

ALBERTA ENVIRONMENT

Living and Loving the Life of a Beaver



Alberta
ENVIRONMENT

Kananaskis Country

This publication is part of a series of field study programs produced by the Environmental Education Program of Natural Resources Service in Kananaskis Country and Fish Creek Provincial Park. The publications have been written to address the mission of Alberta Environment and increase students' environmental awareness, understanding, interaction and responsibility for the natural world in which they live.

The publications are developed in a close working relationship with teachers, community educators and program writers. Programs focus on the areas of environmental education, science, social studies and language arts. They are also developed to emphasize elements of environmental literacy, lifestyle, and citizenship.

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Living and Loving the Life of a Beaver

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TABLE OF CONTENTS

	Page
1.0 Overview	1
1.1 At a Glance	1
1.2 Program Summary	2
1.3 Activity Summary	3
1.4 Program Objectives	4
1.5 Curriculum Tie-ins	5
2.0 Pre-Story Activities	6
2.1 Activity - What is Wild?	6
2.2 Activity - Plants and Animals	8
3.0 Living and Loving the Life of the Beaver	11
3.1 Chapter 1 - Basic Needs	13
3.1.1 Activity - Everybody Needs a Home	20
3.1.2 Activity - What's That Habitat?	23
3.2 Chapter 2 - Beaver Characteristics	27
3.2.1 Activity - Design a Beaver	36
3.3 Chapter 3 - Beaver Homes and Habits	39
3.3.1 Activity - What's for Dinner?	48
3.4 Chapter 4 - Adaptations and Predation	51
3.4.1 Activity - Beaver Enemies	59
3.5 Chapter 5 - Respect For All Living Things	61
3.5.1 Activity - Make a Coat	70
4.0 Program Evaluation	72

1.0 OVERVIEW

1.1 AT A GLANCE

TOPICS	Meeting Basic Needs. Families. Communities.
PROGRAM LEVEL	Grades 1 - 3 / Ages 6 - 8.
TIME REQUIRED	Story and Activities: 6 - 7 hours over a two week period.
STAFF REQUIRED	One teacher.
BEST SEASON	The story and activities can be carried out at any time of the year.
SUGGESTED LOCATIONS	The activities can all be accomplished in the classroom.



1.2 PROGRAM SUMMARY

The program, *Living and Loving the Life of a Beaver*, is a story and activity guide about a beaver community; a community which is explored through the adventures of two children named Jennifer and Tyler. The children's class go on a field study to visit a beaver pond. On the way, the two children get side-tracked and they meet a beaver named Jedediah. Jedediah shrinks them down in size and takes them back in time to a beaver community where they learn about the life of a beaver.

Two introductory activities provide a “warm-up” for the story. In addition, each chapter of the story is followed by one or more activities which reinforce the concepts learned in the story.

This program is part of a written unit on needs, families, and communities. Each program can be used separately or as a unit of study. The complete unit includes:

Welcome to My Home - a field study designed to encourage students to discover how beavers meet their needs within the environment. This field study offers an excellent introduction to the story *Living and Loving the Life of a Beaver*.

Pond Pals - a field study where students discover how plants and animals meet their needs in a pond community. In a pre-field study activity, students create a pond on the bulletin board. A selection of post-field study activities are included.

1.3 ACTIVITY SUMMARY

There are eight activities included with this program. They are:

- **What is Wild?**
Students find pictures of animals and classify them as being domestic or wild.
- **Plants and Animals**
Students are asked to classify living things as being a plant or an animal. Handouts are provided.
- **Everybody Needs a Home**
Students are introduced to the basic needs of people and animals.
- **What's That Habitat?**
Students match animals up with their homes based on those animals' needs.
- **Design a Beaver**
Students discover the unique features of a beaver by putting together a beaver puzzle and discussing the features.
- **What's for Dinner?**
Students will list or draw all the things they eat for dinner and compare the things on their list with what a beaver eats.
- **Beaver Enemies**
There are many birds and animals which may prey on beavers. Students will recognize which animals are beaver predators.
- **Make a Coat**
Students make themselves a coat out of paper and decide what material they wish their coat could be made of. They then discover whether their chosen material is renewable or non-renewable. This is related to the use of beaver pelts for coats.

1.4 PROGRAM OBJECTIVES

All of the following objectives need not be met. Teachers can select certain objectives which can be emphasized during the program. Students will have the opportunity to:

1. Understand that some animals are domestic while others are wild.
2. Gain an awareness of the natural environment through experiential exploration and learning.
3. Understand that plants and animals are distinct and have different characteristics.
4. Understand that all living things have the basic needs of food, water, shelter, and space.
5. Understand that animals rely on plants for food.
6. Use words and designs to describe and illustrate the environment.
7. Develop an awareness and sensitivity toward the environment and begin to recognize interrelationships.
8. Understand the concept of predation.
9. Understand that all living things are important to, and an integral part of, the environment.
10. Develop of a sensitivity and respect for living things.

1.5 CURRICULUM TIE-INS

This program supports selected themes and objectives outlined in the Alberta Curriculum for Division 1 Science and Social Studies. Selected themes and objectives are covered using the natural environment as the focus. Such a focus allows students, at their own level, to explore the concept that they are **a part of** rather than **apart from** the world in which they live.

DIVISION	SUBJECT	SUBJECT MATTER
One	Science	Living Things and the Environment - Plants and Animals - Environment
One	Social Studies	Me and Others Topic A - My School Topic B - My Family
Elective: One	Social Studies	People Today Topic A - People Nearby Topic B - People in Canada

2.0 PRE-STORY ACTIVITIES

2.1 WHAT IS WILD?

This activity is designed to help students understand the difference between domestic and wild animals. A domestic animal is one which lives with and is dependent upon humans for survival while a wild animal is capable of looking after itself.

Objective

Students will understand that some animals are domestic while others are wild.

Curriculum Tie-in

Science: Living Things and Environment - Plants and Animals

Students will describe and classify plants and animals into groups with common characteristics.

Time Required

50 - 60 minutes

Materials

- a selection of old magazines with pictures of animals
- 1 piece of poster board or construction paper for each student
- 1 pair of scissors for each student
- 1 container of glue for each student
- brightly coloured yarn and clothes hangers (optional)

Instructions for the Teacher

1. Have the students go through magazines to find pictures of as many animals as they can.
2. Talk about the differences between domestic and wild animals. Once students have a collection of animal pictures, have them classify their pictures according to whether they are of domestic or wild animals.
3. Working in groups or individually, have students make separate collages or charts: one for domestic animals and one for wild animals. Once the collages have been put together, display them in class.

Optional

4. Draw a large mural on the blackboard or on a large piece of paper. The mural should include a forest, field, lake, and ocean. Have the students cut out pictures of animals and place them in the right home, e.g., a bird in the sky, a fish in water, or a deer in the forest.

5. Have students glue their animal pictures to construction paper. Make an animal mobile with the pictures. Students can work individually or in small groups. Use brightly-coloured yarn and clothes hangers to hang the pictures.
6. Have students bring photos of their pets to class (or pictures of the pet they would like to have) and have them compare the differences between domestic and wild animals. Ask the students to share their pictures of their pets and to explain to the rest of the class how they care for their pets.

2.2 PLANTS AND ANIMALS

A plant is a living organism that is capable of manufacturing sugars and starches through a process known as photosynthesis. An animal is incapable of manufacturing its own food and must feed on other living organisms.

Objectives

Students will understand that plants and animals are distinct and have distinct characteristics.

Curriculum Tie-In

Science: Living Things and Environment - Plants and Animals

Students will classify things as plants or animals.

Time Required

40 - 50 minutes

Materials

Each student will need:

- 1 copy of the *Plants and Animals* handout (see page 9)
- 1 copy of the *Plants and Animals Chart* (see page 10)
- 1 pair of scissors
- glue

Instructions for the Teacher

1. Make copies of the handouts. Have students colour and cut out the pictures of the plants and animals.
2. Discuss how living things can be classified as plants or animals. Discuss the differences between plants and animals. Make sure students understand how to classify before beginning the activity.
3. Have students classify the pictures according to whether they are plants or animals and have them glue the pictures under the appropriate headings on the chart.
4. Have the students make up their own definition of what a plant is and what an animal is.

PLANTS AND ANIMALS



PLANTS AND ANIMALS CHART

My Name: _____

Plants

Animals



*Living and
Loving the Life
of a Beaver*



Chapter One

Basic Needs



Chapter One: Basic Needs

The Grade One class visits a beaver community. On the way, Jennifer and Tyler get sidetracked.

“All right, Grade Ones, recess is over,” Mrs. Cameron, the Grade One teacher called over the laughing, screaming classroom of six-year-old students. “All of you, please settle down, now! Come on, everyone, find your seats! Preferably today! Thank you, that’s much better.”

As everyone sat down at their desks, Mrs. Cameron walked up to the front of the classroom, where she had drawn a picture of a huge beaver on the blackboard.

“Okay!” Mrs. Cameron said. “Tomorrow morning, as you all well know by now, we’re going on a field study to Willow Lake to look for beavers. We’re going to find out what live beavers look like,” she paused and looked at Tyler Holden, who had been kicking his desk, but who now found it hard to move his leg. “We’re going to find out where they live,” again she paused, focusing on a fidgety Jennifer Jones, who suddenly froze in her seat. “We’re going to find out what beavers eat,” Tyler squinched up his mouth when Mrs. Cameron gave him yet another look. “We’re going to find out how and why beavers build dams, and we’re going to find out just about all there is to know about beavers. So everybody please be sure to bring a warm coat and boots tomorrow for the field study.”

Tyler Holden, a boy with a handful of freckles on his nose, leaned out of his desk and whispered to Jennifer Jones, “Pssst. Hey Jennifer.”

“What do you want, Tyler?” replied Jennifer, as she sneaked a peek at Tyler, keeping a close lookout for Mrs. Cameron.

“Do you want to go looking for a beaver tomorrow morning?” Tyler asked.

“No way,” whispered Jennifer, wrinkling up her nose and shaking her head so that her long pigtails danced.

“Me neither,” Tyler agreed.

“But we have to,” Jennifer whispered back. “Mrs. Cameron said—”

“Forget it,” Tyler replied, “I’ve got a plan.”

“Yeah?” Jennifer’s eyes widened.

“You and I will be able to go anywhere we want to go and do anything we want to do,” whispered Tyler.

