*We're looking forward to seeing you at*


Dear Teacher,

We're glad you will be bringing your class to Swan Haven Interpretation Centre this April. Here are some ideas to present to your class before and after the trip, along with a background of the interpretation centre and M'Clintock Bay.

Included in this package is your *Registration Confirmation* with a map to Swan Haven. There is also a helpful *Thank You Swan Haven Chaperone* card of instructions that you may copy and distribute to your chaperones. Finally, the *Kit List* can be copied and given to each of your students to take home to their parents before their visit to Swan Haven, so that they come to school that day prepared for their field trip.

When you arrive at Swan Haven, interpreters will divide the students into three groups. Each group will have an interpreter to guide them through the three activity stations:

1. Inside Swan Haven
2. Along the lakeshore
3. The outdoor play area

Please remember that you must have at least **1 teacher/chaperone for every 10 students.** Though the building itself is heated, be aware that there is no running water and only outhouses as toilets.

If you intend to have lunch at Swan Haven, you must book the space ahead of time (e-mail: wildlife.viewing@gov.yk.ca or call 667-8291). We have been short on space in the past, and will let you know if another class has already booked the facility. Note that Sprucewind Girl Guide Camp is across the road and available to rent as a picnic space, free of charge. An indoor facility is also available for rent at the camp for a small charge. Please contact the Girl Guide office at 667-2455 to book that facility.

If you have any questions about your visit, please contact Scott Cameron, the Wildlife Viewing Technician, at 667-8291.

We look forward to seeing you at Swan Haven!

The Wildlife Viewing Program

**NOTE**: All the materials in this package are also posted online under "School Programs" at www.swanhaven.gov.yk.ca. If you misplace any of the sheets or materials, feel free to download them from the website.

# Before, During and After your Visit
# Activities for Grade 5

***Before your visit to Swan Haven***

Before you visit Swan Haven, play the **Ecosystem Web** game to get your class thinking about how everything is connected and that all of our actions have an effect on our planet. Follow the lesson plan on the attached sheet to guide you through this eye-opening activity.

***At Swan Haven***

- **Station #1 Inside Swan Haven**

This activity station includes a grand view of the bay with spotting scopes mounted on the upper deck. Here interpreters will share some of the features that make this place so great! Back inside, discover the sounds and sights of swans up close. It's time to pull out some of the learning from previous visits as students try their hand at **Birds-A-Foot**. What do birds eat and how does the shape of their feet help you figure this out? What do swans do in the winter? Students can also view and vote for their favourite piece of student art.

- **Station #2 The outdoor play area**

It's time for some active fun! The **Swan Dance Relay Race** is where we non-migratory humans get a chance to strut our stuff and migrate as a team. The best actors have the most fun with this game! Prepare for a bit of mud for this activity.

- **Station #3 Along the lakeshore**

Here is the place for some quiet looking and listening. Your interpreter will guide your group for a closer look at the birds with binoculars and spotting scopes. This is where you'll get to use your **Swan Haven Birding Passport** as we search for some of the birds featured there. Mitts, hats, warm boots and a coat make this a more comfortable viewing experience.

***After your visit to Swan Haven***

After all that learning, it's time to apply what you've learned in a **Waterfowl Adaptation** worksheet. How does a swan feed itself? What does it search for? The answer sheet gives teachers the chance to work through this exercise with students. Use this as a research exercise and see what your class can find out about these birds.

# ECOSYSTEM WEB

**Grade:** 4 - 6.

**Subjects:** Science, Art, Language Arts.

**Skills:** Analyzing, applying.

**Duration:** 30 minutes.

**Group Size:** Whole group.

**Setting:** Outdoors or indoors.

**Vocabulary:** Ecosystem, producer, herbivore, omnivore, carnivore, detritivore.

**Objective:** Students will be able to describe why changes in one part of an ecosystem can affect other, seemingly unrelated parts.

**Activity:** Students sitting or standing in a large circle represent an ecosystem. Each student represents a different part of an ecosystem. String connects all of the students in an intricate web.

**Materials:**
One large spool of string
Scissors
Cards representing parts of an aquatic ecosystem
List of Yukon organisms

**Background:**
An **ecosystem** is a group of living things and their interactions with the non-living environment in which they live. In this activity, living things are categorized as **producers** (which include mainly plants and algae) and consumers, which include **herbivores**, **carnivores**, **omnivores**, and **detritivores**. All living things are ultimately connected to one another and to the non-living components that surround them. When something is removed, wide ranging and often unforeseen consequences can result. All of the earth's organisms are interdependent, and the non-living things that support life (sun, water, minerals) cannot be separated from the puzzle.

**Procedure:**
1. Divide the class into five groups: non-living things (sun, water, minerals), producers, herbivores, carnivores, and detritivores.
2. Assign each student a different organism or non-living thing that they will represent from their group. Each student should have a card which will include a picture and the name of the organism or non living thing of their web element.

