



Cub Meeting Schedule: Week Three

Theme: Eco-Systems

Date: _____

<i>Time</i>	<i>Activity</i>	<i>Program Details</i>	<i>Leader Responsible</i>
10 mins.	Gathering Activity <i>(See detail planning sheet)</i>	Ants on a Twig	_____
5 mins.	Opening Ceremony <i>(Details can be found in the Cub Leader's handbook)</i>		_____
10 mins.	Game <i>(See detail planning sheet)</i>	Migration Headache	_____
40 mins.	Theme Activity <i>(See detail planning sheet)</i>	Build duck nest boxes	_____
10 mins.	Game <i>(See detail planning sheet)</i>	Snake and Frog	_____
10 mins.	Song/Story <i>(See detail planning sheet)</i>	Ants on a Twig con't.	_____
10 mins.	Six Meeting		_____
5 mins.	Spiritual Fellowship	- Recite Law/Promise - Prayer	_____ _____
5 mins.	Closing Ceremony <i>(Details can be found in the Cub Leader Handbook)</i>		_____
15 mins.	Leader Discussion time	Review meeting and discuss next week's plans	

Badge Links: World Conservation Badge #6

Meeting
Notes:



ECO-SYSTEMS: GATHERING ACTIVITY

Ants on a Twig

As Cubs arrive, meet them outside and ask them to find some ants. Check sidewalks, near the cafeteria, around windows. Look on trees, in flower beds and in vacant lots. Working in teams of two or three, ask them to observe the ant's behaviour. Have one Cub be the recorder, writing down their team's observations of how the ants take care of their basic needs, and describing how the ants move in a line. Provide pieces of bread and watch what the ants do when they discover this source of food. When it's time for the meeting to start, collect the recorder's notes for use later in the meeting.

GAME: Migration Headache

READ THIS FIRST

Topic: Cubs role-play migrating water birds travelling between nesting habitats and wintering grounds and are subject to hazards at either end of the migration path, as well as along the way.

Background:

Migration is a mysterious topic. How do birds, fish, mammals and insects travel the immense distances they do with such exactness? Some travel at night, some during the day, some in the skies and other deep within the sea. Yet they locate habitats necessary for their survival. Scientists have proposed that they use the stars, the sun and even the earth's magnetic field for guidance. Some animals, such as salmon, seem to use smell to guide them home from the sea. Most migrating species probably use a combination of means to guide their journeys.

There is a variety of remarkable migrating birds - ducks, geese, swans, cranes, herons, gulls, terns and shorebirds for example, that require the presence of wetlands in their breeding habitat and on their wintering grounds. Since these two regions are often thousands of kilometres apart, they also need wetlands to provide them with food and rest in-between.

The populations of some species of water birds are healthy; however, populations of many are showing long-term downward trends. Examples of populations of species that appear to be healthy in most areas are Canada Goose, Goldeneye and Gadwall. Examples of species that have experienced some decline but are now increasing are Wood Duck, Snow Goose, Mallard and Tundra Swan. Examples of species that are officially listed as endangered in Canada are Piping Plover and Whooping Crane.

The primary threat to the survival of migratory water birds is the disappearance and degradation of wetlands and associated nesting areas. Without wetlands, dozens of species of ducks, geese, swans and other waterbirds face loss of the necessary habitat for survival.

The migration routes, or fly-ways, of North American waterbirds are the Pacific, Central, Atlantic and Mississippi flyways. Key wetlands and river systems act as the main guide posts and resting places for birds moving up and down these major flyways.

Wetland habitats - usually found in low, fertile plains along water courses - were historically prized for conversion to farmland and settlements. Today, the journeys of waterbirds take them over lands on which human influences are ever-increasing in scope and magnitude. Economic development and urbanization are reducing the availability of natural wetlands. Pollution; through pesticides, effluents and soil erosion, reduce the health and safety of wetlands for both wildlife and people. There is new evidence to suggest that acid precipitation may be affecting insect populations, which in turn affects the birds that depend on insects for food. Species like carp and purple loosestrife, that have been introduced from other continents have upset the natural balance of many wetlands. Natural conditions such as predators, weather, disease and fire also influence both the animals and their habitat and when combined with human impact can be even more devastating.