“All right,” grinned Jennifer.

“Who cares about any ol’ stinky beaver anyway?” Tyler giggled.

“Boy!” Jennifer whispered excitedly. “Are we going to have fun tomorrow.”

From the front of the class, where she had been giving details of the field study, Mrs. Cameron paused. She glanced at Jennifer and Tyler, sighed, and smiling a secret smile, continued her instructions. “Don’t forget your lunches,” she reminded the class.

* * * *

The next morning, a huge yellow school bus stopped beside the forest pathway that led to Willow Lake. The day was big and bright and beautiful. The doors of the school bus flew open, and the Grade One class came bounding out, laughing, yelling, singing, and very excited about their trip to see some real live beaver.

“All right, Grade One students, all eyes up here,” Mrs. Cameron ordered, clapping her hands. “Now, I want everyone to stay together in a single file behind me as we go through the forest to Willow Lake. And that means everybody stays on the pathway until we get to the lake. You never know what could happen if we don’t stay together.” She looked meaningfully at Tyler and Jennifer, “Do you understand? I want you all to repeat after me: nobody leaves the pathway.”

The Grade One class all sang out: “Nobody leaves the pathway.”

“Good! Good!” Mrs. Cameron exclaimed. “Now, let’s go! Everybody form a single file behind me and...wait a minute! Tyler Holden and Jennifer Jones, to the back of the line, please!”

“What? Who? Me? Oh, yes, ma’am,” exclaimed Tyler as he realized he had just been

ordered to go exactly where he wanted to go. What gives? asked a little voice inside him, but he was too excited to think any more about it. He saw Jennifer's mouth had fallen open in surprise and that was when he realized his own jaw was hanging down too. Snapping it shut, he glared at Jennifer who finally got the message and closed her mouth too. Then they both presented Mrs. Cameron with angelic faces.

"I want to make sure nobody leaves the pathway as we walk through the forest," continued Mrs. Cameron. "Can you two handle that?" she beamed brightly at the two children while the rest of the class hooted in disbelief.

"Yes, ma'am!" piped the two angels in unison.

"All right," Mrs. Cameron said. "You can stay at the back of the line, but just make sure you keep up."

Tyler and Jennifer tried not to run or smirk as they made their way to the back of the line.

Mrs. Cameron, seeing Tyler and Jennifer at the line's end, gave a satisfied nod. "All right, class!" she shouted and clapped her hands once again. "Away we go into the forest. Single file, please. Single file!"

With Mrs. Cameron in the lead, everyone marched down the pathway into the deep, deep, green forest. Everyone, that is, except Tyler and Jennifer. They had left the pathway.

Running and giggling, Tyler and Jennifer leaped and jumped along the tall, cool forest floor, banging their lunch boxes together. They ran over tree stumps and hollow logs, never stopping, not even for a breath. Screaming in delight, they held hands and skipped across a little trickling creek, splashing water on each other. Once on the other side, Tyler let go of Jennifer and dropped his lunch box as he climbed up a spruce tree and swung upside down.

"Look Ma!" Tyler yelled. "No hands!"

"Dumb boy," Jennifer laughed and threw a handful of spruce cones at him. One cone hit Tyler in the head, making him fall from the branch, all the way down, crashing to the forest floor. Tyler wasn't moving.

"Tyler!" Jennifer cried, terribly scared, as she ran to him, dropping her lunch box. "Tyler!"

I'm sorry! Are you all right? Tyler? Tyler, wake up! Tyler!"

For one horrible moment, Tyler looked dead, then he suddenly opened his eyes and laughed at her.

"Got you! Who's silly now?" Tyler teased, popping to his feet.

"Tyler Holden!" Jennifer exclaimed angrily. "You scared me! I thought...!"

Tyler shook off the spruce cones and laughed, snatching up his lunch box as he took off running.

"Hey," Jennifer called after him, grabbing her own lunch box, "wait for me!"

Tyler kept running. He broke out of the trees and into a rolling, wide-open meadow the size of a football field. Jennifer chased after him as he ran up and down and over the bobbing grassy hills, kicking up dandelion heads and sweet clover. Bees, butterflies, and birds took to the air. Candy-yellow sunshine splashed over everything.

"Tyler!" Jennifer wailed. "Will you wait up?"

Tyler slowed down on the other side of the meadow and sat down. Jennifer finally caught up and plopped down beside him, out of breath.

"Are you hungry?" asked Tyler.

"Yeah," Jennifer panted, "thirsty, too."

"Do you want to eat lunch now?"

"Okay," Jennifer agreed.

"What did you bring?" Tyler asked, peering in as Jennifer flipped open her lunch box.

Jennifer searched through the box, "Ugh! Egg sandwiches, carrot sticks, an apple, some cheese, and milk. What did you bring?"

Tyler casually opened his lunch box. "A Twinkie, Cherry Cola, Reese's Pieces, and a

peach-yogurt-peanut-butter-and-tuna-fish sandwich," he announced.

"That's gross!" Jennifer said, looking sick.

"Okay, then, I won't give you a bite!" Tyler yelled.

"Thank you!" said Jennifer in reply.

"Gee-whiz! You try to be nice," Tyler pouted.

It was very beautiful in the forest. Sunlight poked and popped in and out of the tree branches. Tyler and Jennifer pushed themselves backwards into the shade and sat against a big, green, moss-covered tree stump, wolfing down their sandwiches.

"Boy, this is great, huh?" Tyler asked through a mouthful of his peach-yogurt-peanut-butter-and-tuna-fish sandwich.

"Yeah," agreed Jennifer, swallowing a piece of her egg sandwich.

"I bet you anything we're having a lot more fun than Mrs. Cameron and the rest of the class," Tyler asserted. "Hah! They're all probably lost somewhere, still looking for beavers."

"Ha-ha-yeah!" Jennifer giggled. "Boy, who cares about any ol' stinky beaver anyhow?"

"Who's stinky?" a voice suddenly boomed behind them.

Tyler and Jennifer were so scared they almost jumped right out of their boots! Lunches flew everywhere as the children leaped to their feet, whirling around to see who, or what, had spoken.

They saw it. It was right there.

Perched on top of the green, moss-covered tree stump, it looked like a big fat Teddy Bear, but it was alive! It stood over half a metre high, its back feet webbed like a duck's and its front ones shaped like little monkey's hands with sharp, sharp claws. It had a tail like a Ping-pong paddle and long, orange buck teeth and it was looking straight at Tyler and Jennifer.

“I said, who’s stinky?” it demanded.

“J-J-J-Jenniferrrrr!” screamed Tyler.

“T-T-T-Tylerrrrr!” screamed Jennifer.

Tyler and Jennifer looked at each other with big round frightened eyes, and then looked back at the thing looking at them.

“It-it-it’s a talking beaver!!!” Tyler and Jennifer screamed.

“Well, whoop-dee-doo,” the beaver replied.

3.1.1 EVERYBODY NEEDS A HOME

All living organisms require food, shelter (a home), water, and space. In this activity students will be introduced to the concept of basic needs by looking at how their own needs are met.

The teacher should conduct this activity after reading Chapter One out loud to the students. Relate this activity to where the children in the story go on a field study to explore a beaver's home.

This activity can also be found in the program *Welcome to My Home*.

Objective

Students will understand the basic needs of humans and other animals.

Curriculum Tie-Ins

Science: Living Things and Environment - Plants and Animals

Plants and animals are living organisms. Each has its specific characteristics and particular needs to sustain life.

Plants and animals live in the habitats for which they are best suited.

Time Required

30 - 40 minutes

Materials

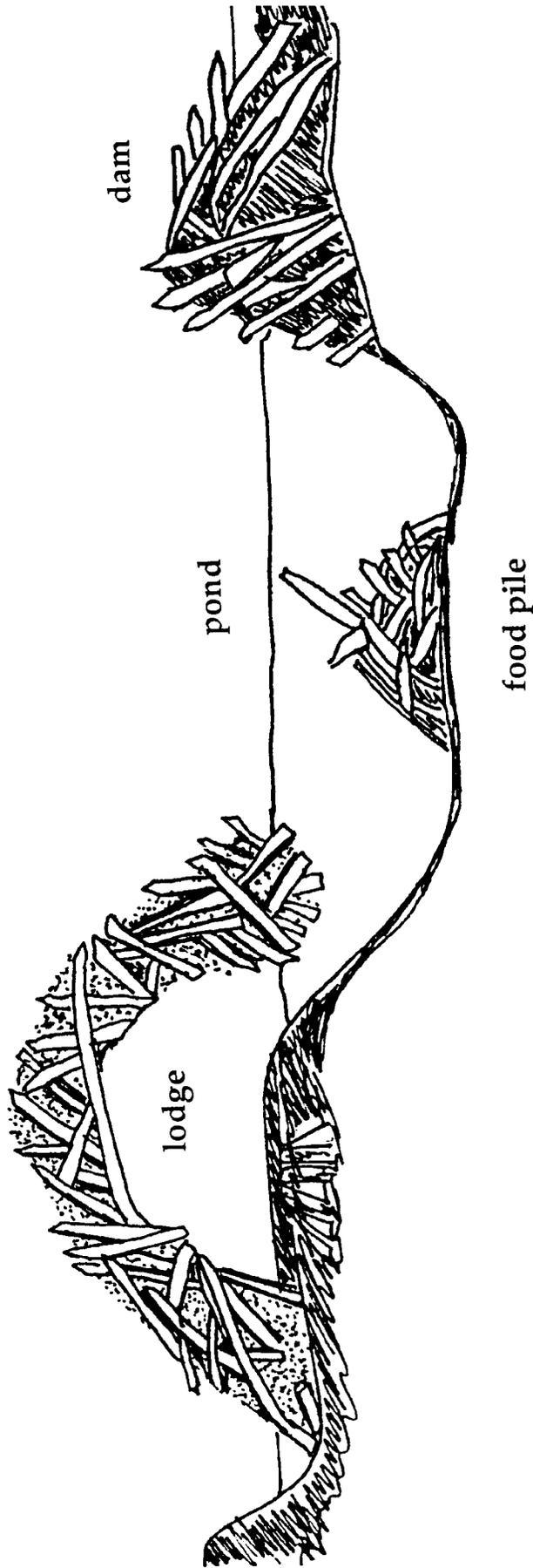
- 1 copy of the drawing of the *Beaver Home* (see page 22)
- 1 piece of drawing paper for each student
- 1 package of crayons for each student
- 1 picture of a beaver

Instructions for the Teacher

1. Using the crayons and paper, have the students draw a picture of where they live. They should include a place where they cook, a place where they sleep, a place where they get water, and their neighbourhood.
2. When their pictures are complete, ask the students about what they drew. Ask them about the things they need to live. Explain the concept of basic needs, the things we need to survive. Compare those basic needs for survival with other needs (*love, health, education, safety, etc.*) and wants (*television, toys, etc.*)
3. Display the students' pictures in the classroom and explain that each of them has a home.
4. Show the students a picture of a beaver. Ask the students to close their eyes and imagine what kind of home they think that beavers live in. Ask them to describe where they think a beaver lives.

