

Comparing and Contrasting Birds

Activity Package

Encourage observation of the natural world and complement your museum visit with this multi-part activity package ideal for grades 6 to 8. These activities will help you observe birds in nature and compare them to birds seen during a museum visit with your group to jumpstart a research project to be completed after your visit. This package includes pre and post-visit instructions as well as printable templates, vocabulary lists and worksheets.

Curriculum Links	1
Suggested Materials	2
Before and After the Activity	3
Vocabulary List.....	5
Parts of a Bird Handout	6
Template A.....	7
Template B	8
Template C.....	9
References	10

Curriculum Links

Grade 6 Science:

- Multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment.
- Identify patterns and connections in data

Grade 7 Science:

- Evolution by natural selection provides an explanation for the diversity and survival of living things
- Survival needs and interactions between organisms and the environment
- Seek patterns and connections in data from their own investigations and secondary sources
- Use scientific understandings to identify relationships and draw conclusions
- Demonstrate an understanding and appreciation of evidence (qualitative and quantitative)

Grade 8 Science:

- Use scientific understandings to identify relationships and draw conclusions
- Experience and interpret the local environment
- Seek patterns and connections in data from their own investigations and secondary sources
- Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate

Suggested Materials

- Bird diagram handout
- Template A, B and C (below)
- Writing tools (pencil, pen, eraser)
- Laptop or computer for internet access
- Large poster board or tri-fold poster board
- Drawing paper
- Sketching materials
- Charcoal of different sizes
- Blending stumps or tortillons
- Variety sized erasers
- Coloured pencils or pencil crayons
- Flour clay, homemade play dough, air-dry clay, or fimo effect polymer clay
- Thin paint brushes
- Paint tray
- Acrylic craft paints in assorted colors
- Optional: camera or smartphone
- Optional: clear spray acrylic

Before the Activity

1. Introduce and hand out the bird diagram and *Template A* included in this activity package.
2. Go on a nature walk with your group, or encourage your group to observe the characteristics of different birds in their own neighbourhood or a local park.
3. The students should note the general appearance of the birds they see, including approximate size, observable colour(s), shape, beak size, behaviour.
4. Challenge your group by asking them to hypothesize the name for the bird they spotted.
5. Students should note several bird types that they see (to ensure that they have a variety to choose from in case they can't identify the name of the ones they saw).
 - a. Note: students should focus on describing the birds rather than being preoccupied with having the terms / parts of bird correct. The diagram handout is there simply as a guide.
6. At home, students will narrow down their research on one type of bird that they found during their walk. Students will fill out the *Neighbourhood Bird* column of *Template B*.
 - a. Note: for a review on credible sources, you may want to have your students read:
 - i. Purdue Owl (2017). Using Research and Evidence. Retrieved from <https://owl.english.purdue.edu/owl/resource/588/02/>
 - ii. University of California Santa Cruz (2017). Evaluate the quality and credibility of your sources. Retrieved from <http://library.ucsc.edu/help/research/evaluate-the-quality-and-credibility-of-your-sources>

After the Activity

1. Print and hand out *Template C* for your visit the museum with your group.
2. When observing the birds displayed in the tetrapod collection, ask your group to make note of *three different bird species* that stand out to them. They will compare and contrast the bird spotted in their neighbourhood to the ones they see in the museum using *Template C*.
3. Ask students to make note of any information they can find about the museum birds they have chosen.
 - a. Examples of helpful details to note include:
 - i. Species name
 - ii. Appearance
 - iii. Estimated size
 - iv. Egg size
 - b. They may take photos of the specimens so that they can refer to it when they work at home.

4. Students must choose one bird species found at the museum to extend their research at home or during class time.
 - a. Note: this species should be different from the one they observed in their neighbourhood
 - b. Students should fill out the *Museum/New Bird* column of *Template B*
5. Using the information from their neighbourhood walk, their museum visit and extended research supported by the templates provided, students will create a poster project diagram of the similarities and differences between the two birds
6. Part of the poster project diagram is a detailed, life-sized drawing of the chosen birds with labels. Physical characteristics and labels of the bird parts must be accurate. Students may use the bird diagrams to help them in labelling.
 - a. Note: you may choose to extend this activity by asking students to create realistic clay models of their chosen birds painted with accurate colours using acrylic paint once the clay hardens

