

Amazing Adaptations



Specific Learning Outcomes

4-1-01: Use appropriate vocabulary related to their investigations of habitats and communities.

4-1-02: Recognize that each plant and animal depends on a specific habitat to meet its needs.

4-1-03: Identify the components of an animal habitat.

4-1-04: Identify physical and behavioural adaptations of animals and plants, and infer how these adaptations help them to survive in a specific habitat.

General Learning Outcomes

4-0-1a: Ask questions that lead to investigations of living things, objects, and events in the local environment.

4-0-4e: Identify problems as they arise, and work with others to find solutions.

4-0-4g: Communicate questions, ideas and intentions, and listen effectively to others during classroom-learning experiences.

4-0-7b: Identify new questions that arise from what was learned.

Vocabulary

wetland, habitat, food, water, living space, shelter, survival, physical adaptation, behavioural adaptation, community, plant, animal, predator, caching

Summary

Students are introduced to wetlands by exploring the physical and behavioural adaptations of animals and plants who live in a wetland habitat, investigating how these adaptations help these living things meet their needs in a wetland.

Materials

- *Print or project Animal & Plant Choices page*
- *Print activity sheets for each student (three in total, first two double-sided, then the third single-sided)*
- *Writing utensils*
- *Scissors*
- *Glue*

Procedure

Warm Up

Begin by asking students what the word 'adaptation' means when used in the context of nature and living things. Discuss various definitions, coming up with a definition the whole class agrees upon. Have students then list various examples of plant and animal adaptations, writing the examples on a board or easel pad. Introduce the idea that some adaptations are physical (structural features of a living thing, like a bill on a duck or fur on a bear, that help them survive), and some are behavioural (actions that living things do to survive, like migration or hiding). Have the class sort the examples listed into either physical or behavioural adaptations.

Activity

Explain that students will be exploring the physical and behavioural adaptations of plants and animals who live in a wetland habitat. A wetland is... (see note below). Wetlands cover almost half of Manitoba (41%), and are home to many different kinds of plant and animal communities.

A wetland is an area of land that holds shallow water, with a maximum depth of two metres. The water makes the soil very moist, so plants who need moist soils will grow in and around the water; this is why a wetland can not be deeper than two metres, because otherwise these kinds of plants drown and do not receive enough sunlight. The water moves slowly because there are so many plants that slow the water down, absorbing some of the water like a sponge and filtering it as it moves through.

Explain that each student will have an opportunity to apply what they know about adaptations in a sorting and matching activity.

Hand out activity sheets, writing utensils, scissors and glue. Each student should receive a double-sided activity page and a single-sided page which they will use to cut from.

Instruct students to 1) cut out the statements; 2) sort the statements, deciding which are behavioural adaptations, which are physical adaptations, and which are statements of how an adaptation assists a living thing in its survival; 3) Match each adaptation with the correct statement for how the adaptation assists a living thing in its survival; 4) From the Animal & Plant Choices page (which can be printed or projected) students then write down the plant and/or animal with the appropriate adaptation and its accompanying statement.

Note that some animals can be matched with several different adaptations, and that these various possible answers are included in the Teacher's Key.

Before students glue down their answers, go through the activity sheet with the class to review everyone's answers. Students can then have an opportunity to correct their answers if needed before they glue down their cut-out papers. Explain that there are multiple answers for some of these adaptations because plants and animals usually have more than just one adaptation to help them survive. It is therefore fine if students did not include all the possibilities for each adaptation, just as long as they have at least one answer per adaptation.

Wrap Up

Wrap up the activity by discussing how these adaptations would help a plant or an animal survive in a wetland habitat found in Manitoba.

Conclude by explaining that as a class you will be visiting a wetland called Oak Hammock Marsh where students will be exposed to different living things that are found in a wetland, including the plants and animals highlighted in this activity.