5. Show them the picture of the beaver home. Talk about the lodge being the beaver's home. To get into its home, the beaver must swim underwater and up through a tunnel into a dry chamber where it sleeps. Explain that beavers build dams to stop the water from flowing away. Water builds up behind the dam forming a pond which is like the beaver's neighbourhood.
6. Discuss the fact that beavers need a home, a neighbourhood, food, and water just as people do. Ask the students where they get their food from (*the store, the farm*). Where do beavers and other animals get their food from? (*the forest, field, or pond*)
7. Ask the students to name three reasons why people and animals need a home. (*Animals need homes for warmth, protection from weather, safety from predators, and a place to raise their young.*)

BEAVER HOME



3.1.2 WHAT'S THAT HABITAT?

One of the basic needs of all living organisms is shelter or a home. In this activity, students will discover some places that different animals call home.

The teacher should conduct this activity after reading Chapter One out loud to the students. This activity will provide a frame of reference for students while they listen to Chapter Two.

Objective

Students will understand that animals and people have basic needs.

Curriculum Tie-Ins

Science: Living Things and Environment - Plants and Animals

As living things, all plants and animals grow, require food, water and air, respond to their environment, and reproduce their own kind.

Plants and animals live in the habitats for which they are best suited.

Time Required

40 - 50 minutes

Materials

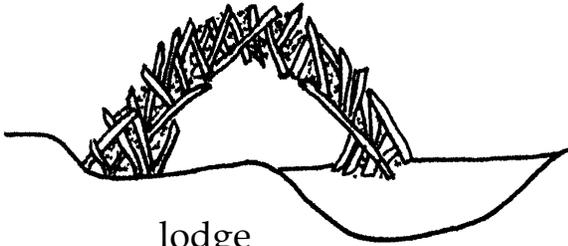
- 1 copy of the *Homes* handout for each student (see page 25)
- 1 copy of the *Where Do They Live?* handout for each student (see page 26)
- 1 pair of scissors for each student
- glue
- 1 package of crayons for each student (optional)

Instructions for the Teacher

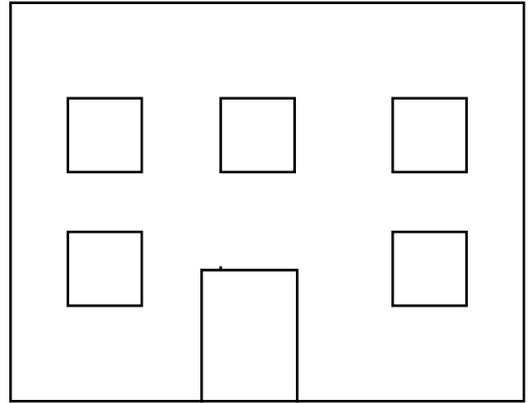
1. Make one copy of each of the handouts for each student.
2. Draw and/or write the following headings on the chalkboard: Food, Water, Shelter.
3. Read each heading out loud and have students repeat it.
4. Have students discuss each heading as it relates to them. For example, ask the students where they get their food, water, and shelter from.
5. Have students discuss how animals meet their basic needs. Compare and contrast how people and animals meet their needs.
6. Using the student's drawings from the *Everybody Needs a Home* activity, have students label the parts of their drawings where they find: food, water, and shelter.
7. Hand out the worksheets. Have the students cut out the people and animals, and place them in the correct space, corresponding to the home they would live in.

HOMES

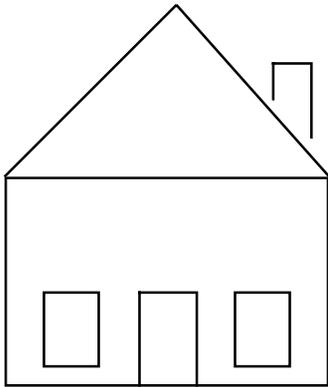
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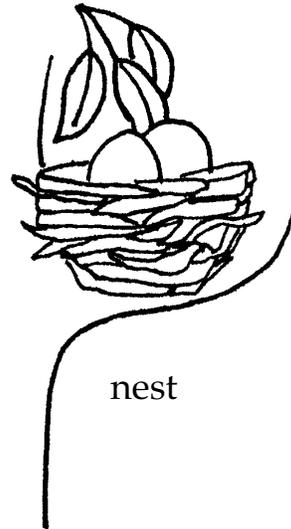
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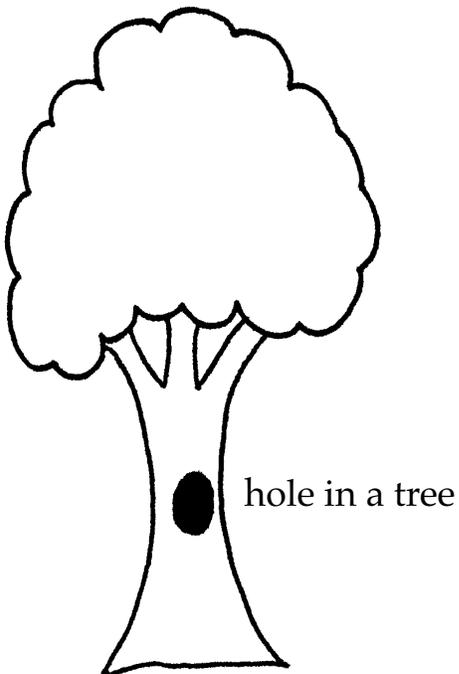
apartment



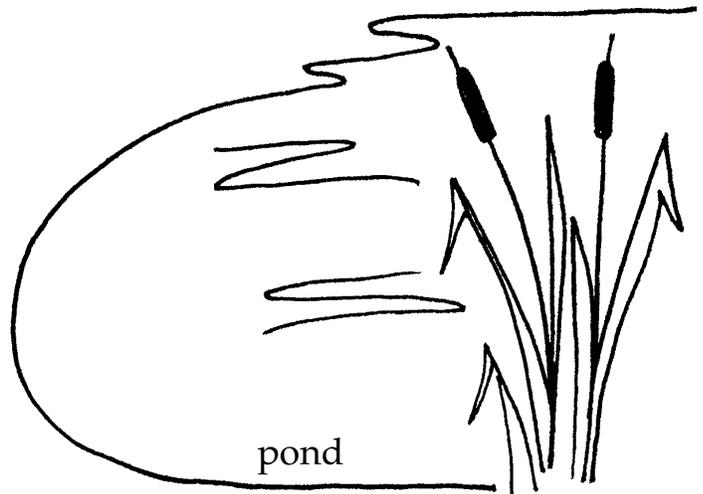
house



nest

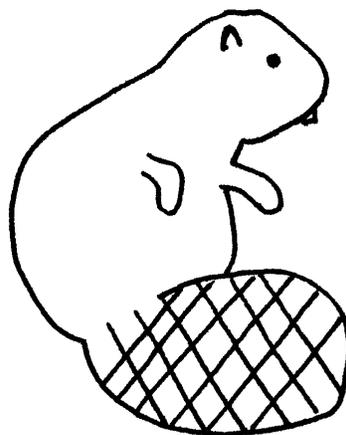
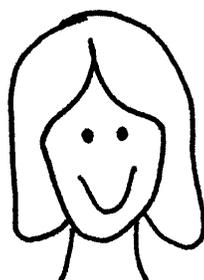
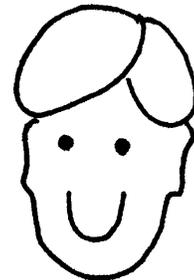
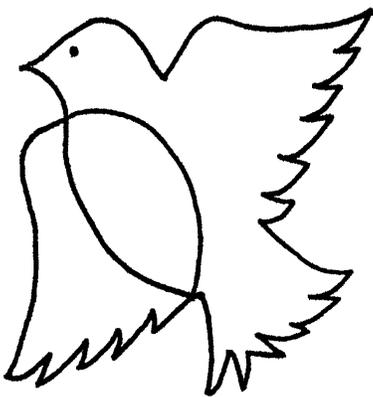
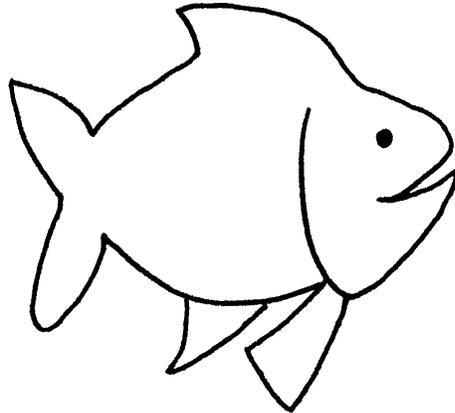


