Activity guide

The wonderful world of the Banc des Américains marine protected area

Grade 3 and 4

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Presentation and objectives

Length: 45 to 60 minutes
Location: In-class
Grades : 3 and 4

Support material

- Underwater neighbours comic book
- PDF presentation for grade 3 and 4
- *Guess who!* game sheet (Appendix, to print)

Theme

Discovering the Banc-des-Américains marine protected area, its marine biodiversity, and the reasons for protecting its habitats.

General objective

Help students understand the diversity of marine life in the Banc-des-Américains marine protected area, and the importance of its protection.

Specific objectives

At the end of the workshop, students will be able to:

- Understand biodiversity, habitats, and adaptations of marine species
- Explore different types of habitats found in the Banc-des-Américains marine protected area
- Identify some adaptation strategies of marine animals to their environment
- Understand the importance of protecting marine environments to preserve marine life.

Preparation

1. Download documents (Comic book, PDF presentation and *Guess who!*)
2. Read comic book in class or at home.
3. Project the PDF presentation onto the screen or the interactive whiteboard (IWB).
4. Print *Guess who!* as a double-sided document (ideally)

Script

Introduction

Slides 1 to 3

Today, we are going to discover a special place in Gaspésie called the Banc-des-Américains marine protected area. It is a marine environment filled with different marine animals.

Before we begin, a few words about the Comité ZIP Gaspésie. It's a team that works to protect the sea and all its inhabitants. Today, thanks to their comic book and workshop, we are going to discover new animals and their underwater home!

Before we dive in, here's a few questions for you:

- Raising your hand, who has ever done snorkeling or scuba diving?
- Have you ever seen marine animals? Which ones?
- Did you read the comic book *Underwater Neighbours*?

(Take a moment to discuss with students.)

Now, let's dive into a very special place in Gaspésie, the Banc-des-Américains marine protected area.

The Banc-des-Américains marine protected area

Slides 4 and 5

What is a marine protected area?

The Banc-des-Américains is a marine protected area. This means it is a place in the sea where animals, plants, and their habitats are protected to keep the marine ecosystem healthy.

In this area, more care is taken with human activities, such as fishing, boating, or waste disposal, to reduce the impacts on marine life.

Why we protect?

(continue to slide 5)

The area is home to a wide variety of species. Numerous fish, invertebrates, algae, and seabirds can be found there. Underwater, there is a ridge, a sort of underwater mountain that extends from the tip of Forillon. On each side of the ridge, there are deeper sandy plains, and a cliff in found at the end of the ridge. These formations, combined with ocean currents, carry nutrients and plankton, which serve as food for many animals.

Where is it?

The Banc-des-Américains marine protected area is located off the Gaspé Peninsula. It starts at the tip of Forillon National Park and extends to Bonaventure Island, near Percé. Although you can't see it from the surface, this protected area forms a vast marine territory that you have to imagine underwater.

Threats and protection

Slides 6 and 7

- The Banc-des-Américains marine protected area is in place to ensure that the animals living there and their homes remain safe. Even though some dangers exist, such as:
- **Invasive species**: these are animals or plants that do not naturally come from here and can disrupt the balance. For example, they can eat too much food or hunt local animals, making life harder for species that have been here for a long time.
- **Sound pollution:** engines and boats make noise that can scare animals, like whales. They need quiet to communicate with each other, find food, and move safely.
- **Microplastics and other waste**: even very small pieces of plastic can harm animals or contaminate their food.
- **Habitat destruction:** if rocks, seaweed, or sandy sea floors are damaged, animals lose their home, shelter, and food.

Regulations

Slide 7

That's why there are regulations in this marine protected area. Activities that harm marine animals and their habitats are prohibited, and activities that are safe for them are allowed, such as observing, studying, and visiting carefully.

Thanks to these regulations, the animals have a safer and more secure environment, which helps them survive, feed, and reproduce.

In your opinion, what regulations would help prevent these threats?

(Take a moment to discuss with the students.)

Biodiversity and balance

Slides 8 to 14

In the Banc-des-Américains marine protected area, there are many different species: fish, crabs, starfish, seaweed, seals, and even whales! This is called biodiversity. It's a complicated word that means there are many different living beings sharing this place.

