



Chapter 4 - Wetland Treasures - *Seaway Trail Wildguide*

Lesson #2 – The Beaver

Grade 4 – 6

Subject: Science

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Anticipatory Set:

What kind of animals would you find inhabitation in wetlands?

NYS Learning Standards:

Mathematics, Science, and Technology Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.

Objectives: Students will learn about the beaver and different species that live in the wetlands by creating a diorama or a drawing of the beaver or another animal's habitat.

Purpose: To have students understand the importance of preserving our wetlands so the beaver and other animals can survive in their habitat.

Summary: The Beaver: New York State Mammal

The typical wildlife species in marshes and swamps are ducks, Canada geese, great blue herons, kingfishers, redwing blackbirds, muskrats, beavers, snapping turtles, and painted turtles.

The beaver is the New York State mammal. The beaver can weigh between 30 to 60 pounds as an adult. They have large webbed hind feet with double claws on two inner toes of each foot. The claws are used as a comb for grooming their fur and for applying waterproofing oil from two glands that are located under the tail. They have a large flat tail that is covered with soft black scales. The tail has two functions: it acts as a rudder for underwater swimming, and the beaver uses it as a signaling device. The beaver will slap the tail on the water to warn others of an intruder coming their way. The beaver also has strong jaws that have two cutting teeth, called incisors. The incisors keep growing all through the beaver's life so that these teeth are never worn down. Beavers use their incisors to cut down trees.

The beaver is also known for its engineering skills. They can create ponds and lakes by building dams across flowing water. They use twigs, limbs, small trees and mud and build a dam that can be up to 11 feet high and over 300 feet long. The home for a beaver also provides an environment for minks, muskrats, waterfowl and fish. The beaver builds a lodge out of logs, sticks and mud that can be 5 to 6 feet high and about 20 to 30 feet in diameter. Every year the beaver will add on to the lodge. The lodge will have an inner chamber that is above the waterline with a ventilation hole and an underwater tunnel leading to the outside. Beavers mate for life and live in colonies. All the beavers in a colony work together and build lodges as their homes.

The mating season is around January or February. The gestation period is about 102 days. The beaver will have between 2 to 4 kits around May or June. When the kit is about 2 to 3 weeks old they will begin to eat fresh leaves. The kit is considered mature



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around 2 years of age and will voluntarily or be forced to leave the lodge. The life span of a beaver is about 10 to 12 years average. Some have been known to live up to 20 years.

Beavers live on plants; the inner bark of living trees is considered their main food. In the fall, winter and spring the beaver will live on twigs and bark. During the summer they live on herbaceous plants. In the autumn colonies will collect a supply of food logs and branches and anchor them to the bottom of a pond near the underwater entrance of a lodge. During the winter when the ice has formed on the pond the beavers can swim to the food pile and drag the food back to the lodge. Depending on the size of the beaver they can eat any where from 1 ½ to 4 ½ pounds of bark per day to survive. The beaver is most active at night and sleeps for most of the day in the lodge. However, you may see one during the day when they are collecting food or making repairs on the dams or the lodge. The best time to see a beaver is late afternoon or dusk.

Materials:

1. Molding clay
2. Sticks, twigs or Popsicle sticks
3. Construction paper in several colors
4. Felt in several colors
5. Cellophane in several colors
6. Cardboard boxes
7. Plain construction paper
8. Crayons, color pencils or paints.

Teach:

1. Instruct the students that they will be reconstructing a beaver lodge or den. The students can also be instructed to reconstruct another animal's habitat that lives in the wetlands.
2. The students will have to go to the library or use the Internet to research the animal's habitat.
3. The class can be divided into groups of two to three students or the students can work on the project on their own. It is up to you as the teacher on how you want the project to be done.
4. Minimum standards for a complete project include:
 - a. The project has to be a model or drawing of what the animal uses as a home.
 - b. The model/drawing must have all parts labeled.
5. The students have to prepare an oral presentation about their project to share with the class. The presentation should be about 3 to 5 minutes long covering key points about the animal's habitat and why it is important for our society to protect them.