hole in a tree



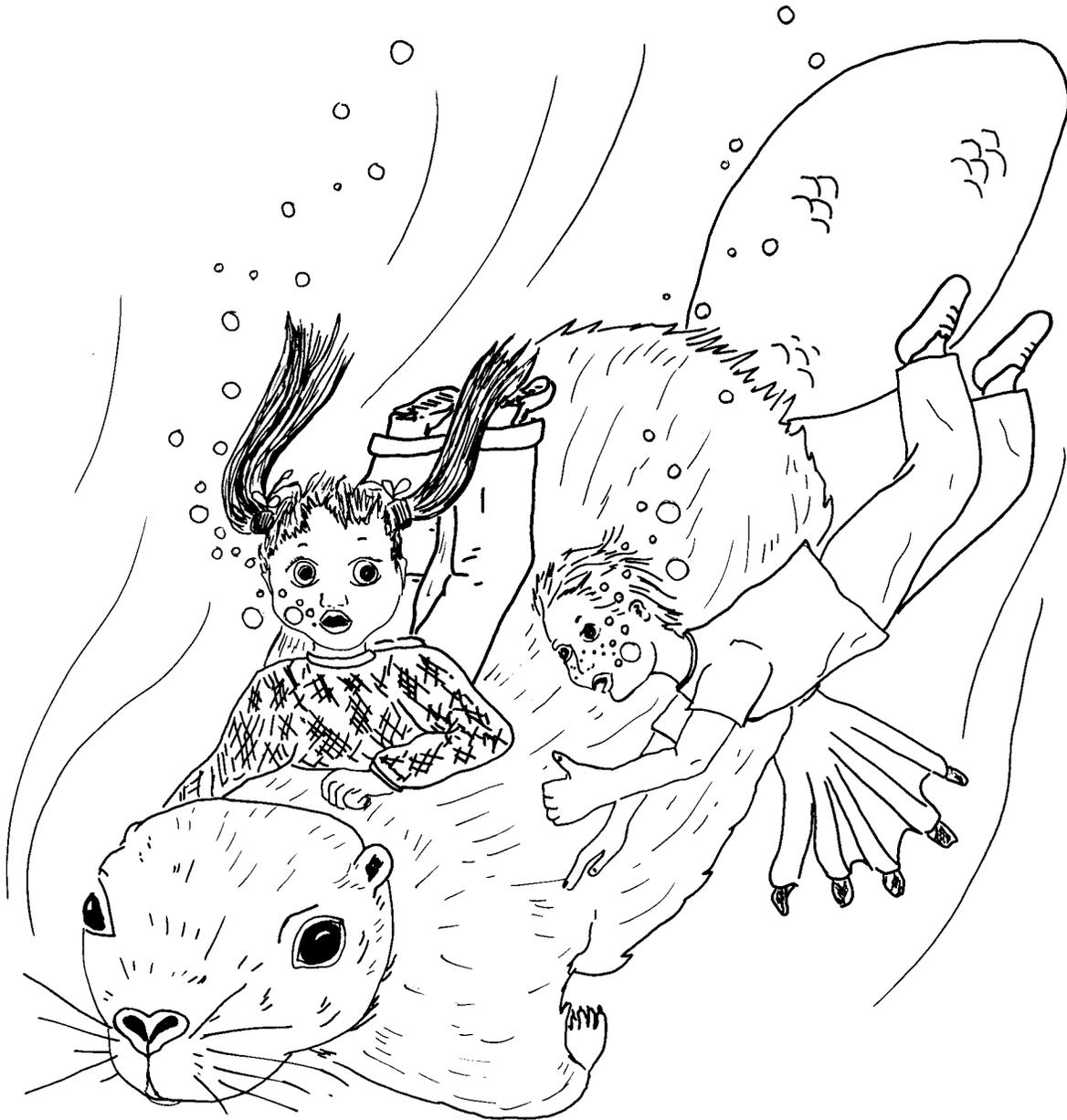
pond

WHERE DO THEY LIVE?



Chapter Two

Beaver Characteristics



Chapter Two: Beaver Characteristics

Jennifer and Tyler meet Jedediah the beaver. He shrinks them down in size and takes them back in time to a beaver community where they learn that beavers are well adapted to live in a pond community.

Tyler and Jennifer could not believe what they were seeing. They could not believe what they were hearing. It was incredible, they were face-to-face with a walking, talking beaver! He was old and fat and shaking with anger.

“I said, whoooo’s stinky?” the old beaver shouted at Tyler and Jennifer. Waving his little furry fists at them, he furiously hopped up and down on top of the tree stump and shouted, “Come on, put ‘em up! I’ll show you who’s stinky! I’ll take on the both of you! Come on! Put ‘em up! Put ‘em up!”

“AAAAAAAAAAHHHHHHH!!!” Tyler and Jennifer shrieked as they took off running, abandoning their lunch boxes. They tripped and fell and got up and tripped again as they tore through the forest, crashing into each other, bouncing off trees, almost losing their boots.

They kept running and running and running, seemingly deeper and deeper into the forest, until Jennifer was suddenly stopped by a frightening thought; they were lost! The forest had suddenly turned into a giant, dark, terrifying place, and there was no way out!

“Tyler!” Jennifer cried. “Tyler, where are we?”

“What are you asking me for!” Tyler wailed. “I thought you knew!”

“I want to get out of here,” whimpered Jennifer. “We’re lost! We’re lost!”

“No, we’re not,” Tyler replied, trying to sound reassuring.

“Oh, yes, you are,” suddenly the old beaver was right there in front of them, “Hopelessly, helplessly lost!”

Tyler and Jennifer both screamed.

“Oh, cut that out, will you?” the old beaver said, munching on a Twinkie from Tyler’s lunch box. “You’re both right back where you started.”

“Well, well, how do we get out of here and back to the pathway?” Jennifer questioned nervously.

“That’s for me to know and for you to find out,” the old beaver snapped with a big buck-toothed smile.

“This is crazy!” Tyler exclaimed. “Beavers can’t talk.”

“Surprise,” the old beaver grinned.

“Mrs. Cameronnnnnn!” Tyler wailed.

“She can’t hear you, kid,” the old beaver said matter-of-factly. “Nobody can. You’re all alone here.”

“Oh, p-p-please,” Jennifer pleaded, “please help us find our way back to the pathway and Mrs. Cameron. Please?”

“Help you?” the old beaver barked. “After what you said. Who cares about any ol’ stinky beaver. That’s what you said, all rightee. Help you, I don’t think so.”

“She’s sorry,” Tyler groaned. “We’re both sorry.”

“Oh, suuurrrre, you’re sorry now,” smirked the old beaver. “Now that you’re lost, and only I know the way back to the pathway. Hah.”

“No, really,” Tyler protested. “we both care a lot about beavers. Why, we love beavers. Right, Jennifer?”

“We do? Oh, right! Yeah!” Jennifer agreed hastily. “Love them, hugs and kisses.”

“Liar, liar, pants on fire!” the old beaver yelled.

Tyler and Jennifer looked at each other. The old beaver was right. They were lying and they both felt ashamed.

“Do you know what I’ve been through in my life?” the old beaver demanded, waddling up to Tyler and Jennifer in an angry huff. “Do you have any understanding of the trials and tribulations a beaver has to go through just to survive in this hostile world? Do you? No, you don’t. All you know about is worthless junk food,” he paused and added, “Tasty, without a doubt, but nonetheless junk.” Then he continued, eyeing Tyler all the while, “And all you do is play dumb, pretend-to-be-dead games. Well, I’m here to tell you that’s not funny, and I’m going to change what you think, starting right now.”

“Wha-what are you g-going to do?” Jennifer managed to stutter, wondering just what changes the old beaver planned to make in pretend-to-be-dead games.

“I’m going to take the both of you on Jedediah’s Crash Course in Living and Loving the Life of a Beaver,” the old beaver announced proudly. “I’m Jedediah, and my Crash Course is guaranteed to totally blow your image of beaver. Let’s go!”

“But... but, we don’t want to go,” Tyler protested.

Jedediah gave a big laugh. “You’ve just learned your first lesson,” he hooted, “in the life of the beaver, or in any other life for that matter, there will be times when what one wants to do is not in agreement with what one must do.”

Jedediah, the old, fat beaver suddenly threw his arms high into the air, stretching his paws to the sky. He squeezed his eyes shut as he began to chant a magical rhyme that sounded something like, “Bee-bop-a-loo-bop-She’s-my-baby-bee-bop-a-loo-bop-I-don’t-mean-maybe.” Suddenly, things started happening!!!

Giant, black thunder clouds began to swallow the once-clear, blue sky. Screaming winds, growing stronger and stronger lashed out at the trees, snapping off branches and hurling them around and around. It was a tornado!

“Forget this!” Tyler yelled as he bolted into a run.

“Let’s get out of here!” screamed Jennifer, trying to catch up with Tyler. But neither could get away. Tyler and Jennifer were caught by the tornado and tossed about, whirling like the branches. Lightning flashed; thunder exploded! Then something really weird started happening to Tyler and Jennifer. Ever so slowly, bit by bit, Tyler and Jennifer began to shrink, until they were smaller than Jedediah, the fat, old beaver.

“Jedediah, what’s happening to us?” Tyler screamed at the beaver.

Suddenly the tornado stopped, the sun came out and everything returned to normal. Except, it wasn’t normal.

For one thing, Jedediah, the fat, old beaver, well, he wasn’t fat or old anymore. He was young and strong and smiling.

“Ta-DAAAAAAAAA!” Jedediah sang.

Tyler, Jennifer, and Jedediah had gone back in time.

“J-J-J-Jedediah,” Tyler stammered, terribly afraid, “where are we? What happened to us? What’s going on here?”

“We’ve gone back in time, to the days of my childhood,” Jedediah replied. “We’re going to relive my life’s story, right from the beginning.”

“But-but-how-why-did Jennifer and I shrink?”

“It’s all part of my Crash Course in Living and Loving the Life of a Beaver,” Jedediah said. “You have to experience life from a beaver’s eyes, from the ground up.”

“But how did you do this?” Jennifer asked, amazed.

“Magic,” Jedediah whispered. “Some of us have it, and some of us don’t.” He winked.

“This is too weird,” Tyler protested.

“I want to go home,” whispered Jennifer.

“Are you kidding?” Jedediah said. “Before we’re finished, you’re going to feel like this is home.”

“But we don’t want...” Tyler began.

“I know,” Jedediah interrupted. “and that’s exactly why you’re here. Hop on.” Jedediah offered them his paw to help them climb up onto his furry back, but Tyler and Jennifer

resisted.

“Forget it,” Tyler said, crossing his arms over his chest. “we’re not going anywhere.”

“Yeah,” Jennifer agreed, crossing her arms in turn, “and you can’t make us.”

“Is that so?” Jedediah said. Glancing for a moment into the trees above them, he shrugged and waddled, turning to go. “I really think you’d be a lot better off sticking with me, quite frankly,” he muttered over his shoulder, “but, of course, if you’d rather do things your way, then who am I to interfere?”

Suddenly a giant black shadow fell across them and a Great Horned Owl swooped down and tried to grab Tyler and Jennifer with its huge, razor-sharp talons.

Tyler and Jennifer shrieked in terror. They were so, so tiny and the owl was so, so huge, and it was coming back.