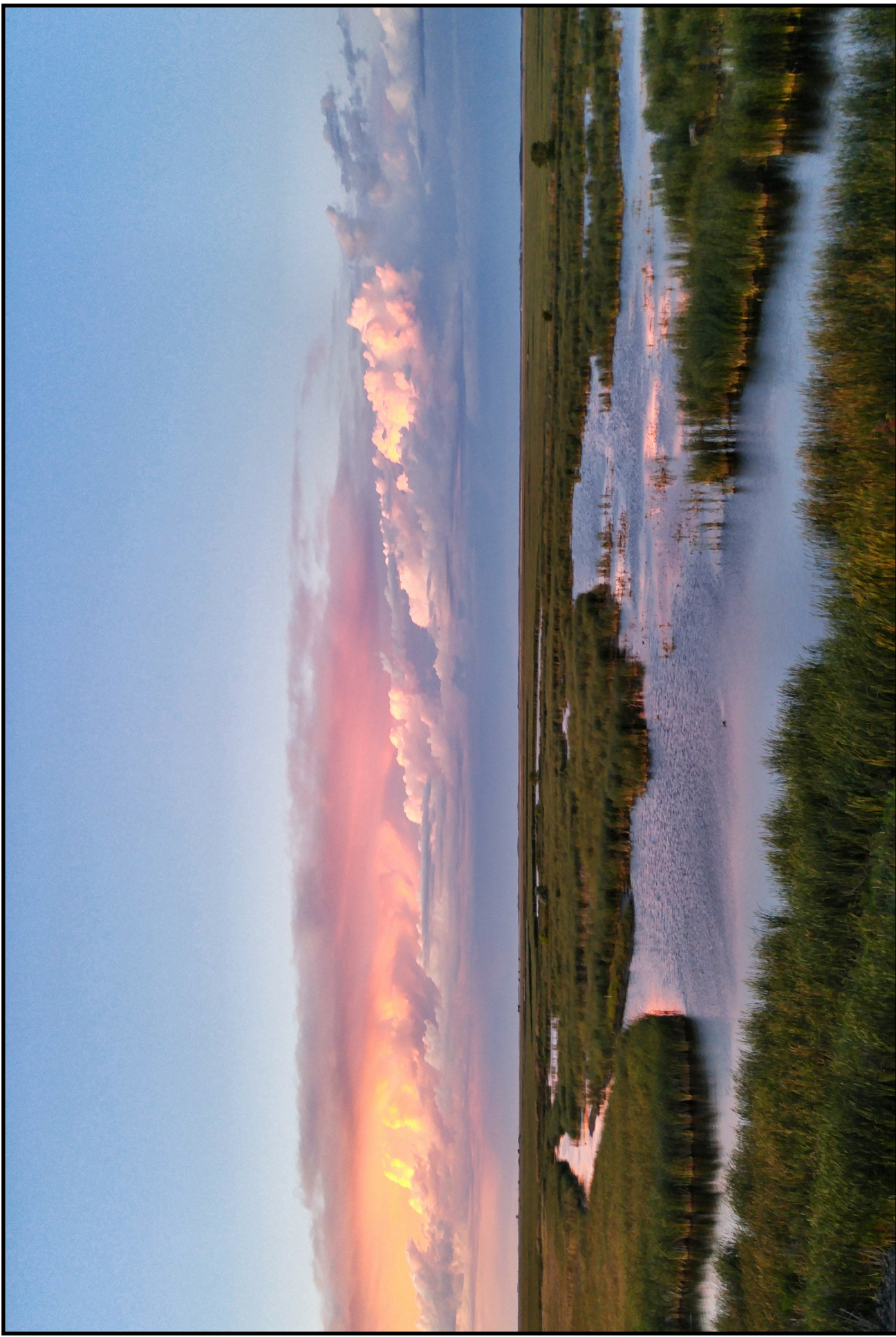
Note that although migration and hibernation are excellent examples of behavioural adaptations, we have purposely excluded these particular adaptations from this activity. We find these particular adaptations are more complex and so requires more explanation then can be provided with this activity.