Slide 8

Plaice	- Flatfish - Bottom-dwelling fish - Prey: mollusks, small crustaceans - Fun fact: At birth, the flounder has an eye on each side, but after a while, both eyes end up on the right side, which allows it to lie flat on the sea floor.
Cod	- Bottom-dwelling fish - Prey: mollusks, crabs, fish (herring, capelin, sand eel, redfish) - Fun fact: The line on its side, called the lateral line, allows it to detect movements in the water caused by other animals, even when it cannot see them.
Atlantic wolffish	- Bottom-dwelling fish - Lives in crevices or caves - Prey: sea urchins, crustaceans, fish - Anecdote: When the wolffish stops using energy to swim, it sinks to the bottom "like a rock," because it doesn’t have a swim bladder (a sort of air sac) that allows it to stabilize itself in the water column.

Slide 9

Starfish	- Echinoderm - Lives on rocky bottoms - Prey: mollusks, such as mussels or whelks - Anecdote: To eat, it grabs the mollusks with its sticky feet, then the starfish has to extend its stomach out of its mouth to digest its prey inside the shell.
Hermit crab	- Lives on sandy, muddy, or rocky bottoms - It is a detritivore-omnivore and feeds mainly on dead animals. - Fun fact: The hermit crab protects itself by living in empty shells. Its soft, curved abdomen allows it to slip in perfectly.
Sponge	- Lives on the sea floor - It is indeed an animal - Filter-feeding organism that feeds on suspended organisms in the water

Slide 10

Frilled anemone	- Lives on rocky bottoms - Attaches to rocks using its suction foot - Prey: small crustaceans, zooplankton, worms - It uses its stinging (paralyzing) tentacles to capture its prey - Fun fact: To defend against predators, anemones can retract into themselves and thus resemble a rock
Sea cucumber	- Echinoderm - Lives on the sea floor - Prey: various types of plankton - Its sticky tentacles allow it to capture prey; it must “lick” its tentacles one by one to eat. - Fun fact: It breathes through its anus. And it has sticky feet like a starfish to move around and cling to the ground.
Green sea urchin	- Echinoderm - Lives on rocky bottoms where kelp grows (a seaweed also called sea lasagna) - Prey: Mainly algae; its green coloration actually comes from its diet. - Fun fact: It has 5 teeth that can move independently of each other.

Slide 11

Phytoplankton	-	Lives suspended in water - It is a microalgae - Performs photosynthesis to survive - It is at the base of the food chain - It is microscopic
Northern gannet	-	Seabird - Prey: small fish (capelin, herring, sand eels, etc.) - Can reach up to 1 meter from wingtip to wingtip when spread. - Fun fact: It dives from high in the air to catch the fish it eats.
Humpback whale	-	Lives in open water (water column) - Prey: Krill and small fish (capelin, herring, sand lance, etc.) - Can grow up to 17 meters in length and weigh up to 40 tons - Dives usually last between 5 and 10 minutes but can last up to 30 minutes.

Slide 12

Between the two, which image has the highest biodiversity?

(Give students time to answer)

Answer : The first one.

Maintaining balance

Slides 13 and 14

But why is it important to have so many different species? Well, the more types of animals and plants there are in an ecosystem, the stronger and more resilient it becomes. If one species disappears, the others can continue to live, and the ecosystem continues to function.

Every animal and every plant have a special role in keeping the ocean in balance. For example:

- Algae and certain marine plants produce oxygen and serve as food for many animals.
- Mussels and other bivalves filter the water to feed and help keep their underwater home clean for everyone. [1]
- Crabs and some cleaner fish also help keep the sea floor clean.

[1] When we talk about bivalves, we are talking about mollusks that have, visually, two shells, such as mussels, scallops, and clams. The exact definition is as follows: Mollusk whose shell consists of two valves joined by a hinge, a horny ligament, and one or two muscles. (Office québécoise de la langue française, 1990)

- Fish and small crustaceans eat small organisms and become the meal of seals and other predators.

Together, these animals and plants create a balance that allows life to grow and thrive in the Banc-des-Américains Marine Protected Area.

Marine habitats

Slides 15 to 17

Every animal has a home, which is called a habitat. It is the place where it can find food, shelter, and reproduce. To be a good habitat, it must provide several things: food, a suitable climate (temperature, currents, salinity), places to hide, and enough space to move around safely.

In the Banc-des-Américains marine protected area, there are several types of habitats, where each animal is adapted to its environment.

Rocky seabed

Slide 16

This is the habitat of anemones, sea urchins, starfish, and sea cucumbers. These animals have small sticky feet, which allows them to stay attached to the rocks. The rocks also serve as protection for them. Some fish, like the Atlantic wolffish, likes to hide in the holes and crevices of the rocks.

Open water

Slide 16

This is where fishes swim, such as cods. Cods need a lot of space to move around and search for their food.