“Come on, now get on,” Jedediah yelled to Tyler and Jennifer. “Hurry!”

Without a word, Tyler and Jennifer scrambled on top of Jedediah, grabbing hold of his dark brown fur.

“And awaaaaaayyy we go!” Jedediah shouted as he took off through the forest, waddling as fast as he could, bouncing Tyler and Jennifer up and down on his back. Up and down, up and down, up and down.

“I’m going to be sick,” Jennifer cried.

“Can’t you go any faster?” Tyler yelled to Jedediah, visions of owl talons dancing before his eyes.

“Hey! No back seat driving, kid,” Jedediah replied.

“Tyler,” Jennifer wailed, “the owl’s coming back!”

“Jedediah, get us out of here,” Tyler pleaded.

The huge Great Horned Owl dive-bombed Tyler and Jennifer again, swooping down from

out of the sky to snatch them off Jedediah's back. The children closed their eyes and screamed, but suddenly the ground under them dropped, and Tyler, Jennifer, and Jedediah plunged head over heels into freezing cold water. Spuh-lassshhhh!! They had fallen right into a deep-running stream.

Underwater, Jedediah slowed down his heartbeat, relaxed his muscles, closed his nostrils, and sank to the bottom of the stream like a bag of sand. Tyler and Jennifer hung onto Jedediah with everything they had. They couldn't see anything and they couldn't breathe. They could not breathe!

Finally, after what seemed like a hundred years to Tyler and Jennifer, Jedediah came up for air. Still riding on top of the beaver, Tyler and Jennifer coughed, gasped, and panted, sucking in great gulps of clean, fresh air. Oh, it felt so good.

The owl was gone.

"Hey, " Tyler sputtered, "Hey, we made it! We made it Jennifer! We're alive! We're alive!"

Tyler and Jennifer laughed and cheered.

"Was there ever any doubt?" Jedediah asked knowingly.

Gliding through the water with Tyler and Jennifer on his back, Jedediah used his thick, flat tail as a rudder, steering them as his webbed back feet paddled underneath.

"Hey... hey, you know, this is fun," Jennifer exclaimed.

"I didn't know beavers could swim," Tyler admitted.

"You're going to find there's a lot you don't know about beavers," Jedediah commented as he paddled to the sandy bank of the stream. Once there, Jedediah waddled up into the bush, pushing his way through the little trees.

"Where are we going, Jedediah?" asked Jennifer, searching the sky nervously for any sign of the owl.

"Oh you'll see," Jedediah replied.

In a short while they came to an opening in the bush that led into a wide, fresh-water pond complete with a beaver dam and a beaver lodge. In front of the lodge a family of beavers frolicked in the water. There was a father beaver, a mother beaver, and four little beavers or kits.

“Who’s that?” asked Tyler.

“My family,” Jedediah whispered.

“Yeah, do you live there?” Tyler asked.

“Yes,” Jedediah whispered. “That’s where I live, or at least where I used to live.”

“Hey,” Jennifer said, eager for more play, “let’s go over and see them.”

“I don’t think that would be a good idea,” Jedediah whispered.

“Why not?” asked Jennifer.

“I am no longer wanted there,” Jedediah whispered in reply.

Suddenly, the father and mother beaver saw Jedediah. Without any warning, they attacked. Snapping and growling, the father and mother beaver charged Jedediah, biting and clawing at him, driving him away from the pond.

“Hey! Hey! Jedediah!” Tyler yelled. “What’s going on?”

Jedediah waddle-ran away from the pond, with Tyler and Jennifer holding on for the ride of their lives. He stopped when he had lost his mother and father.

“I thought you said they were your mother and father!” Jennifer exclaimed.

“They are,” agreed Jedediah.

“No way, that can’t be,” Tyler objected. “No mother and father would do that to their kid.”

“They had to,” Jedediah stated quietly. “I’m over two years old, so I’m no longer allowed in their home. They taught me everything I needed to know about taking care of myself. It

was time for me to leave home.”

“When you’re only two years old?” Jennifer cried. “That’s wrong.”

“No, lassie, it’s right,” Jedediah corrected. “Probably when you leave home you’ll be around eighteen or nineteen. When beavers leave home they’re two years old. That’s because humans live until they’re about seventy or eighty years old. Beavers live only until they’re about fifteen. Beavers never stop growing, you see, we just get bigger and heavier each and every year. You saw how many brothers and sisters I had. There’s no way we could all fit in the beaver lodge together. There would be no room and not enough food. No, it was past my time to get out and start my own life. It all works out, you’ll see. That’s just the way it is.”

Jedediah carried a thoughtful Tyler and Jennifer back through the bush to the edge of the sandy bank overhanging the deep-running stream.

“Where are we going now, Jedediah?” Jennifer asked.

“Out there... that-a-way,” Jedediah said, pointing to the vast and green wilderness, the unknown. Then he jumped back into the stream.

“Oh, no!” Tyler yelled. “Here we go agaaaainnnn!”

Spuh-lassshhhh!!!

3.2.1 DESIGN A BEAVER

Beavers have many adaptations which enable them to survive in their habitat. Their waterproof fur keeps them warm and dry; their ears and nostrils can close when they are underwater; their lips can close behind their teeth to enable them to chew underwater; their teeth grow constantly as they get worn down from chewing; their flat tail acts as a rudder and a warning device; and their webbed feet assist them in swimming.

This activity should be conducted after reading Chapter Two. Relate it to where the children ride on Jedediah's back as he goes down underneath the water. The children realize that Jedediah is adapted especially for underwater travel while they are much more limited.

Objective

Students will discover that animals have distinct characteristics.

Curriculum Tie-in

Science: Living Things and Environment - Plants and Animals

Plants differ from animals in specific ways relative to the food they eat, how they obtain it, react to stimuli, and move.

Time Required

40 - 60 minutes

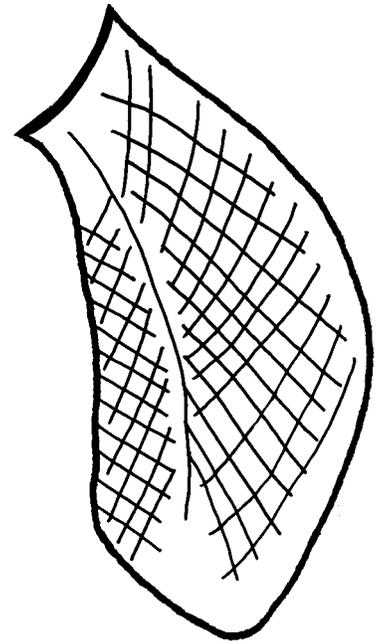
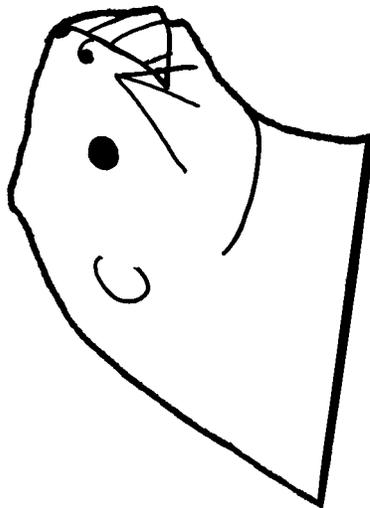
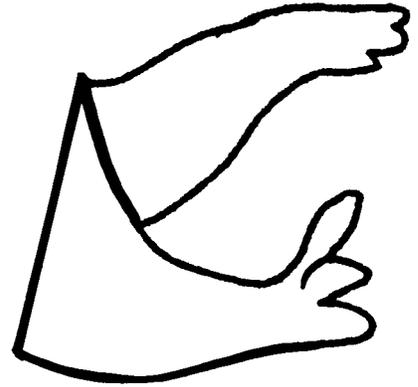
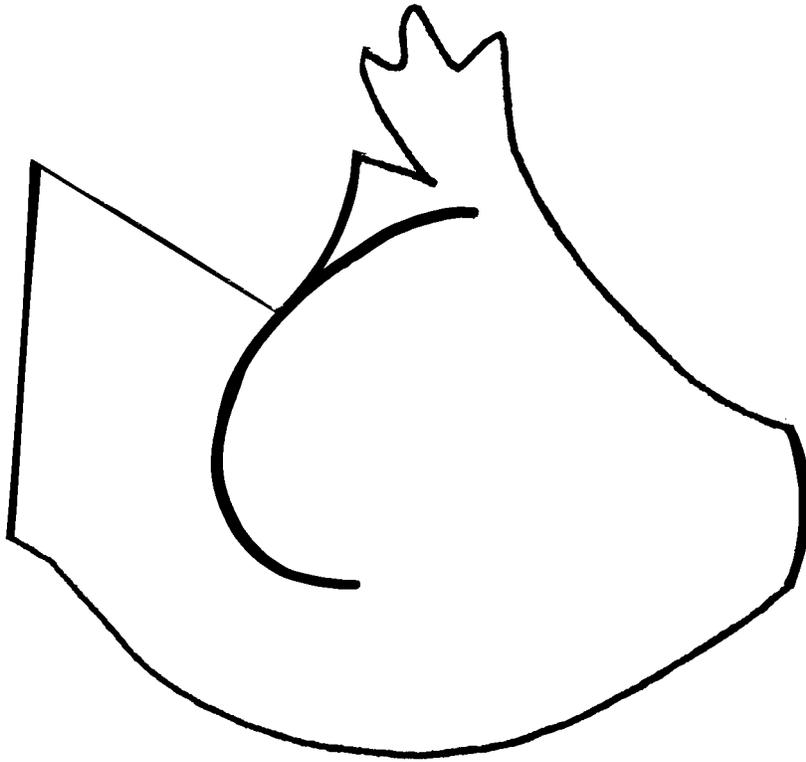
Materials

- 1 copy of the *Design a Beaver* handout for each student (see page 37)
- 1 copy of the *Beaver Outline* handout for each student (see page 38)
- 1 pair of scissors for each student
- glue
- 1 package of crayons for each student (optional)

