2nd Grade Life Science Curriculum Map
Growth & Change in Animals

The eight lessons fall under eight topics that relate to aspects of life systems: Growth and Change in Animals.

In each section you will find teacher notes designed to provide you guidance with the learning intention, the success criteria, materials needed, a lesson outline, as well as provide some insight on what results to expect when the experiments are conducted.

Suggestions for differentiation are also included so that all students can be successful in the learning environment.

Eight Topics Include:

Lesson One: Invertebrates

Students will learn about the different types of invertebrates and their physical characteristics.

Lesson Two: A Study of Invertebrates

Students will learn about the behavioral characteristics of invertebrates, through research and through compare and contrast.

Lesson Three: Birds

Students will learn about the physical characteristics of birds, make comparisons between birds in flight, and research to learn more about bird behavior.

Lesson Four: Fish

Students will learn about the physical characteristics of fish, and research to learn more about fish behavior.

Lesson Five: Reptiles and Amphibians

Students will learn about the physical characteristics of reptiles and amphibians, and research to learn more about a reptile or an amphibian.

Lesson Six: Mammals

Students will learn about the different categories of mammals and their physical characteristics; then research to learn more about a mammal of their choice.

Lesson Seven: Life Cycles

Students will learn about the life cycle stages of different animals.

Lesson Seven: Life Cycle Template Google Slides Activity

Each set of cards shows five stages of development except for the Sea Turtle, which shows four stages.

Students will learn about the life cycle of these five species:

1. horse
2. monarch butterfly
3. frog
4. chicken
5. sea turtle

The template can be used as a hands-on activity to determine how well a student understands the animal life cycle process. Great for visual learners. The clear, straightforward presentation of essential facts, the colorful, highly visual elements, and the hands-on activities will capture the interest of students with a variety of learning styles and skill levels. The links direct you to the google slide activities. Students will drag and drop the pictures and text into the correct order showing the stages of development. The PDF includes photo cards and templates, that can be printed and used as manipulative for in-class activities.

Lesson Eight: Co-Existing

Students will learn about how animals and humans co-exist on Earth and how they depend on each other for survival.

Meets the New 2022 Grade 2 Ontario Science Curriculum.

BIRDS

Learning Intention:

Students will learn about the physical characteristics of birds, make comparisons between birds in flight, and research to learn more about bird behavior.

Success Criteria:

- recognize the physical characteristics of different birds
- make observations of different birds in flight and record results in a chart
- choosing a bird to research, describe changes in its appearance as it grows
- describe where it lives, what it eats, how it moves, how it cares for its young
- display all information using pictures and written descriptions
- research and orally share one interesting fact about a bird

Materials Needed:

- a copy of "Birds" worksheet 1, 2, and 3 for each student
- a copy of "On a Bird Watch" worksheet 4 and 5 for each student
- a copy of "Going on a Bird Study!" worksheet 6, 7, 8, and 9 for each student
- a stopwatch and a clipboard for each student
- access to the internet or local library, pencils, pencil crayons
- sheets of art paper, paint, and paint brushes *(optional materials)*

Procedure:

***This lesson can be done as one long lesson, or be divided into four shorter lessons.**

1. Using worksheets 1, 2, and 3, do a shared reading activity with the students. This will allow for reading practice and breaking down of the larger words. Along with content, discussion of some vocabulary would be beneficial for comprehension.

   Some interesting vocabulary words to focus on are:

   - climates
   - beaks
   - hollow
   - clawed feet
   - adapted
   - skeleton
   - birds of prey
   - talons
   - vertebrate
   - swallow
   - hatch
   - migrate
   - scoop
   - glide
   - webbed feet

2. Explain to students that they will go on a bird watching exploration in order to spot, time, and compare the flight capabilities of different birds in the neighbourhood. Give students worksheets 4 and 5, and a clipboard and pencil. After spending some time bird watching and recording flight results of different birds, students will work with a partner to discuss any interesting findings about the flight potential of different birds.
3. Give students worksheet 6. They will list 5 insects that they know, and then compare their list with a classmate's. They will choose one bird from their list to study.
4. Give students worksheets 7, 8, and 9. With access to the internet or by visiting a local library, students will find out more about the physical appearance of the bird they choose and what it looked like upon hatching. They will also need to find out what it eats, the ways it moves, how it cares for its young, and add an interesting fact of their own.
5. A follow up option is to have students showcase their picture of their bird to the large group and orally share the information on their 'bird fact – did you know?' card.

Differentiation:

Slower learners may benefit by working as a small group with teacher support and direction to complete worksheets 7, 8, and 9. Choosing one bird, assign a section to each student in the group. Then they can share their findings with the small group in order to complete the worksheets. Omission of the fact card on worksheet 9 is an additional accommodation.

For enrichment, faster learners could paint a picture of their bird in its environment.