Our programming offered at the centre can expand and enrich the students' understanding of more complex adaptations like migration, hibernation, torpor, etc. Contact us to discuss which program would best suit your needs, and the particular adaptations you wish your students to learn more about.

Wetland



Wetland





Amazing Adaptations - Animal & Plant Choices -

		
Milfoils	Coontails	Common Bladderworts
		
Ducks	Most Shorebirds	Black-capped Chickadees
		
Canada Geese	American Bitterns	Ermine (Short-tailed Wea-
		
Muskrats	Turtles	Dragonflies
		
Snakes	Ground Squirrels	Beavers
		
Northern Leopard Frogs	Pelicans	Blue Jays



Conserving
Canada's
Wetlands



Amazing Adaptations

Name: _____

Cut out the statements from the following page. First sort the statements, deciding which are behavioural adaptations, which are physical adaptations, and which are reasons why an adaptation assists a living thing in its survival. Second, match each adaptation with the correct reason for why the adaptation assists a living thing in its survival. Finally, match which plant and/or animal has which adaptation.

Physical Adaptation	How does this adaptation assist in survival?	Who has this adaptation?



Amazing Adaptations

Name: _____

Behavioural Adaptation	How does this adaptation assist in survival?	Who has this adaptation?



Cut in half, provides two sets of statements.

Winter bud	Water-proofing to keep them warm in cold water.
Sunning themselves	
Swaying in the wind	To find food to eat (water bugs that are hiding in the mud).
Standing guard while others eat	To become warmer.
Webbed Feet	
Oil Gland	Watching for predators so they can alert the others in the group of danger.
Caching (storing) food	
Highly sensitive, long bill	To camouflage (blend in) to its surroundings so it is not seen by predators who may eat them.
	To help them swim so they can feed or hide.
	To have something to eat when there is not a lot of food available, like during the winter.
	Adds weight to help them sink to the bottom of the wetland, to help it survive the winter.

Winter bud	Water-proofing to keep them warm in cold water.
Sunning themselves	
Swaying in the wind	To find food to eat (water bugs that are hiding in the mud).
Standing guard while others eat	To become warmer.
Webbed Feet	
Oil Gland	Watching for predators so they can alert the others in the group of danger.
Caching (storing) food	
Highly sensitive, long bill	To camouflage (blend in) to its surroundings so it is not seen by predators who may eat them.
	To help them swim so they can feed or hide.
	To have something to eat when there is not a lot of food available, like during the winter.
	Adds weight to help them sink to the bottom of the wetland, to help it survive the winter.



Amazing Adaptations

		Various Possible Answers	
Adaptation	How does this adaptation assist in survival?	Who has this adaptation?	
Physical Adaptation	Oil Gland	When spread it keeps fur/feathers dry which helps keep it warm.	Muskkrats; Beavers; Ducks; Geese; Pelicans
	Highly Sensitive, Long Bill	To find food to eat (like water bugs that are hiding in the mud or swimming in the water).	Most Shorebirds (like the Marbled Godwit); Ducks
	Webbed Feet	To help them swim so they can feed or hide.	Ducks (like the Northern Pintail); Pelicans; Canada Geese; beavers; muskrats; Northern Leopard Frogs; Turtles
	Winter Bud	Adds weight to help them sink to the bottom of the wetland, to help it survive the winter.	Common Bladderwort; Milfoil; Coontail
Behavioural Adaptation	Sunning themselves	To become warmer, so it can get moving again.	Snakes ; Turtles; Butterflies; Dragonflies; Leopard Frogs
	Caching (storing) food	To have something to eat when there is not a lot of food available, like during the winter.	Ermine (Short-tailed Weasel); Black-capped Chickadees; Blue Jays; Beavers; Muskrats; Badgers
	Swaying in the wind	To camouflage (blend in) to its surroundings so it is not seen by predators.	American Bitterns
	Standing guard while others eat	Watching for predators so they can alert the others in the group of danger.	Ground Squirrels, Canada Geese