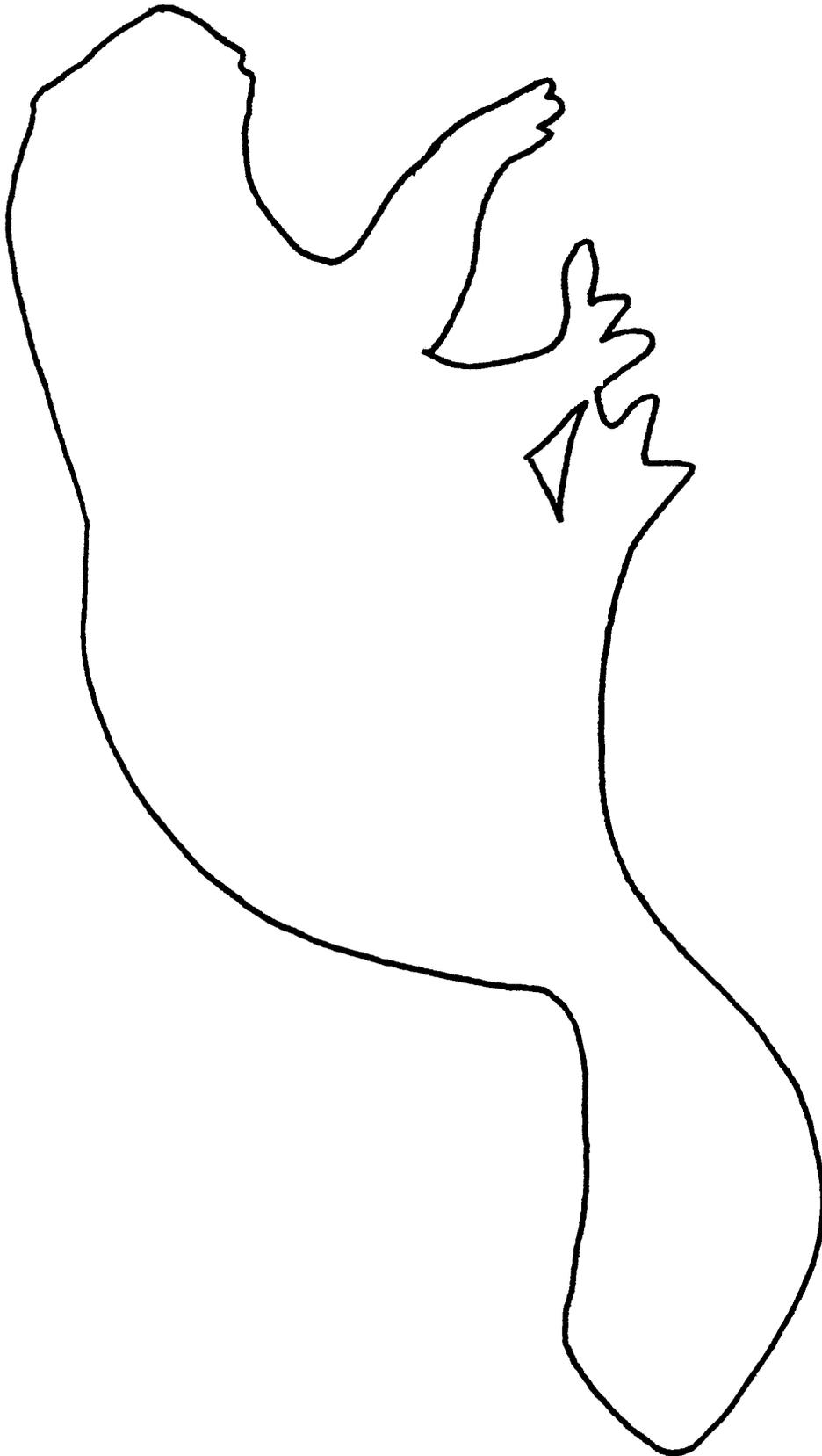
Instructions for the Teacher

1. Make one copy of each of the handouts for each student and hand them out.
2. Have students cut out and match the beaver body parts to the beaver silhouette.
3. Discuss the unique features of the beaver, such as webbed hind feet for swimming; a flat tail which it uses as a rudder for swimming and for balance while sitting; its forepaws that are dexterous and well-adapted for cleaning and combing fur; and their long front teeth (incisors) which grow continuously as they wear down from chewing trees.

DESIGN A BEAVER

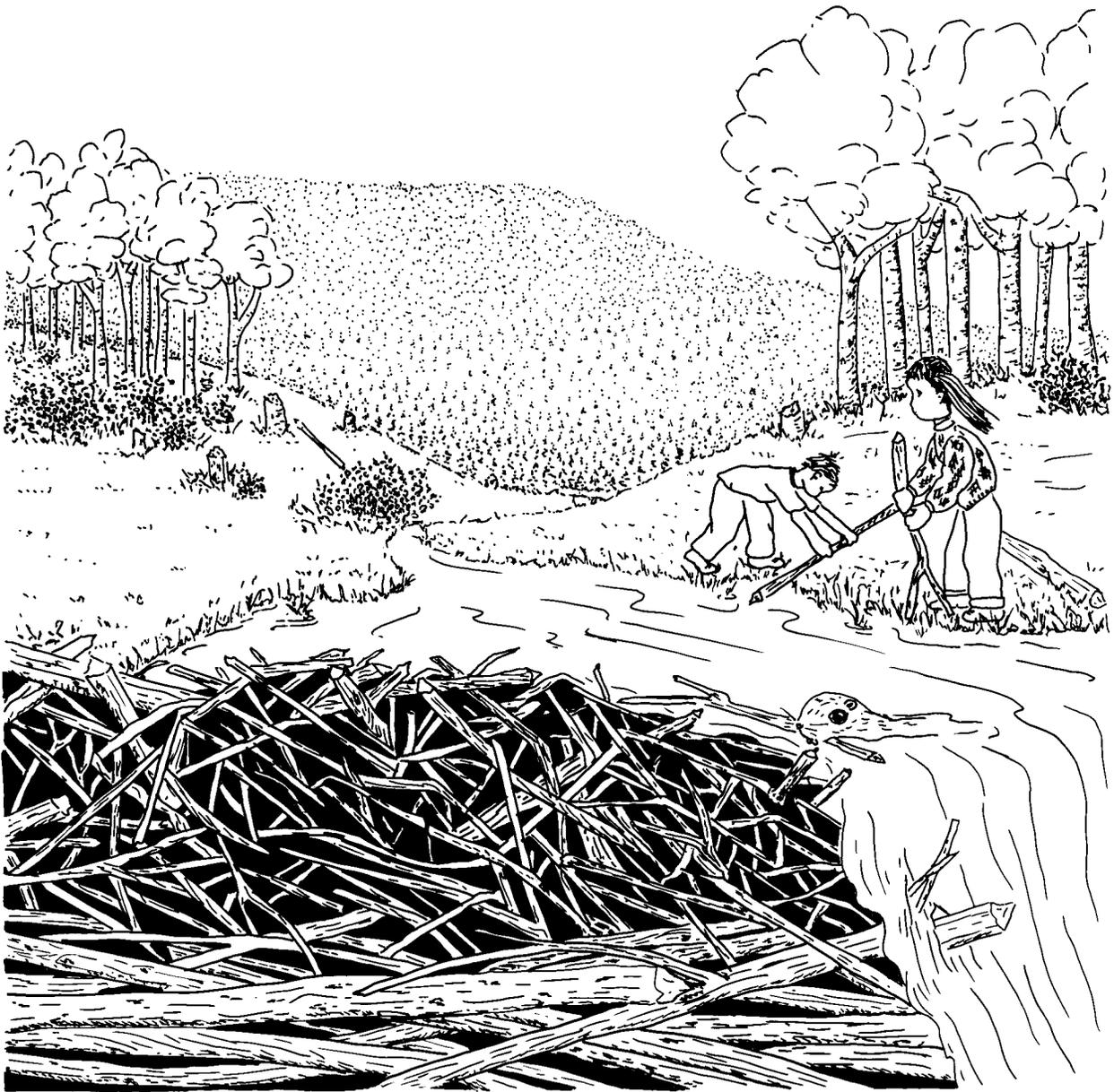


BEAVER OUTLINE



Chapter Three

Beaver Homes and Habits



Chapter Three: Beaver Homes and Habits

The children discover the home of the beaver through the eyes of the beaver. They learn about what beavers eat, how they eat, and that beavers store their food for winter.

Tyler and Jennifer were both lying back, sunbathing on Jedediah's back as he slowly paddled downstream.

"This is dreeeeaaaamy," Jennifer cooed lazily.

"Yeah," Tyler agreed. "Hey, I'm hungry. Is there a hamburger stand somewhere around here?"

Jedediah laughed. "No, no, there's nothing like that around here."

"What!" Jennifer exclaimed, sitting up. "Well then, what do you eat?"

"Come on," Jedediah said in answer. "I'll show you."

Jedediah swam to the grassy shore and carried them up under the trees near the water's edge.

"Is there a fish and chips place in here?" Tyler asked hopefully.

"No," Jedediah grinned, letting Tyler and Jennifer slither off his back. "Beavers are strictly vegetarians."

"Vegetarians?" Jennifer asked. "What are those?"

"We don't eat meat," Jedediah informed her.

"Oh, yeah," Tyler put in, "my aunt's like that."

"So, what do you eat, Jedediah?" Jennifer asked.

Jedediah turned to a willow tree and took a big bite out of it with his long, chisel-sharp front teeth. "Mmmm," he said, "tasty."

“You must be kidding,” Jennifer frowned. “That’s what beavers eat?”

“Sure,” said Jedediah, munching noisily. “we eat the bark from willow trees, poplar trees, and alder trees.” Jedediah turned and jumped into a shallow little pond with water plants floating in it. He came back up chomping on a clump of waterlilies. “Salad for the menu, dee-licious.”

“What’s for dessert?” Jennifer asked, scrunching up her nose.

“Oh, I don’t know,” replied Jedediah. “In the summertime I like to munch on tender blades of grass, roots, and sometimes I nibble on aspen trees. They taste like candy.”

“Don’t you ever hurt your teeth, eating all those trees?” Tyler asked in amazement.

“Nah,” Jedediah shook his head. “My teeth are built to last, and besides, not only do I want to eat trees, I have to. If I stopped cutting wood with my teeth and just ate soft food, my teeth would grow, and grow, and keep growing until they became so long I wouldn’t be able to close my mouth.”

Suddenly, something moved deep in the pond behind Tyler, Jennifer, and Jedediah. No one seemed to notice.

“Well, what are we going to eat?” Jennifer asked.