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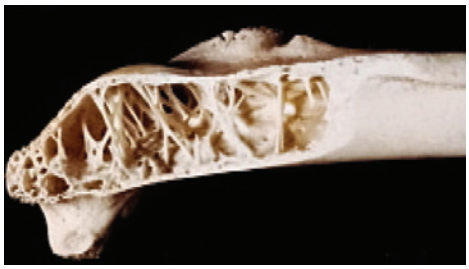
Name:

Birds

Did you know that there are about 10 000 different kinds of birds in the world? They live all over the world, on almost every piece of land and in all climates. Some birds **migrate** from place to place. Other birds live in the same place year round.



Birds are **vertebrate** animals. This means they have a skeleton on the inside of their body.

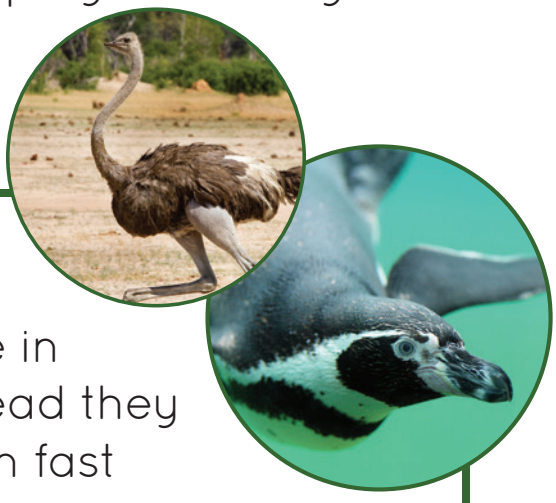
The inside of their bones are filled with tiny air sacs and their bones are hollow too. This makes them light enough to fly.

The feathers on birds keep them warm and they also help them to fly. The feathers form the shape of their wings. They can fold their wings in or hold them out.

Birds get power and lift from beating their wings. Some birds can glide in the air without flapping their wings for long distances.

FAST FACT!

Some birds like the ostrich, do not fly. Instead they use their strong legs to run fast. Penguins, which live in the Antarctic, cannot fly either. Instead they use their wings as flippers and swim fast under water.



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All birds lay eggs. A young bird grows inside the egg until it is ready to **hatch**. Eggshells are very hard in large birds like the ostrich, but are very soft in small birds such as the robin.

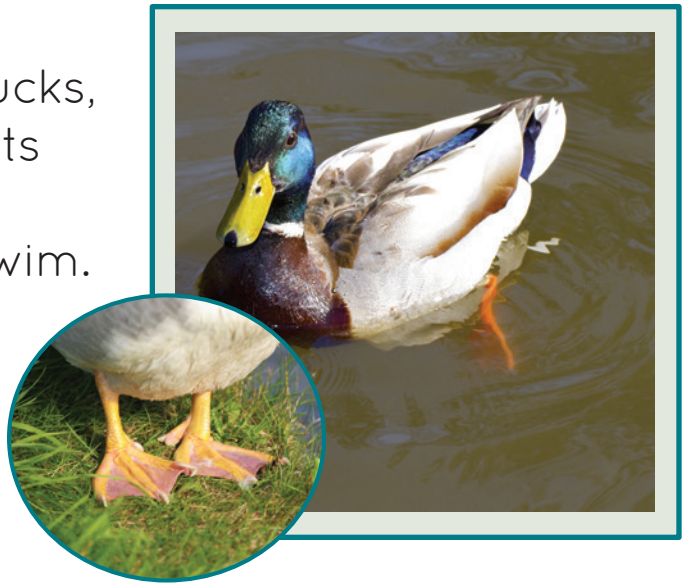
This mother robin has caught a worm to feed to her babies in the nest.

Young birds need a lot of care from their parents. The parent bird will catch insects and other food to feed it to their babies.

When baby birds are older and have grown feathers and strong wings, the parents teach them to fly. Then they are ready to catch their own food.

While some birds eat things such as insects or worms, other birds eat small animals like mice, snakes, and even fish too! These birds are called **birds of prey**. They have **talons**, which are clawed feet. Their feet are made for grabbing prey.

Other birds like loons and ducks, live on water. They eat insects and fish. These birds have **webbed feet** to help them swim.



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Name:

A bird's mouth is **adapted** to what it eats. For example, birds of prey have sharp hooked **beaks** to catch and eat their prey. Did you know that the beak of an eagle is made of keratin? It is always growing, just like the fingernails of a human!

Some birds, like the swallow, have large mouths but small beaks. These birds can catch insects while flying with their mouths open!

Some birds have sharp beaks adapted for biting seeds and cracking shells, like this parrot.

Some birds, like the pelican have large mouths. They scoop up small fish, and swallow them whole.

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On a Bird Watch

Do you know how long it takes a bird to go from land to air? Well, each bird is different. Do a bird study to find out more. Let's get into nature!

You'll need:

- a copy of "On a Bird Watch" worksheet
- a clipboard
- a pencil
- a stopwatch

What to do:

1. Outside, look around for birds that are ready to fly into the air. When you see one, watch it carefully. When you see a bird taking off, hit the "start" button on the stopwatch. Stop timing when the bird gets into the sky.
2. On worksheet 5, record the kind of bird and the time that the bird took to get into the air.
3. Repeat steps 1 and 2, looking for 2 other birds.
4. Compare your notes with a partner. What do you notice?