Equipment:

- Large playing field, two reusable markers for every three Cubs (eg; frisbees, plywood, carpet pieces, etc.) Clearly mark the markers to indicate the top from the bottom.

How to Play:

1. Select a large playing area about 20 metres in length. Randomly place the habitat markers in two patches on the playing field as shown below.

Choose the number of markers so that you have one for every three Cubs at each end of the field. Designate one of these areas as the “wintering habitat”, and the other as the “nesting habitat”. This means you have two sets of markers; one set at the nesting habitat and one set at the wintering habitat.



2. Explain to the Cubs that they are waterbirds and will migrate between these two areas at your signal. Tell them that the markers represent “wetlands”. These wetlands provide suitable habitat for water birds. At the end of the journey, the Cubs must have one foot on a marker in order to be allowed to continue. If they cannot get their foot on a marker, that means they have not found any suitable habitat. They “die” and have to move - at least temporarily – to the sidelines and watch. During migration, the birds may want to “flap their wings”, moving their arms like birds in flight.
3. Explain to the youth that many factors will limit the survival of populations of migrating waterbirds. Some involve changes in the wintering and nesting habitats. There will be times of abundant food, water, shelter and space suitably arranged to meet the habitat requirements of the birds. There will be other times when the habitat is stressed, with many factors limiting the potential for survival. Sometimes the area of available habitat is reduced. Tell the Cubs that for purposes of this activity only three water birds can occupy a “habitat haven” (marker) at any one time.
4. Begin the activity with all of the Cubs at the wintering habitat. Announce the start of the first migration. Have the Cubs migrate in slow motion until they become familiar with the process. Then they can speed up. On the first try, all the birds will successfully migrate to the nesting habitat.
5. Explain that there has been no loss in the area of available habitat. Thus, a successful nesting season is at hand.
6. Before the Cubs migrate toward the wintering habitat, turn over one marker from the wintering region. Explain that a large wetland area has been drained to build a condominium. Repeat the instruction to migrate and send the birds to the wintering habitat. Have the three Cubs who will be displaced stand on the sideline. Tell the Cubs that these three died as a result of loss of habitat. Remind any “dead birds” that they will have a chance to get back into the activity. They can come back as surviving hatchlings when favourable conditions prevail and there is habitat available in the nesting ground.

Note: The series of migration cycles can be graphed. The “Y” axis can represent thousands, or hundreds of thousands of ducks, geese or any other migratory bird. Populations rise or decline as changes in habitat occur over the years. Drought or flood conditions can have large scale impacts. Habitat destruction or conservation programs by people can also have affects on a local or continental scale.



7. Before the next migration to the nesting region, turn over four markers in the nesting habitat. This represents a catastrophic loss. Tell the Cubs that this is the result of an oil spill in the local river, severely damaging shoreline habitat. Instruct the students to migrate.

Note: This results in a large number of Cubs waiting on the sidelines to re-enter in the nesting habitat. Before many cycles are repeated, provide them with an opportunity for re-entry. Each time, give the Cubs examples of changes in the habitat conditions that could have taken place making it possible for them to survive. Two youth can be made permanent monitors to turn the markers over as you instruct them.

8. Repeat the process for eight or ten migration cycles to illustrate changes in habitat conditions with resulting effects on the birds. Give examples of positive and negative factors that might influence the bird's survival.

Some limiting factors are a natural and dynamic part of any environment (eg. floods, drought, disease, predation, etc.) This is true of factors favouring survival as well. However, the significant difference in the case of the survival of populations of migratory aquatic birds seems to be the loss or degradation of huge areas of suitable habitat, much of it as a result of human intervention, eg. draining wetlands, destruction of nesting cover, pollution of water supplies, introduction of carp or purple loosestrife, etc.