Jedediah handed Jennifer a waterlily. “Here, try it.”

“Yuckko!” Jennifer scowled. “I’d rather have one of Tyler’s peach-yogurt-peanut-butter-and-tuna-fish sandwiches.”

“Hey,” Jedediah said, “don’t knock it till you’ve tried it.”

“No, thank you,” Jennifer repeated, a bit more politely.

In the pond behind them, the thing under the water moved toward the bank. Still no one seemed to notice.

Jedediah held the dripping waterlily out to Tyler, “Tyler? You want some?”

Tyler hesitated at first, then he glanced at Jennifer, held his nose, and took a nibble of the waterlily.

“That-a-boy, Tyler!” Jedediah said happily. “Living and loving the life of a beaver.”

Tyler spat the piece of waterlily out and made a nasty face.

“Yuck,” Tyler sputtered, “uh, I’m not that hungry, I guess.”

“You will be,” predicted Jedediah.

Suddenly, the thing in the pond behind them burst out of the water, heading right for Jedediah. It was an otter, the beaver’s worst enemy.

“Jedediah,” Jennifer screamed, “look out!”

Jedediah whirled around and faced the otter head on, baring his teeth. “Stand by me, kids. Don’t be afraid. There are three of us and only one of him. Three against one. We can scare him off.”

“O-okay, Jedediah,” Tyler gulped, “if-if-if you say so.”

Fearful, Jennifer and Tyler nevertheless stood by Jedediah as the otter charged them.

Suddenly, the otter stopped. It wasn’t too sure it wanted to do this now.

“Hey,” Tyler exclaimed, “it stopped!”

“Yeah, Jedediah was right,” Jennifer said. “The otter doesn’t seem to like the odds.”

“Yeah,” Tyler yelled, “let’s get him!”

“No, wait! Wait! Kids, no!” Jedediah called after them, but the children weren’t listening.

Off they charged, leaving Jedediah waddle-running behind.

“YAAAAAAHHHHH!” Tyler and Jennifer hollered, as the otter turned tail and started to run back to the pond. “Get out of here! Beat it! YA! YA! YA!”

Tyler lunged and grabbed the otter's tail. "Big mistake," groaned Jedediah, who was still trying to catch up. In a flash, the otter turned on Tyler and Jennifer with its razor-sharp teeth.

Tyler and Jennifer screamed as the furious otter began to chase them back. Luckily, it stopped when it saw Jedediah in pursuit. Turning around, the otter dropped back into the pond and swam away.

"Are you two all right?" Jedediah asked breathlessly.

"Oh, good idea, Tyler, let's get him," Jennifer said angrily, turning her energy against her friend. "Reeeeaally good idea, let's get him. You almost got us both killed."

"Well, you followed me," Tyler protested defensively.

"Never mind," Jedediah said gently. "I think maybe we learned something here today. Like, being hungry is serious business. There's not always time for games when you have to worry about where your next meal is coming from. End of lecture. Come on, we're going."

Tyler and Jennifer hopped up onto Jedediah as he slid back into the deep-running stream.

"Where to now?" Jennifer asked, much calmer, but still eager for more adventure.

"You'll see," Jedediah replied mysteriously.

Jedediah carried Tyler and Jennifer around several bends in the stream, always looking closely to see what was around the next corner before actually travelling it.

"What are we looking for?" Tyler asked.

"We just found it," announced Jedediah happily. "This is the place."

"For what?" Jennifer asked.

"For building my dam and home, of course," Jedediah said.

"What? Why? What for?" Tyler asked. He, too, had developed a taste for adventure, and

building a home did not sound like a terribly exciting idea.

"I have no choice in the matter," Jedediah told him. "I have to. You see, beavers can't fly south for the winter like ducks, so we have to get good and ready to make it through the hard, cold winter. I'm going to need a roof over my head. I also have to dam this stream up so I can raise the water level enough to keep the water from freezing all the way to the bottom."

"Oh," Tyler said, trying to sound interested.

"I also have to keep my food somewhere for the winter," Jedediah went on, "so, I have to store my food below the ice before the deep snows cover my bark supply. I'm also going to have a wife and family to raise, so..."

"Hey, Jedediah," Jennifer interrupted, "are you just making this up as we go along?"

Jedediah laughed. He let Tyler and Jennifer off on the shore and waddled up into the brush.

"Where are you going, Jedediah?" Tyler inquired.

"Hi, ho, hi, ho, it's off to work we go," the beaver sang.

"But it's almost night!" Tyler protested.

"That's okay. Beavers like to work at night," Jedediah called back. "That's when the moon smiles down upon us."

Jedediah worked like the busy beaver he was, dragging branches and trees and other brush down into the stream, carefully laying them along with the current, taking special care to place the bottoms of the tree trunks upstream, and anchoring the tops down with stones and gravel.

"Scientific, isn't it?" Jedediah grinned breathlessly.

"Yeah." Tyler agreed, more interested now that he realized there was more to dam-building than piling up debris.

“Hey, I’m not called the smartest thing in fur pants for nothing, you know.” replied Jedediah with a wink. “Come on! Give me a hand here.”

“Who,” Tyler began.

“Us?” Jennifer finished.

“Come on! Quickly! We’ve got to make it watertight.” Jedediah said.

Jedediah began scooping up mud and rocks, throwing it all in and packing it against the sticks. Tyler and Jennifer caught on fast, wedging in everything that would jam and dam. They threw on mud, sticks, stones, grass-clods, driftwood, and anything else they could pull out of the ground.

“Careful! Careful!” Jedediah yelled. “We have to stick every little bit where it will hold, and strengthen the dam.”

“Okay, okayyy!” Jennifer and Tyler growled angrily. They were suddenly wet, dirty, tired, and hungry.

“Aw, Jedediah, this is never going to work,” whined Jennifer.

“Yeah, Jennifer’s right,” Tyler agreed. “The stream is just too big and strong. The dam is never going to hold.”

Jedediah laughed as he put in another tree. “Are you kidding? Once beavers begin to throw a dam across a stream, nothing will stop them. It doesn’t matter how wide the dam has to be, we never give up. For example, in Wyoming there’s a three hundred and thirty seven metre dam and in Minnesota there’s one that’s eight hundred and twenty metres long.”

“Wow,” Tyler and Jennifer breathed, “then what that means is...”

“What that means is...” Jedediah interrupted as he put in his last tree, “...this stream is a piece of cake. It’s also finished.”

Tyler and Jennifer looked down at the dam they were standing on.

“Hey!” hollered Jennifer. “It’s holding! There’s no water getting through. The dam is holding!”

“But, of course,” Jedediah laughed. “Here, have some of these. I picked them myself.”

Jedediah held out a big pawful of raspberries and wild strawberries to Tyler and Jennifer.

“It may not be chicken and fries, but it’s the best I can do.”

Without a word, Tyler and Jennifer gobbled up all the berries.

All at once, a gust of icy wind tore over the stream and their good spirits, making everything very cold, very fast.

“Jedediah, what’s happening?” Jennifer asked, rubbing her arms against the cold.

“Don’t you know when winter’s coming?” Jedediah asked in reply.

“I don’t know about winter,” said Jennifer sleepily, “but I do know that I want to go to bed.”

“Oh, no, not yet,” Jedediah protested. “We still have much to do.”

“What now?” Jennifer groaned.

“Well, first, we have to build my house,” Jedediah began.

“Oh, brotherrr,” Tyler yawned. “are we getting paid for this?”

Jedediah taught the reluctant Tyler and Jennifer how to build a beaver lodge, slapping together a thatchwork of sticks upon sticks upon sticks, plastering it all with black mud until it was moulded into the shape of a beehive.

“Hey, wait a minute!” Tyler exclaimed, suddenly wakeful. “Where’s the doorway? We forgot to make a door to get inside.”

“No, we didn’t,” assured Jedediah. “I’ve already made one.”

“Well, where is it?” Tyler demanded.

“Come on,” said Jedediah.

Tyler and Jennifer hopped onto Jedediah’s back as the beaver dove underwater and swam up a secret tunnel entrance into the lodge. Being inside the lodge was like being in a cool, dark, dry cave, over two metres wide and one metre high.

“Hey,” Jennifer grinned. “it’s great in here.”

“Yeah,” Tyler agreed. “it’s like a clubhouse.”

“Well, we still have a few more rooms to build yet,” Jedediah said. He pushed against the inside of the lodge to see how well it was held up. “We also have some more work to do on the outside. The lodge has to be at least twenty-five centimetres thick.”

“Why does it have to be so thick, Jedediah?” asked Jennifer, who was not eager for more work.

“Well, it’s a shield against the cold,” Jedediah explained. “It also has to work as protection against hungry wolverines, badgers, and bears.”

“Bears?” Jennifer repeated, nervously. “Where?”

Suddenly several sticks from the roof of the lodge fell on top of them. A dark, furry animal was on top of the lodge and was trying to wriggle inside.

“Jedediah!” Jennifer screamed. “Something’s coming inside!”

3.3.1 WHAT'S FOR DINNER?

All of our energy comes from the sun. Plants trap the energy and store it in the form of sugars and starches. Animals may obtain that energy either directly from the plant or indirectly by eating plant eating animals.

This activity should be conducted after reading Chapter Three. Relate the activity to the discussion between the children and Jedediah about beaver food.

Objective

Students will understand that both animals and humans rely on plants for food energy.

Curriculum Tie-in

Science: Living Things and Environment - Plants and Animals

As living things, all animals require food.

Materials

- 1 copy of the *What's for Dinner?* handout for each student (see page 49)
- 1 copy of the *Colour the Beaver Foods* handout for each student (see page 50)
- 1 pencil for each student
- 1 box of crayons for each student
- 1 piece of drawing paper for each student

Time Required

40 - 60 minutes

Instructions for the Teacher

1. Make copies of the handouts for each of the students.
2. Ask students to wiggle their thumbs. Where do they get the energy to do that? (*from the food they eat*) Just as a car needs fuel to run, so do people need fuel for their bodies to "run". This fuel is called energy and it comes from the food we eat.
3. Ask students to write down or draw pictures of things they like to eat for dinner.
4. Have students use the handout *What's for Dinner?* to categorize the foods they eat according to whether they belong to the meat or vegetable (plants) category.
5. Then discuss with students what beavers eat, comparing the foods students eat to those beavers eat. Students will realize that both people and beavers eat different kinds of plants. We call the plants we eat fruit and vegetables.
6. Have the students complete the *Colour the Beaver Foods* handout. Discuss which foods beavers eat and which ones people eat.