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Let's Observe

Birds	Time in Flight	Notes About This Bird
Bird #1		
Bird #2		
Bird #3		

Compare notes with a partner. What is interesting?

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Going on a Bird Study!

1. List 5 birds that you know:

- _____
- _____
- _____
- _____
- _____
- _____

2. Compare your list with a classmate's list. Name 2 birds from their list that are not on yours.

- _____
- _____
- _____
- _____

3. Circle ***one*** bird from the lists above that you want to learn more about.

What do you wonder about this bird?

_____

_____

_____

_____

_____

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Name:

In the box, draw a picture of your bird that shows where it lives.

Draw what your bird looked like when it hatched as a baby from its egg.

How has it changed from when it hatched to now?

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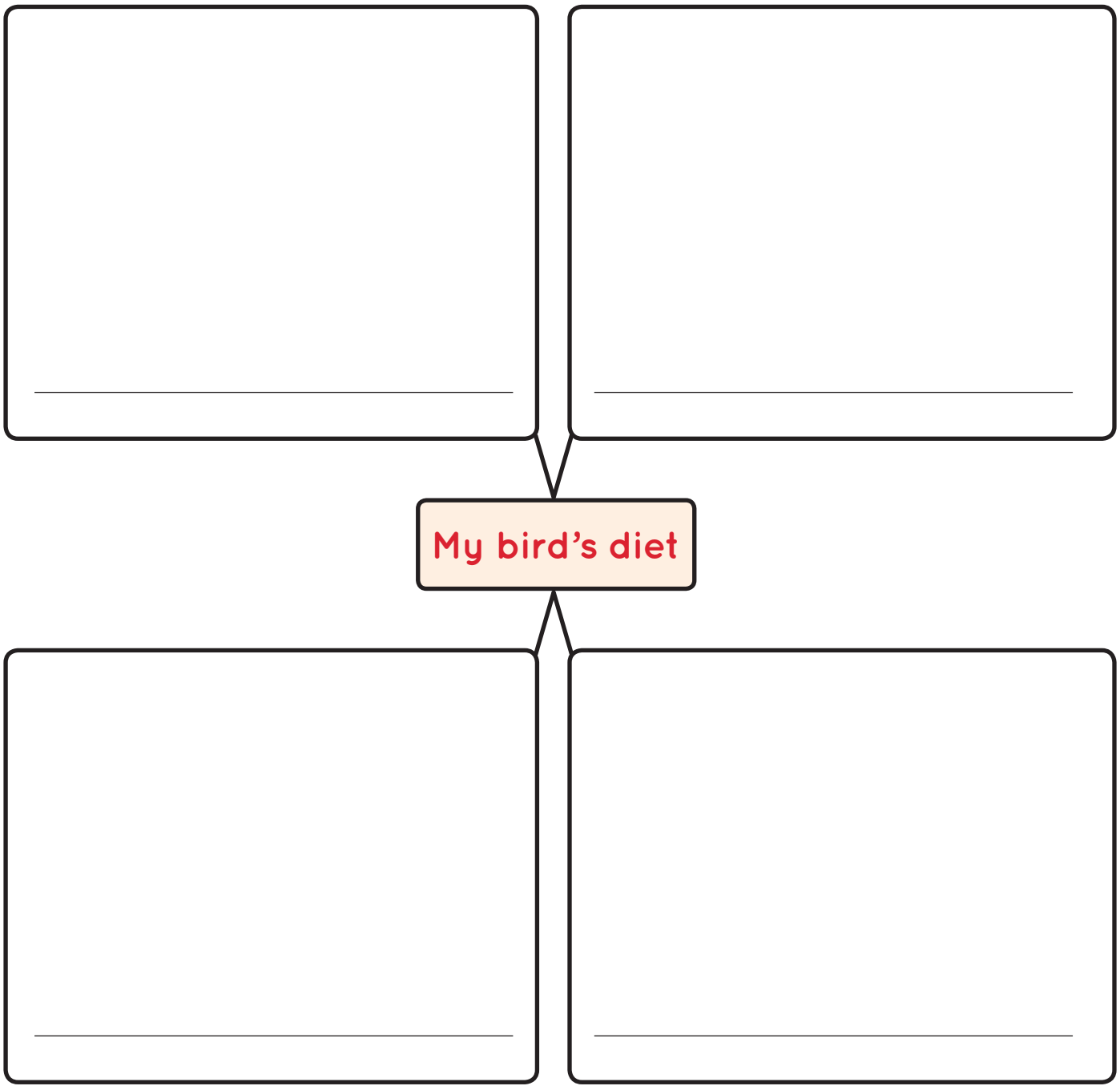
Name:

Draw pictures of some things that your bird likes to eat. Label them.



Circle all the ways that your bird moves.

fly swim walk run

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Name:

Tell about some things that your bird does to care for its babies.

- _____

- _____

- _____

Make a fact card about your bird.

DID YOU KNOW?

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