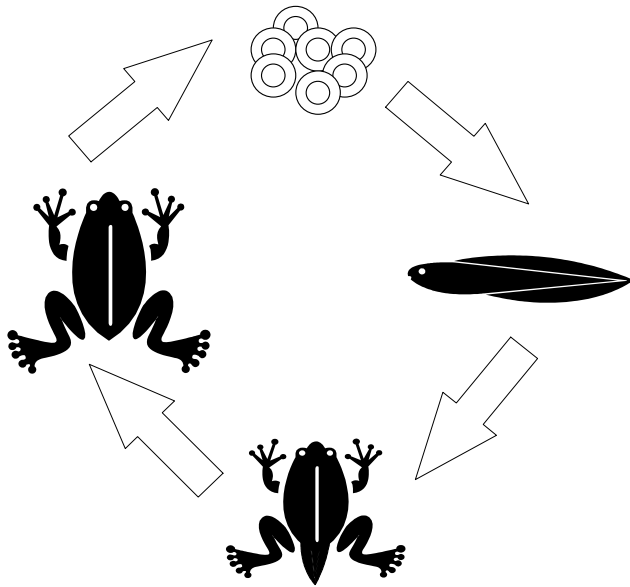
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# Growth and Changes in Animals

## The Frog

Let's label the life cycle of a frog:



*The life cycle of a frog goes through the stages of eggs, tadpole (tadpole with legs not shown), froglet, adult frog.*

What are the changes that a frog's body goes through while it's growing up:

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*The frog becomes bigger, it grows legs and it loses a tail.*



What does a tadpole do:

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What does a frog do:

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Grade 2 LSactivity003 covers:

LS5: describe changes in the appearance and activity of an animal as it goes through a complete life cycle (eg. mealworm)



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# Growth and Changes in Animals

## What we need to grow up

What do frogs need to grow up? _____ _____ _____ _____	What do you need to grow up? _____ _____ _____ _____
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	What changes when a frog grows up? _____ _____ _____
	What stays the same? _____ _____ _____

Draw a picture of you as a baby:	What changes when you grow up? _____ _____ _____
Draw a picture of you as an adult:	What stays the same? _____ _____ _____



# Growth and Changes in Animals




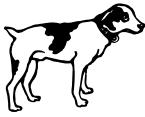



## Animals and their Environments

Animals have special tricks to help them survive during certain seasons. These special tricks are called adaptations.

As a class let's watch Magic School Bus: All dried up and Magic School Bus: In the Arctic.

**\*\* The books are good substitutes.\*\***

Let's fill out the chart below:

Animal	Adaptation
	<i>Iguanas have the ability to change their colour of skin to camouflage themselves against predators.</i>
	<i>The weasel's fur changes colour for camouflage in summer and winter.</i>
	<i>Polar bears have black skin to absorb the heat from the sun in the winter, and white fur to reflect the heat from the sun in the summer. Their fur is also very long for warmth in the winter.</i>
	<i>A dog will shed its fur in late spring to be cooler in the summer's heat.</i>
	<i>A bird migrates south to warmer temperatures during the winter.</i>
	<i>A bear hibernates during the winter so that less energy and food is needed to survive during the winter, when there is little food available.</i>
	<i>Mosquitos become dormant during the winter.</i>

Grade 2 LSactivity005 covers:

LS2: identify and describe behaviour characteristics that enable animals to survive (eg. migration, dormancy, hibernation)

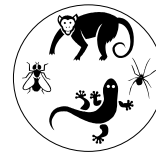
LS8: describe ways in which animals respond and adapt to their environment (eg. weasels change colour for camouflage in summer and winter; mammals living in colder climates have longer fur)

LS16: identify and compare the effects of the seasons on animals (eg. some animals grow a thicker coat in cold weather)

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# Growth and Changes in Animals

## The Teeth of It



**\*\* With white fimo or crayola model magic make examples of the three types of teeth; carnivorous, omnivorous and herbivorous. Carnivores have sharp triangular type teeth, like wolves or sharks. In fact, if you are ever south, some shops sell shark's teeth as souvenirs. Herbivores have square flat teeth, like cows, horses and the brontosaurus. Omnivores have a variety of these teeth, like us. As students lose their teeth they could describe them as tearing teeth (the incisors) or grinding teeth (molars).\*\***

Carnivorous teeth look like:	Herbivorous teeth look like:	Omnivorous teeth look like:
Describe the teeth: _____ _____ _____	Describe the teeth: _____ _____ _____	Describe the teeth: _____ _____ _____
How do carnivores eat their food: _____ _____ _____	How do herbivores eat their food: _____ _____ _____	How do omnivores eat their food: _____ _____ _____

Beaver's teeth never stop growing! They never get too long though, because beavers are always wearing their teeth away by cutting down trees with them. They use these trees to build their homes in ponds. Draw a beaver making its dam below:

Grade 2 LSactivity006 covers:

LS4:compare ways in which animals eat their food (eg. tear flesh, crack shells), move, and use their environment to meet their needs (eg. gather grass and twigs to build nests)

LS10:ask questions about and identify some needs of different animals with which they are familiar, and explore possible answers to these questions and ways of meeting these needs (eg. examine different kinds of teeth and explain how their shape enables an animal to bite, tear, or grind its food)

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# Growth and Changes in Animals

## The Very Hungry Caterpillar

As a class let's read The Very Hungry Caterpillar, by Eric Carle.