Vocabulary

Appearance: the way that something or someone looks

Beak: the pointed or hard curved part of a bird's mouth

Behaviour: An observable reaction or response made by an individual or organism, or a system to a situation

Bill: a bird's beak

Characteristics: a distinctive feature, mark, trait, attribute, or quality that distinguishes an individual, thing, or organism

Collar: the area around a bird's neck that is of a different colour from the rest of its body

Comb: the red, thin piece of flesh that grows on the head of some birds, especially male chickens

Endangered: any plant, organism, or animal species that is at risk of becoming extinct due to a sudden rapid population decrease or a loss of critical habitat

Existence: continued survival. The state of being or existing

Extinction: when a species dies out or terminates due to a variety of reasons such as environmental forces (global change, habitat fragmentation, human overexploitation of species) or due to evolutionary changes within the species (poor reproduction, population decline, genetic inbreeding)

Feather: covers a bird's body and consists of narrow tubes with soft, thin hairs on each side

Habitat: The place (location or environment) where a biological population, community or an organism resides in or occurs. The species will strive to be as adaptive as possible to that environment

Lifespan: how long (or the duration) that an individual or organism lives. The average life duration of members of a given species

Mandible: the bottom or top section of a bird's beak

Nature: the features or qualities that something has

Organism: Any living thing that grows, reproduces, reacts to stimuli, and maintains homeostasis. It consists of bacterium, virus, fungus, protist, animal or plant

Predators: Animals or organisms that live by preying upon other organisms for food and survival

Prey: the animal or organism being hunted and eaten

Ruff: the feathers or fur that grow around an animal or birds' neck

Spur: a sharp, curved segment behind a bird's leg

Talon: one of the sharp nails on some birds' feet which is used to kill other animals for their food and survival

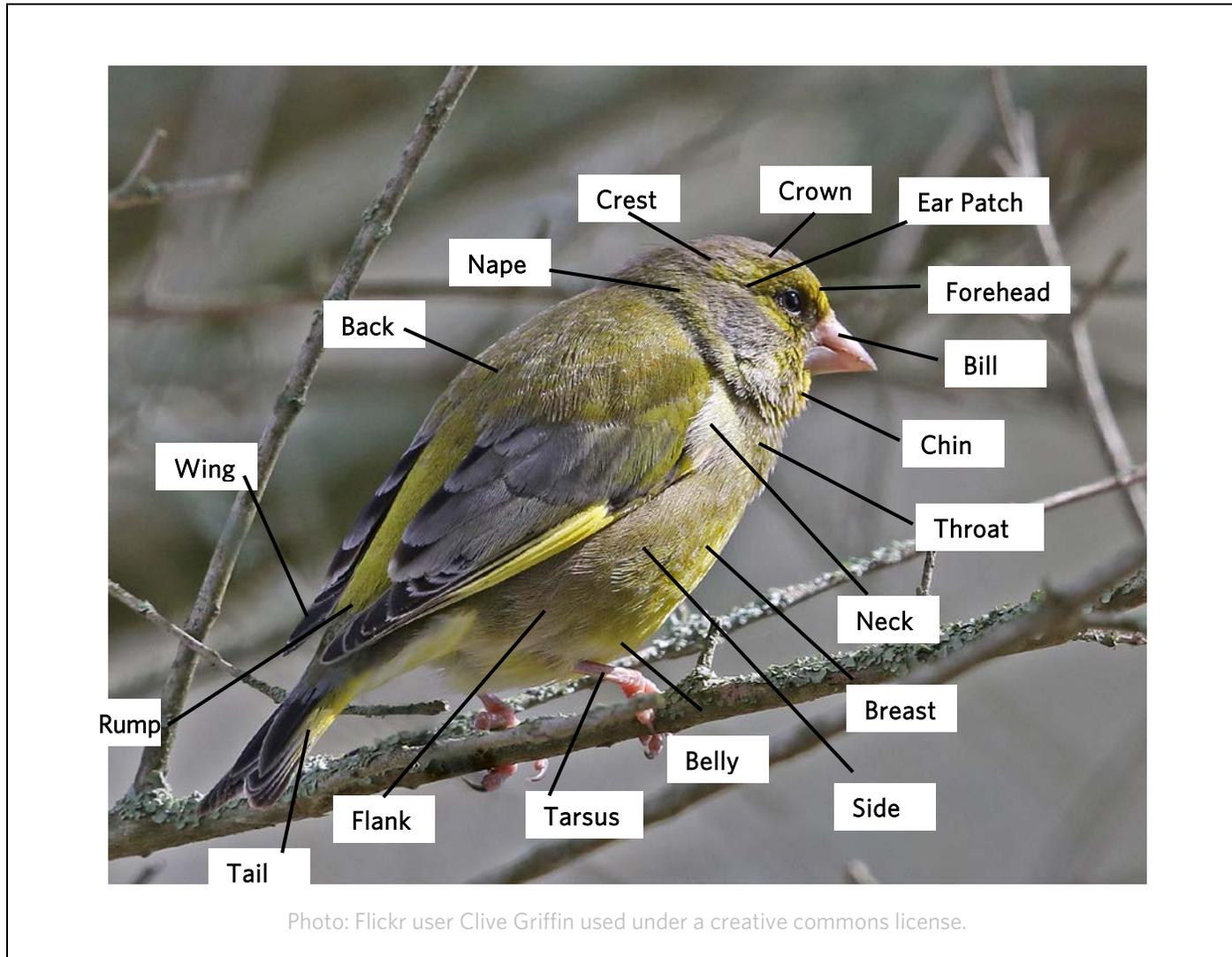
Wattle: a piece of skin that hangs from either the neck of some birds or the skin