Be sure to create one or more "disaster" years to illustrate catastrophic loss of large areas of available habitat. Remember that overall, the availability of suitable habitats for migrating aquatic birds is diminishing. (The activity should end with fewer areas of available habitat that can accommodate all the birds.) There is a general agreement that the greatest long-term threats to the survival of populations of migratory water birds are the loss and degradation of habitat.

Introduce some positive factors such as creating new wetlands, restoring damaged ones, putting up nest boxes, planting nesting cover, setting aside land for a park, removing purple loosestrife and carp, etc.

9. During the discussion, ask the Cubs to identify the apparent causes of the bird's population decline from year to year. Ask them to try to imagine what seems to be the major factors contributing to habitat loss and degradation. Ask them to make predictions about the effects of these factors. Distinguish between catastrophic effects and gradual changes. Ask the Cubs to support their hypotheses with evidence, seeking additional information through research, if necessary.
10. Ask the Cubs to summarize what they have learned about some of the many factors that affect the success of aquatic bird migration. List and discuss human-caused factors and environmental factors. Compare similarities and differences between these limiting factors. Highlight those that the students identify as posing the most significant long-term threat to the survival of migrating water birds.
11. What kinds of things can and should be done to protect and restore habitats for migrating water bird populations? Discuss potential trade-offs related to any recommendations.
12. **OPTIONAL:** Give a couple of Cubs nerf balls and have them stand on the sidelines. As the birds are migrating, the Cubs throw the nerf balls. If birds are hit, they are out of the game. The nerf balls represent "fatal" factors that affect birds while migrating, eg. the weather, t.v. towers, telephone lines, hunters, high-rise buildings that leave their lights on at night, airplanes, etc.

THEME ACTIVITY: Build a Duck Nest Box

Wood ducks, Barrow's goldeneyes, common goldeneyes, hooded mergansers, common mergansers and buffleheads are all cavity nesting ducks. They build nests in abandoned woodpecker holes or natural tree cavities caused by disease, fire or lightning. These ducks will also use a man-made nesting structure. Here are plans for a nest box that you can build, install and maintain. The design, which is used by the Ducks Unlimited Greenwing program, may even attract other cavity nesting birds such as kestrels, flickers, woodpeckers or screech owls.

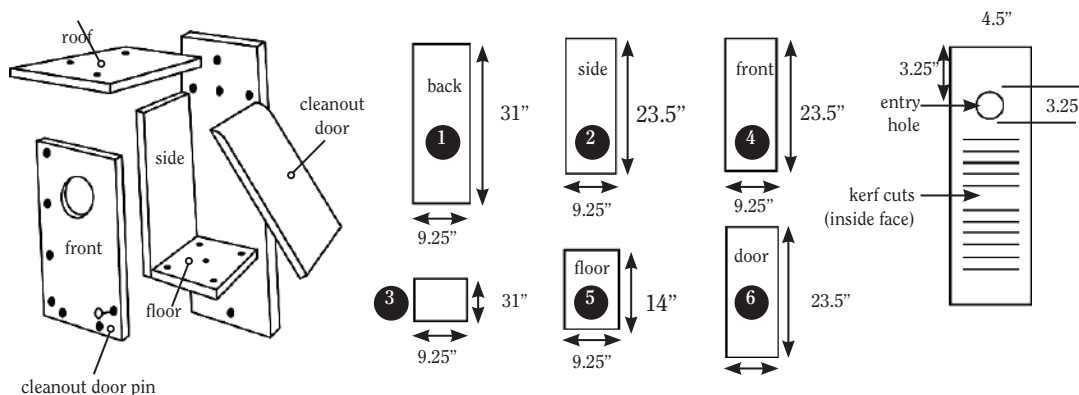
Cedar lumber is recommended because it is naturally resistant to weather and insects. You can also use any materials you have available such as pine or plywood. The box pictured uses 10.5 linear feet of 1" x 10" (3/4" thick by 9 1/4" wide) lumber that is rough on one side (for the inside of the box).