- Materials:
- 1) a tree branch
  - 2) green construction paper
  - 3) crayola model magic
  - 4) glue gun

- Method:
- 1) With the Crayola model magic, create your own special caterpillar.
  - 2) Make leaves out of the green construction paper.
  - 3) Glue the leaves and your new special caterpillar friend to the tree branch.

Write a story about your very hungry caterpillar:

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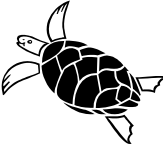
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# Growth and Changes in Animals

## Mama Mia!

Animal	Information
	<p>A mommy bear has 1 to 4 babies during the winter. The baby bears have no fur, they are blind and they are less than 2 kg. They stay with their mom until they are 3 years old.</p>
	<p>Alligators lay eggs in a nest of mud and dead leaves. After 9 weeks the mother alligator returns to the nest to help the baby alligators out of the nest. The baby alligators are able to defend and feed themselves, and spend no more time with their mothers.</p>
	<p>Human mommies usually give birth to their children in hospitals. Human children live with their parents for a long time while they're growing up, playing with friends and going to school. A human is considered an adult when they turn 18.</p>
	<p>The sea turtle mommy chooses a sunny spot on the beach and digs a hole in the sand. She lays her eggs in that hole. The sea turtle mother never returns.</p>

With the information above let's graph how long each animal spends with their parents:

(In years)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Bears																		
Alligators																		
Humans																		
Sea Turtles																		



## Growth and Changes in Animals Going to the Pet Store

Imagine that you're at a pet store and that you can pick whatever animal you want!

**\*\* Select appropriate books in the classroom for students to do research, help them do research on the internet, and encourage them to do research at home with their parents.\*\***

Draw your new pet here:

How are you going to take care of your new pet:

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What kind of food does your new pet eat?

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Grade 2 LSactivity009 covers:

LS18:demonstrate an understanding of the requirements of small animals for survival (eg. by maintaining an aquarium or a terrarium)

LS20:demonstrate awareness of ways of caring for animals properly (eg. avoid handling them too much; research nutritional requirements)

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# Growth and Changes in Animals

## Old McDonald had a farm, EI EI Oh!

**\*\* Sing Old McDonald.\*\***

Draw a picture of a farm:

How does the farmer take care of his animals?

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How do these animals help us?

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# Growth and Changes in Animals

## Endangered Species

As a class let's read Voices from the Wild, by David Bouchard and illustrated by Ron Parker.

What does endangered species mean?

**\*\* Discuss as a class, then write down the definition. This can be developed through the discussion or consolidated with the definition below.\*\***


Endangered Species: *Any species of plant or animal that may become extinct because there are so few of them living today.*

Do you know of any animals that are extinct? *Dinosaurs*

Do you know of any animals that are endangered today?

*Examples are: the tiger, the blue whales, the panda, the beluga whales, the gorillas, etc. You can always get an up to date list from the World Wildlife Foundation (WWF).*

As a class let's make a list of how we can help save endangered animals. Write the list on your special notepad below:



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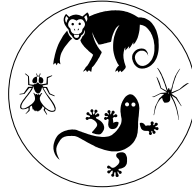
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## Animals Certificate

This certificate hereby certifies

\_\_\_\_\_

as a Grade 2 Animal expert.

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Teacher

Share your science booklet with at least one family member at home. After you have shared complete the following:

- 1) Cut out your Animal Certificate.
- 2) Get the person you shared your science booklet with to fill out the form below, detach it and bring it back to school.

C .....

\_\_\_\_\_ shared their science booklet with the following family members:

\_\_\_\_\_  
Parent's Signature



# Growth and Changes in Animals Homework

Name: \_\_\_\_\_

DUE: \_\_\_\_\_

Congratulations! You've been hired as a zoologist. Your first assignment is to observe an animal. This observation could be done at home with a pet, nearby with a friend's pet, on a farm or at a zoo. Afterwards, fill out the chart below with information about what your animal eats, how much they sleep, and what they do for exercise.

My animal is _____.
My animal eats _____ _____ _____ _____
My animal's rest and sleep patterns are _____ _____ _____ _____
My animal gets exercise by _____ _____ _____ _____

Grade 2 LShomework covers:

LS19: describe the life processes of an animal that they have observed (eg. the eating habits, movement, rest patterns, and breathing of a mealworm)

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