Guided Practice:

The teacher will help students find information about the animal they are researching by giving the class time in the computer lab or the library to find information. The teacher will also have books available for the students to use as well. Set several dates when students need to show their progress on the project, to help monitor progress.



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Closure:

Ask the students what they learned about the different animals that live in the wetlands. Ask the students why it is important that we preserve the wetlands for the animals. Ask the students what we can do as a society to help protect these animals.

Independent Practice:

Each student has to write an essay on the animal's habitat. The essay must include how the animal builds or uses their habitat, what they eat, how they acquire their food, the animal's life span, how many young they give birth to, and what predators they may face. The essay should cover what dangers the animal may face if the wetlands are destroyed. They must also include any other information that makes the animal interesting.

Extended Activities:

1. Have a field trip to local parks, zoos and museums so students can have the opportunity to learn more about the animals.
2. Have the students research fish, birds, or insects that live in the wetlands.
3. Have the students display or do a presentation for other classes.
4. Have the students write a letter or a news article about their animal they researched.
5. Have the class create a collage of the different animals found in the wetlands.
6. Have the students do research on the zebra mussels that are affecting our waterways.

Web sites:

1. <http://mdc.mo.gov/chrisd/landown/wetland/beaver>
This is a great site for teachers to collect additional information on the beaver.
2. <http://www.cas.psu.edu/docs/CASDEPT/FOREST/wetlands/manual/chater3.htm>
This is a lesson plan that covers information on wetlands and the different types of animals found in the wetlands.
3. <http://www.epa.gov/OWOW/wetlands/science/readlist.html>
This is a great site for a list of books for students to read for different grade levels.
4. <http://www.esc20.net/etprojects/formats/scrapbook/spring2000/mg/team3/splishsplash>



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This is a great site for students to visit and learn about the different types of animals in the wetlands. The site offers additional website links.

5. <http://www.oldmillstream.com/nature/activitypack/activitypage3.htm>

This is a great site for teachers and students to visit. The site has a drawing of a beaver lodge.

6. <http://www.twingroves.district96.k12.il.us/wetlands/muskrats/muskrats.html>

This is a great site for students to use if they are researching muskrats.

7. <http://www.beaversww.org/beaver.html>

This is a great site for students to go to learn about beavers.

Books for Research:

1. "Greening School Grounds: Creating Habitats for Learning", Tim Grant, Gail Littlejohn, New Society Publishers, 2001, ISBN 0865714363

Children's Books:

1. "Busy Beavers", Barbara M. Brownell, Random House, Aug 1994, AISBN 0870447408 (ages 4-8)
2. "Beaver's Lodge, Ingrid and Dieter Schubert, Front Street Press, April 2001, ISBN 1886910685, (ages 4-8)
3. "Beavers", Helen H. Moore, Mondo Pub., Sept. 1996, ISBN 1572551119, Ages 4-8)
4. "Beavers: Where Waters Run" Paul I.V. Strong, Northword Press, April 1997, ISBN 1559715804 (ages 9-12)
5. "Building Beavers", Kathleen Martin- James, Lerner Pub Group, Nov 1999, ISBN 0822536323, (ages 4 – 8)
6. "Beavers", Deborah Hodge, Kids Can Press, Oct 1999, ISBN 1550746790, (ages 4-8)
7. "Beaver" Glen Rounds, Holiday House, March 1999, ISBN 08234144x, (ages 4-8)
8. "Jack: The Story of a Beaver" Shirley E. Woods, Fitzhenry and Whiteside, Jan 2004, ISBN 1550417355 (ages 9-12)
9. "The Beaver(Life Cycle Series)", Sabrina Crewe, Steck-Vaughn Co, May 1999, ISBN 0817249x (ages 9-12)