Sandy seabed

Slide 17

Many animals live in or on the sand. They can bury themselves in it to hide and protect themselves.

Algae

Slide 17

Algae such as seaweed can serve as hiding places and food sources. Small fish and crabs take refuge there to escape predators and find food.

Conclusion of habitats (optional)

Some animals have multiple homes and can change habitats depending on their needs. For example, whales come to feed in the Banc-des-Américains marine protected area during the summer, and northern gannets sometimes travel very far to find food, even though their nest is on Bonaventure island.

This shows that animals sometimes have several homes, each for a different need: one place to eat, another to rest or reproduce, and always a safe place to move and protect themselves.

Thus, each habitat is essential to allow life to thrive in the Banc-des-Américains marine protected area, and each animal is perfectly adapted to the home it occupies.

Activity: Guess who!

Slides 18 to 20

Objective

Identify a species by asking questions about its habitat, diet, and adaptations.

How to play

1. Form teams (2 against 2)
2. Each team choose an animal

   The animal must remain a secret: it is not shown to the opposing team.
3. Take turns asking questions
   - One question at a time
   - Questions can be answered by yes or no
   - You can use the questions suggested on the sheet or create new ones.
4. Guess the secret animal
   - After each answer, eliminate the animals that do not match.
   - When there is only one choice left, one can suggest an answer.
5. Points
   - Each animal guessed correctly = 1 point

Answer sheet

From left to right on the grid, here are the names of the species:

Hermit crab	Starfish	Sea raven	Bonaparte's Gull
Sea cucumber	Cod	Phytoplankton	Redfish
Green sea urchin	Humpback whale	Frilled anemone	Sponge
Northern Gannet	Lobster	Atlantic wolffish	Harbour seal

Here are the answers to the questions:

Does it have fins?	Sea Raven, Cod, Redfish, Humpback Whale, wolffish, seal
Does it have eyes?	Hermit crab, sea raven, Bonaparte's Gull, sea cucumber, cod, phytoplankton, redfish, humpback whale, frilled anemone, Northern Gannet, lobster, Atlantic wolffish, harbour seal
Can it stick to objects or rocks?	Starfish, sea cucumber, green sea urchin, frilled anemone, sponge
Can it fly?	Bonaparte's Gull, Northern Gannet
Does it eat fish?	Sea raven, Bonaparte's Gull, cod, redfish, humpback whale, Northern Gannet, lobster (sometimes), Atlantic wolffish, harbour seal
Does it eat plankton?	Humpback whale, sea cucumber, frilled anemone, sponge
Does it eat invertebrates like crabs, urchins or mussels?	Starfish, sea raven, cod, redfish, lobster, Atlantic wolfish
Is it a filter-feeding animal, like mussels and sponges?	Frilled anemone, sponge
Is it a fish?	Sea raven, cod, redfish, Atlantic wolffish
Is it an invertebrate?	Hermit crab, starfish, sea cucumber, green sea urchin, frilled anemone, lobster
Does it live on the ocean floor?	Hermit crab, starfish, sea raven, sea cucumber, green sea urchin, frilled anemone, sponge, lobster, Atlantic wolfish (sometimes), redfish (sometimes)
Does it need sun to survive? (Referring to photosynthesis)	Phytoplankton
Does it need to breathe out of water, like whales and seals?	Humpback whale, harbour seal
Does it go on migrations?	Humpback whale, Northern Gannet, Bonaparte's gull
Do they make sound underwater to communicate?	Humpback whale

Conclusion

Well done, adventurers! Today, you discovered lots of marine animals and their habitats. Did you learn something new?

Why is it so important to protect habitats and the ocean?

Every animal has a special role, and together, they keep the sea alive, balanced, and healthy. With the Banc-des-Américains marine protected area, we protect all these animals and their homes, so that underwater life can continue to grow and thrive for a long time.

Before we wrap up, do you have any last questions?

