

A Beaver Pelt Tale

Created By: An original Creek Connections activity. Creek Connections, Allegheny College, Meadville, PA 16335. <http://creekconnections.allegheny.edu>

Grade Level: Basic or intermediate

Duration: Approximately 45 minutes depending on discussion time.

Setting: Classroom or open lab room if possible

Summary: Students will observe a beaver pelt, a skull, tracks, and scat, which will help in identifying physical traits that aid in the beaver's survival. Also, students will participate in a beaver pelt activity.

Objectives:

Students will learn about some of the important physical adaptations of the beaver, as well as how Native Americans and Europeans had an impact on the beaver population.

Vocabulary: musk sacs, castors,

Materials (Included in Module):

- Beaver tracks, skull, scat, and pelt
- Twigs chewed by beavers
- Picture of Europeans
- Beaver pages
- Native American names
- Lace
- Beads
- Needles
- Buttons
- Mirror
- Jewelry
- Pot
- Spices
- Gun
- Fish hooks

Additional Materials (NOT Included in Module):

- None

ACADEMIC STANDARDS: (ENVIRONMENT AND ECOLOGY)

7th Grade

4.7.7.A. Describe diversity of plants and animals in ecosystems.

- Identify adaptations in plants and animals.

4.7.7.B. Explain how species of living organisms adapt to their environment.

10th Grade

4.1.10.C. Describe the physical characteristics of a stream and determine the types of organisms found in aquatic environments

- Identify terrestrial and aquatic organisms that live in a watershed.

4.7.10.A. Explain the significance of diversity in ecosystems.

- Identify a species and explain how its adaptations are related to its niche in the environment.

4.7.10.B. Explain how structure, function and behavior of plants and animals affect their ability to survive.

- Describe an organism's adaptations for survival in its habitat.

Compare adaptations among species

BACKGROUND:

Beavers are the largest North American rodents and can weigh between 40 and 60 pounds (18.2 and 22.2 kilograms). Their pelts are made up of dense underfur with longer guard hairs on top. This fur provides insulation in cold water. They also have **musk sacs** or **castors**, which contain a scented substance used for marking their territory. In addition, beavers have two other sacs that contain an oily substance in which they can rub on their fur to help repel water.

The tail of a beaver is unique. It can be used for many different purposes, such as a warning device, a supporter, and a rudder. When a beaver sees or hears danger, it slaps its tail on the surface of the water so that other beavers know that danger is close by. A beaver's tail provides support when sitting on land and it can be used as a swimming rudder, which propels the beaver quickly through the water.

Beavers also have unusual feet, which are adapted for swimming in water. Their back feet are webbed like duck's feet and their front feet are more versatile with long claws for digging. They also use their front feet to manipulate food and to build dams and lodges.

The front teeth of a beaver could be a dentist's nightmare. Their teeth constantly grow throughout their entire life. In order to keep their teeth an appropriate length, beavers have to wear them down on wood.

Beavers have poor eyesight, so in order to compensate, beavers use their keen sense of smell to find food and to watch for predators.

To prevent water from getting inside the beaver's nostrils or ears, they have special valves that close when they dive underwater.

Beavers are herbivores, which means that they only eat vegetable matter, such as grasses, mushrooms, duckweed, and stems and roots of water plants. They also eat bark, twigs, and buds off of certain types of trees. Occasionally, beavers cut down trees in order to eat the limbs if there is nothing else available to eat.

The habitat of a beaver is important to other organisms as well as itself. Instinctively, beavers build dams, which create flooded, pond habitats to live in. They prefer to use new wood because it holds water back. If they build their dams with old rotting wood, it will be leaky and may collapse. Beavers also use wood to create lodges. When looking at a lodge you may notice that there is no opening for beavers to enter. Beavers secretly build their entrance underwater. This gives them the ability to slip into their lodge quietly without people or predators noticing them from above the water's surface. Also, beavers dig burrows into banks when they are unable to build a lodge.

OBSERVATIONS:

Students will observe a beaver pelt, skull, scat, twigs, and tracks. By using these observations, students will learn about certain characteristics that make a beaver unique, such as their pelt, tail, feet, skull, diet, and habitat.

PROCEDURE:

Teacher Preparation:

Make sure that you take all of the materials out of the module that are listed above. Use the beaver pelt, skull, scat, tracks, and twigs to describe the characteristics of a beaver. The other materials (picture of Europeans, beaver pages, lace, beads, needles, buttons, mirror, jewelry, pot, spices, gun, and fish hooks) will be used for the Beaver Pelt Tale Activity. See the script at the end of this activity for details.

DISCUSSION:

Ask students what each item that characterizes a beaver would be used for. Use the background information above to help facilitate the discussion. After observing the characteristics of a beaver you can do the Beaver Pelt Tale Activity, which talks about how Native Americans and Europeans played an important role in the beaver pelt industry.