Web: the thin layer of skin found in between the toes of some animals and birds which helps them to swim

Wing: one part of a bird that moves up and down and allows it to fly. Birds have 2 wings

Wingtip: the point at the edge of the bird wing

Parts of a Bird



Template A

Name: _____

Bird(s) Spotted in My Surroundings



	Bird 1	Bird 2	Bird 3
Hypothesized name			
Estimated size of bird (in centimeters)			
Colour(s)			
Beak size			
Behaviour			
Location found			

Template B

Name: _____

Chosen Neighbourhood Bird Vs. Museum Bird

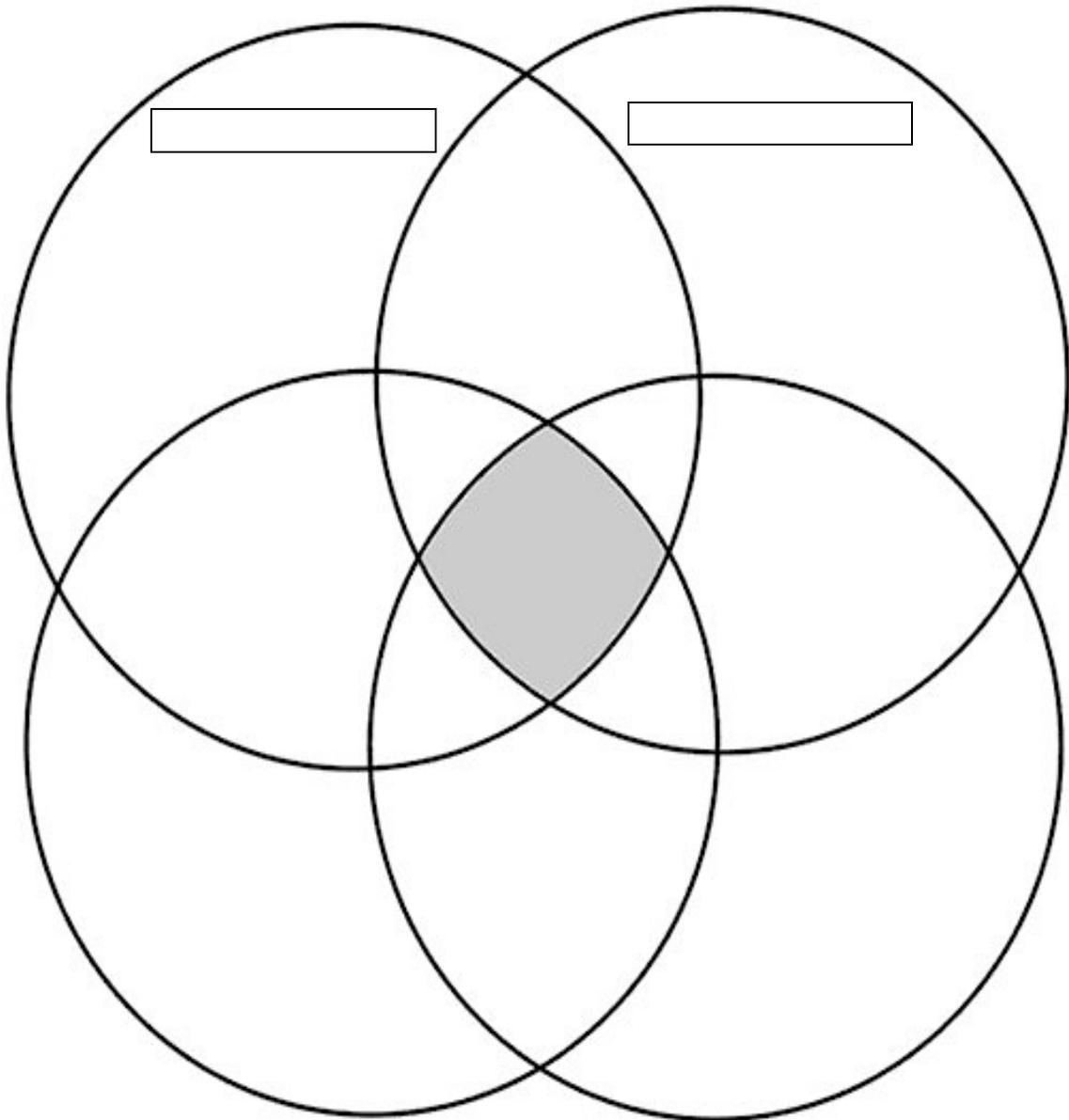
	Neighbourhood Bird	Museum / New Bird
Organism name (common and Latin names)		
Habitat/Location - where it was found		
Appearance (size, colour, physical features)		
Behaviour		
Lifespan (average years of survival) and how long the species has existed		
Diet		
Predators & Prey		
Unique characteristics		
Egg type / Appearance / Size		
3 Credible Sources		