3. Discuss with students how their organism or element relates to other parts of the food web. Each student should be aware of what their element needs to survive, and what other organisms or elements rely on it for survival.
4. Arrange students in a large circle, arms distance apart.
5. Hand the spool of string to the sun and instruct the sun to say "I am the sun, and plants need me in order to live." The sun should then hand the spool of string to a plant. For example, the sun might hand the spool to a willow.
6. As the web begins, no one is allowed to throw the string or pass it without the complete attention of the other class members. Explain that one organism (or non-living element) must "interact" with another by first stating the relationship between the two, and then by passing the spool of string to the next person in the food web. For example, the willow would say "I am a willow (a producer), and I am eaten by moose." The receiving organism (or non-living thing) should then wrap the spool of string **loosely** around a finger, and continues the web. **Remind students not to pull on the string!** Review the rules of the game until each student understands the procedure.
7. Continue until all the students are holding the string at least once. Get as many "interactions" as possible, so that there will be a net of string connecting the students.
8. Reinforce the concept that all living and non-living things are connected, as has just been demonstrated. Ask the students to predict what would happen if one organism or non-living thing was removed from the web. Pick one member of the web, (for example, a salmon) and ask students to identify other web members that would be affected if this animal disappeared. Reinforce that each member of the web is connected and cannot leave without affecting every other part of the ecosystem.

**Variation:** Have students think up of and assign themselves local organisms or non-living elements that fit within their category.

**Extensions:**
1. After the web has been established, instruct one of the migratory animals (for example, bird, salmon, caribou) to move. The entire web will need to move or be modified in order to survive. What are the closest connecting elements to migratory animals? While the class is still attached in the web, discuss what happens in real ecosystems when migratory animals move away. What about animals that hibernate in winter? How are other members of the ecosystem affected? What happens if pollution occurs in a part of the ecosystem? What if the population of one element grows too large for the ecosystem to support?
2. Simulate an environmental disaster once the web has been set up. Show how toxins, like oil or lead, can be passed by consumers through an ecosystem until most members have been affected.

**Evaluation:**
1. Have each student list all possible relationships for their element.

**References:**
Adapted from "Spinning a Yarn About Ecosystems," Alaska's Ecology, Alaska Department of Fish and Game, Juneau, Alaska, 1995.

**LIST OF ELEMENT CARDS** (These are examples for each category; there are many more.)

1. NON-LIVING THINGS
sun
water
minerals

2. PRODUCERS
willow shrub
spruce tree
grasses/sedges
flowers
lichens

3. HERBIVORES
snowshoe hare
grouse
boreal chickadee
red squirrel
grizzly bear
moose
caribou
ground squirrel
dall sheep
three-toed woodpecker
aquatic invertebrates (e.g. water fleas, fresh-water shrimp)

4. CARNIVORES
boreal chickadee
grizzly bear
bald eagle
wolf
lynx
coyote
golden eagle
spiders
three-toed woodpecker
dragon flies
salmon

5. DETRITIVORES
beetles
flies
fungi

# WATERFOWL ADAPTATIONS

| SPECIES | FORAGING TECHNIQUE | FOOD | NEST TYPE AND LOCATION | TOOLS FOR SURVIVAL |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

# WATERFOWL ADAPTATIONS ANSWER SHEET

| SPECIES | FORAGING TECHNIQUE | FOOD | NEST TYPE AND LOCATION | TOOLS FOR SURVIVAL |
|---|---|---|---|---|
| 1 Trumpeter Swan | dabbles | aq plants, aq. inverts | aq. and emergent veg., down, feathers, surrounded by water, often on muskrat house | webbed feet with long toenails, bill has serrated edges, down, semi-plumes, contour feathers, preen gland |
| 2 Tundra Swan | dabbles | aq. Plants, aq. inverts | grass, moss, down, feathers built on elevated hummock | webbed feet with long toenails, bill has serrated edges, down semi-plumes, etc. |
| 1 Mallard | dabbles | seeds, greens, aq. inverts | cattails, reeds, grass, down; usually near water | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 2 Am. Green-Winged Teal | dabbles, ground gleans | seeds, aq. inverts | concealed depression filled with grass, forbs, twigs, leaves, down; occasionally far from water | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 3 Am. Wigeon | dabbles | greens, aq. inverts | concealed depression filled with grass, stems, down; often far from water | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 4 Northern Pintail | dabbles, ground gleans | seeds, greens, aq. inverts | concealed depression filled with grass, leaves, down; occasionally far from water | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 5 Northern Shoveler | surface dips | aq. veg., aq. inverts (e.g. snails, insects) | concealed depression filled with grass, down; on water's edge | webbed feet, down, semi-plumes, contour feathers, preen gland, serrated bill |
| 1 Canvasback | surface dives | aq. veg., aq. inverts (e.g. small clams) | concealed floating basket-shaped nest of bulky emergent veg., down; in knee-deep water | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 2 Lesser Scaup | surface dives | aq. inverts (e.g. amphipods), aq. plants | concealed depression lined with grass, down; in open, dry habitat within 150ft of water | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 3 Common Goldeneye | surface dives | aq. inverts (e.g. insects, crayfish) | cavity in dead tree (6-60ft above ground) lined with wood chips, down; near water | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 4 Bufflehead | surface dives | aq. inverts (e.g. insects) | cavity in dead tree (2-10ft above ground) lined with down; will use burrow in earthen bank | webbed feet, down feathers, semi-plumes, contour feathers, preen gland |
| 5 Common Merganser | surface dives | fish, aq. inverts | cavity in decid. tree (15-50ft above ground) lined with down; will use cavity in earthen bank | webbed feet, down feathers, semiplumes, contour feathers, preen gland |