EVALUATION:

- Before the discussion, have students write down what they think each item should be used for and why it might be adapted in a certain manner (beaver skull, pelt, scat, tracks, and twigs).
- Have students create an informational skit to present to younger students on the beaver tale activity.
- Have students research current hunting and game policies on beaver hunting.
- Visit a beaver pond/lodge and have students identify signs of beavers (chews, dam, lodge, etc.).
- Have each student present one item (beaver pelt, skull, scat, tracks, and twigs) and why it characterizes a beaver to the class.

EXTENSIONS AND MODIFICATIONS:

- Have a local hunter or trapper come to class to talk about current beaver hunting practices.

Pennsylvania Native Americans and the Impact of Beaver Pelts

Lesson Plan

Beaver biology 101 lesson

Verbal

So here is a BEAVER PELT

- Largest North Amer. rodent 40-60 lb (18.2-22.2 kg)
- Dense underfur with longer guard hairs on top
- Good insulation for being in water
- Musk sacs (castors) very scented substance used to mark territory
- Two other sacs – oily substance to rub on fur to make more water repellent

BEAVER TAIL

- Unique adaptation. What used for?
 - 1) carpentry tool – but not main use
 - 2) swimming rudder, propeller
 - 3) support when sitting up
 - 4) warning device – slaps water with it

BEAVER FEET

- Adapted feet
- Back feet – webbed for swimming
- Front feet – versatile, long claws for digging, manipulating food, working on dams/lodges

BEAVER HEAD/ SKULL

- Bad eyes, uses smell a lot to find food
- Diving under water, valves can shut ears and nostrils
- Front teeth – dentist nightmare
 - Continual growth – must wear down on wood

BEAVER DIET

What do they eat?

- Vegetable matter: prefer soft plants (grasses, mushrooms, duckweed, stems and roots of water plants)
- Also eat bark, twigs, buds of certain trees.
- Only cut down trees, eat limbs when nothing else available (unless using them for construction)
- After they eat – they produce feces or SCAT

HABITAT

- Beavers build dams to create flooded, pond habitats to live and eat in
- Instinct, not learned behavior, to build
- New wood instead of old wood – why?
- Lodge to live in
- But also can burrow into banks if cannot build lodge

Action

Pass around beaver pelt

Pass around beaver feet

Point things out on skull – do not pass around

Have various foods that they eat available to show (pass around eaten wood pieces)

Pass around SCAT

Verbal

Three main tribes lived in NW Pennsylvania in mid 1600's
Haudenosaunee (Iroquois), Lenni Lenape (Delaware),
and Erielhonan (Erie)

Each territory had plenty of beavers, creating pond habitats
maybe like the one here (point at pond)

Native American Uses: killed only what they needed
Blankets, clothing, shelter

When the Europeans arrived – things began to change
Some Europeans began to trade with Native Americans

European interest in furs, animal skins – beaver felt hats, mink
coats, deerskin jackets

Native Americans could provide the furs, pelts – through
hunting (often swim out to lodge, club them)

In exchange, the European traders had many things Native
Americans had never seen that would make life easier for them,
so trading was established

So as a European trader, I might establish a trust/relationship
with a tribe

I might trade some metal pots and spices for some pelts

Other things I might trade – cloth, ribbons, color beads, needles,
buttons, mirror, and jewelry

How about something to help the Native Americans hunt better
– guns and gunpowder, fish hooks

Other things they traded commonly:
knives, axes, metal beaver traps
Everybody is satisfied (trader and Native Americans)

Sometimes would trade things that were less appropriate – such
as bottles of alcohol, rum

Native Americans never had this before

In fact, sometimes traders would give Native Americans lots of
rum before trading, taking advantage of their impaired judgment
and made unfair trades

I have more things to trade and want more pelts, but what has
happened to all the beavers in this territory?

They are gone, so if the Native Americans wanted to keep
trading with me, what would they do for more beavers?

Do you think this caused some conflict between tribes?

Yes – tribes would not let other tribes come onto their land and
hunt their animals.

Action

*Divide students into three groups, each representing a
tribe and their territory*

Use tribe signs for each group

Spread out “beaver” pages on ground for each tribe

Show picture of dressed up Europeans

Pick a tribe to work with

*Make a trade - Take some pelts “beaver pages”, give them
a few items*

Make a trade - Take some pelts, give them items

*Trade gun for lots of pelts, take all remaining pelts from
group*

If have, do not give out

Show bottle, but do not give to a group

*Get students to answer that they could hunt beavers from a
neighboring tribe's territory*

Verbal

In fact in the mid 1600s, the Beaver Wars broke out between tribes – all spurred by the interest in providing beaver pelts to European traders to get more stuff.

What impact did this have on the Beaver population in Pennsylvania? Native Americans and Europeans were hunting beavers quickly, sometimes with the newly arrived firearms, as many as possible so they could trade more. So beaver population went from having millions to just thousands.

High demand continued, and the demand of furs and pelts helped spur westward exploration and movement.

Beaver population still suffered even into early 1900s,
Today, beaver populations have rebounded.
Today's pelts - \$10-15



NOTES (PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):