Template C

Name: _____

Compare and Contrast Birds Diagram

**Note: take note of any information they can find on the museum birds (name, appearance, estimated bird size, egg size, species type)*



References

- Behaviour. (2015). Behaviour. Retrieved from <http://www.biology-online.org/dictionary/Behaviour>
- Biology-Online.org. (2009). Characteristics. Retrieved from <http://www.biology-online.org/dictionary/Existence>
- Biology-Online.org. (2005). Existence. Retrieved from <http://www.biology-online.org/dictionary/Existence>
- Biology-Online.org. (2005). Habitat. Retrieved from <http://www.biology-online.org/dictionary/Organism>
- Biology-Online.org. (2005). Lifespan. Retrieved from <http://www.biology-online.org/dictionary/Lifespan>
- Biology-Online.org. (2016). Organism. Retrieved from <http://www.biology-online.org/dictionary/Organism>
- Biology-Online.org. (2009). Predator. Retrieved from <http://www.biology-online.org/dictionary/Predator>
- Biology-Online.org. (2006). Prey. Retrieved from <http://www.biology-online.org/dictionary/Prey>
- Encyclopedia Britannica. (2017). Extinction. Retrieved from <https://www.britannica.com/science/extinction-biology>
- Encyclopedia Britannica. (2017). Endangered Species. Retrieved from <https://www.britannica.com/science/endangered-species>
- Google.com (n.d.) Existence. Retrieved from https://www.google.ca/?gfe_rd=cr&ei=H2tBWcqWHtTM8geVjpDwCg&gws_rd=ssl#q=existence+definition
- Longman. (n.d.). nature. Retrieved from <http://www.ldoceonline.com/Biology-topic/nature>
- Macmillan Dictionary. (2017). Parts of birds. Retrieved from <http://www.macmillandictionary.com/thesaurus-category/british/parts-of-birds>
- Merriam-Webster. (2017). appearance. Retrieved from <https://www.merriam-webster.com/dictionary/appearance>

Picture Citations

- Bird Identification [Online Image]. (2012). Retrieved June 9, 2017 from <https://upload.wikimedia.org/wikipedia/commons/2/27/Bird.parts.jpg>
- Computer Clip Art Free [Online Image]. (2017). Retrieved June 19, 2017 from <http://clipartall.com/clipart/9908-computer-clip-art-free.html>