If you decide to apply a finish to your nest box, use a nontoxic wood preserver or a light shade of an earth tone paint. The ducks will find your box by seeing the contrast in colour caused by the entry hole. Do not apply the finish inside of the box.

The nest box can be installed over water or land. Boxes on land should be within 200 metres of water. Avoid poplar trees because they are a favourite of beavers. Try to mount the box 15 feet off the ground and tilt it slightly forward to help the ducklings climb out.

Cavity nesting ducks do not carry nesting materials. It is important to place four to six inches of wood chips, shavings or coarse saw dust in the bottom of the box. Replace the old materials once a year to reduce parasites. Do all your maintenance and cleaning before nesting season begins. Good luck! Plans can also be found on Duck's Unlimited home page at www.ducks.ca/nestboxes.



Tools needed:

- handsaw or table saw
- jig saw
- drill and 1/2" bit
- hammer & nail
- 23 screws, screwdriver

Procedure

1. Measure and cut your wood to produce the six pieces. Number the pieces as shown. See material measurements.
2. Attach the back (1) to the side (2) using four screws fastened from the back of the box. See exploded view.
3. Drill five 1/2" drainage holes in the floor (3). Attach the floor by fastening two screws through the back and two through the side.
4. Draw the entry hole on the front (4) using a pencil (4 1/2" x 3 1/2" oval). Drill a pilot hole and cut out the entry hole using a jig saw. See detailed view.
5. Score the inside face of the front (4) using a saw. The horizontal slots will provide toeholds when the ducklings climb out. See detailed view.
6. Attach the front (4) using six screws.
7. Round the top, outside edge of the door (5). See exploded view. Fasten the door at the top with one screw from the front and one from the back. The two screws form the hinge and allow the door to open. Pin the door shut with a nail from the front.
8. Attach the roof (6) using four screws from the top and three screws from the back (be careful not to screw into the door). The box is now ready to install.



THEME ACTIVITY: Snake and Frog

READ THIS FIRST

Topics: animal characteristics; predators; prey

Objectives:

1. To introduce Cubs to common wetland predators and prey species.
2. To highlight adaptations that help prey species avoid becoming someone else's supper.

Background:

Every living creature has special or unique abilities (adaptations) that help it to survive. Predators must adapt successfully to catch food or they will starve. For example, bears must be able to judge the location of fish as they scoop the fish out of the water. Birds have keen eyesight to help them spot small insects and worms. Snakes use their sense of smell to locate their prey. Prey animals must also have special adaptations to help them avoid being eaten. Keen senses, especially hearing and sight, help prey get early warnings of approaching predators. Some prey species have also adapted special means of escaping capture once they detect a predator. This activity focuses on the abilities of the snake and the frog.

Equipment:

- Three balls or bean bags. One has to be smaller or distinct in some way from the other two.

How to Play:

1. Participants stand or sit in a circle. Begin passing the snake balls from player to player in the circle. Direction doesn't matter. With a bit of practice the Cubs should be able to get the balls moving at top speed. Try a few sudden reversals.
2. Introduce the frog ball and explain that the Cubs can only pass the snakes to an adjacent player, but the frog can be thrown to someone across the circle. The object of the game is for the snakes to catch the frog by tagging who is holding the frog ball with one (or both) of the snake balls. To keep everyone alert and to make the game more interesting, get the Cubs to call out "snake" or "frog" or have them "hissssss" or "ribbit" each time they pass a ball.
3. Was it easy for the snakes to capture the frog? Why or why not? What special adaptations helped the frog stay alive? Get the Cubs to suggest some other wetland predator and prey species and discuss some of their special adaptations.

GATHERING ACTIVITY (cont'd): Ants on a Twig

Now it's time to demonstrate ant behaviour. Ask each recorder to read their team's observations. How many were similar?

Ask the Cubs to get into two equal lines facing each other in a narrow area (about one third of a metre wide) - as on top of a fallen log, between two lines of chalk or tape, or on a low wall. The two lines of ants must pass each other without falling off! The Cubs are to simulate ant behaviour, using their hands and arms as antennae, for example, touching as they pass each other.