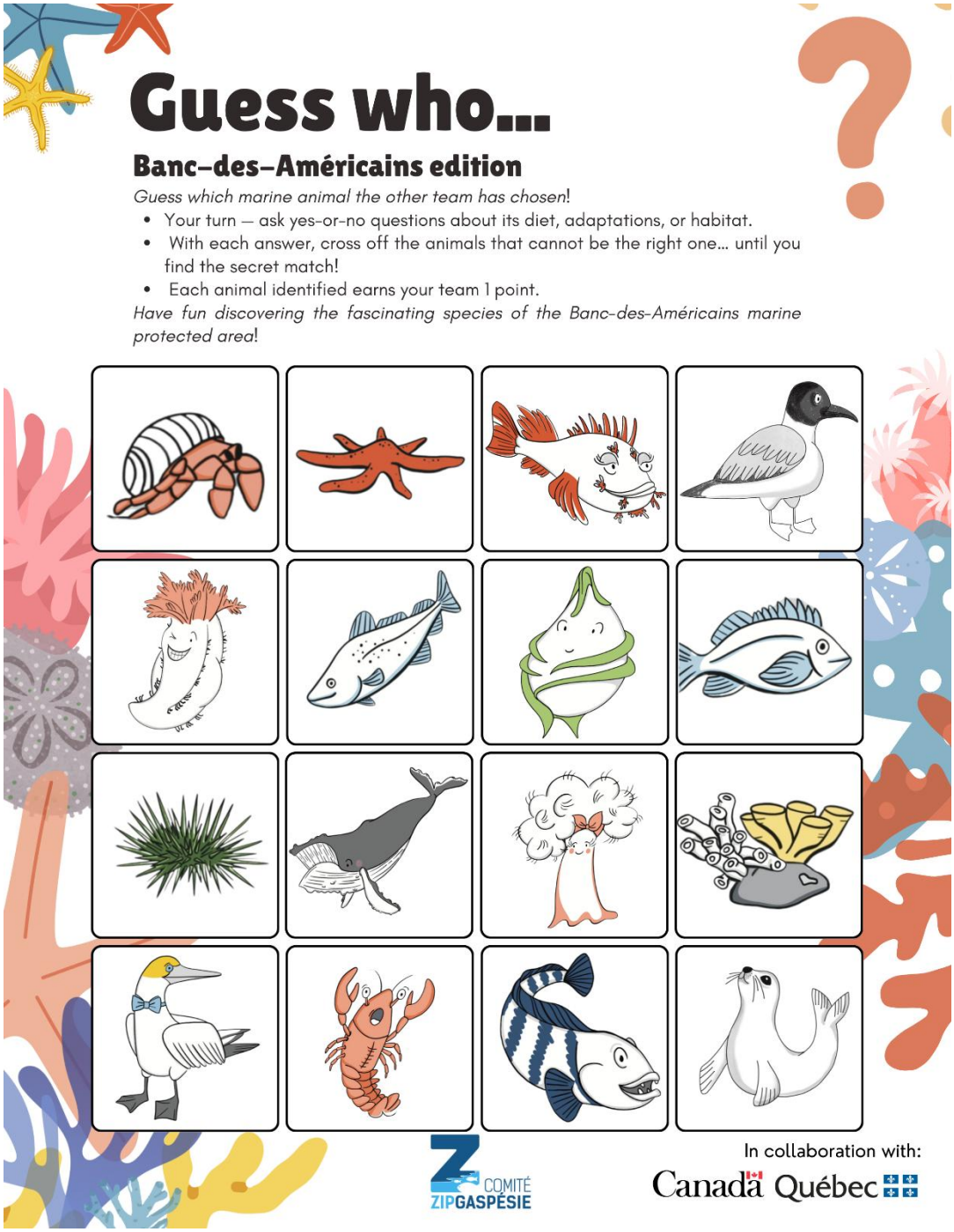
(Pause briefly for questions)

Thank you for your attention and your participation!

In collaboration with:

Canada Québec

Appendix


Guess who...
Banc-des-Américains edition
Guess which marine animal the other team has chosen!
• Your turn – ask yes-or-no questions about its diet, adaptations, or habitat.
• With each answer, cross off the animals that cannot be the right one... until you find the secret match!
• Each animal identified earns your team 1 point.
Have fun discovering the fascinating species of the Banc-des-Américains marine protected area!
COMITÉ ZIPGASPÉSIE
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Canada Québec

Guess who...

Banc-des-Américains edition

Question list:

Morphology / Physical characteristics

- Does it have fins?
- Does it have eyes?
- Can it stick to objects or rocks?
- Can it fly?

Diet

- Does it eat fish?
- Does it eat plankton?
- Does it eat invertebrates like crabs, urchins or mussels?
- Is it a filter-feeding animal, like mussels and sponges?

Classification / type of animal

- Is it a fish?
- Is it an invertebrate?

Habitat / lifestyle

- Does it live on the ocean floor?
- Does it need sun to survive?
- Does it need to breathe out of water, like whales and seals?
- Does it go on migrations?

Communication

- Do they make sound underwater to communicate?

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