WHAT'S FOR DINNER?

My Name: _____

WHAT DO YOU EAT?

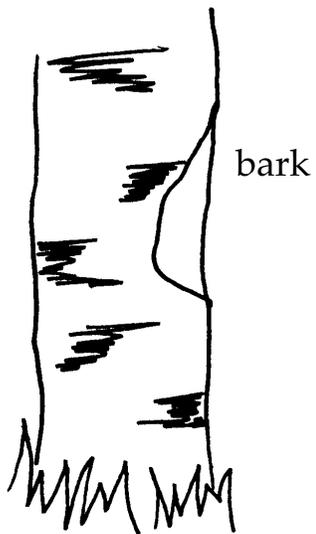
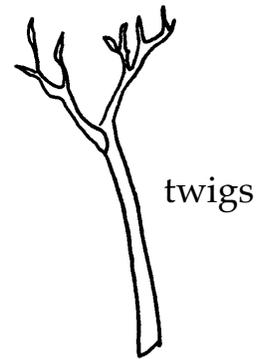
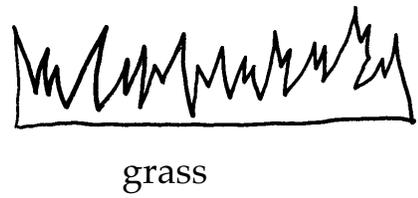
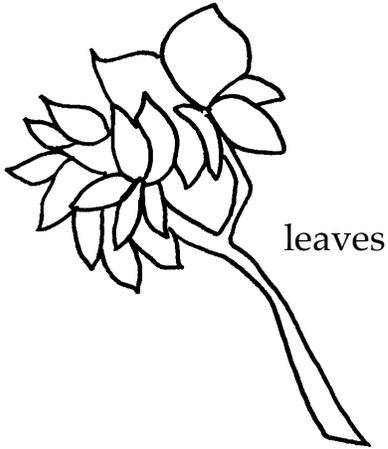
Plants?	Meat?
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WHAT DO BEAVERS EAT?

Plants?	Meat?
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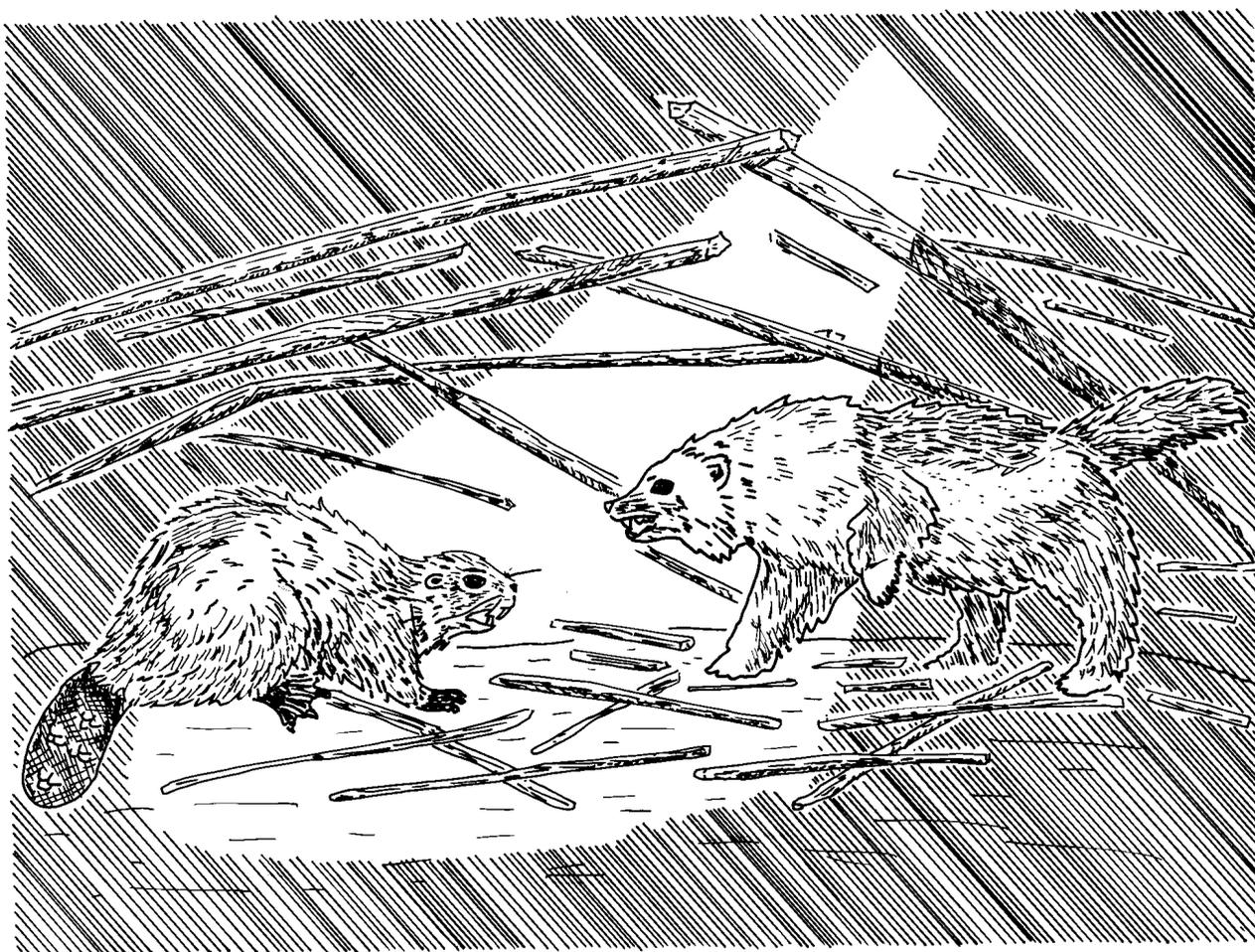
COLOUR THE BEAVER FOODS

My Name: _____



Chapter Four

Adaptations and Predation



Chapter Four: Adaptations and Predation

A wolverine attacks Jedediah and his mate. The children realize the perils of beaver life and the struggles beavers have for survival.

“Jedediaaaaahhhh!” Jennifer screamed. “There’s something trying to break into the lodge!”

“And here it comes!” Tyler yelled as he scrambled away from the dark, hairy animal breaking through the roof of the beaver lodge.

Then, all at once the animal was through, crashing to the floor of the lodge. Tyler and Jennifer screamed in fright at the furry brown thing at their feet.

“It’s a bear!” Jennifer shrieked.

“It’s a wolf!” Tyler shouted.

Jedediah laughed. “It’s a bird, it’s a plane, it’s...”

“It’s a beaver!” Tyler and Jennifer exclaimed at the same time.

Struggling to its feet, the strange new beaver was muddy and wet and shaking all over and breathing very hard.

Seeing that the other beaver still could only shake and gasp for breath, Jedediah explained, “She’s very scared.”

“Of what?” asked Tyler.

Suddenly the whole roof of the beaver lodge exploded as a giant wolverine smashed into the lodge, tearing it apart. The wolverine was hungry for beaver, and for that matter, anything else it could swallow.

“Holy moley!” Tyler yelled.

The shaggy wolverine tumbled into the middle of the beaver lodge, scattering Tyler, Jennifer, Jedediah, and the female beaver every which way.

Jennifer screamed.

“Let me out of here!” Tyler wailed.

The ferocious wolverine went straight for the female beaver it had been chasing.

“Get away from her!” Jedediah bellowed as he barrelled into the wolverine, knocking the attacker off of the female beaver.

In response, the wolverine flashed razor-sharp white teeth and turned on Jedediah!

Growling and snapping and biting, Jedediah and the wolverine rolled over and over each other. The wolverine was winning.

“Get him, Jedediah! Get him!” Tyler and Jennifer cheered from what they hoped was a safe distance.

Suddenly the female beaver, having recovered a bit, jumped into the fight, helping Jedediah battle the wolverine.

In a furious tangle of slashing teeth and flying fur, the three grappling forms pulled each other up and out of the ragged hole in the top of the beaver lodge, somersaulting into the pond. All three sank beneath the water’s surface without a trace.

Tyler and Jennifer scrambled outside, onto the top of the lodge. It was still night and the water of the pond was pitch black.

“Where did they go?” Tyler asked breathlessly.

“I, I can’t see them,” wailed Jennifer.

“Jedediaahhh!” Tyler yelled.

Jennifer and Tyler desperately searched the water for any signs of life: a ripple, an air bubble, anything. There was nothing; not one sign of Jedediah, the female beaver, or the wolverine.

“Je-de-di-aaahh!” Tyler and Jennifer shouted to the water.

There was no answer.

“I, I think he’s dead,” Jennifer whispered, choking.

Unseen to Tyler and Jennifer, far below the surface of the deep pond, Jedediah was far from dead. The battle raged on.

Jedediah had caught the wolverine in his jaws, the wolverine had caught Jedediah in his jaws, and the female beaver had caught the wolverine in her jaws. Nobody was letting go of anybody. It was a fight to the finish.

Suddenly the wolverine panicked. It needed air. Beaver can stay underwater for up to fifteen minutes without having to come up for a breath, but wolverines cannot.

Thrashing around frantically, the wolverine tried to tear free from Jedediah’s and the female beaver’s hold, but they held tight. They knew the wolverine would go up for air and then come right back, so they wouldn’t, couldn’t let go. The wolverine started this, but it was up to Jedediah and the female beaver to finish it.

They held the struggling, terrified wolverine under the water until it struggled less and less, and finally stopped moving. The wolverine was dead.

Jedediah and the female beaver let the wolverine go and its thick, heavy, lifeless body sank slowly to the bottom of the pond.

Shivering all over, completely worn out, Jedediah and the female beaver swam to the surface of the water, crawled up onto the shore, and collapsed.

“Ya-hooooo!!” Jennifer cheered when she saw them.

“All right,” Tyler exclaimed in happy relief. “Way to go Jedediah.”

“Tyler, Jennifer,” Jedediah panted, pointing to the female beaver, “Meet Cassie.”

“Hi, Cassie,” chimed the children admiringly.

“She’s the Mrs.,” Jedediah explained.

"The what?" Jennifer asked.

"My wife," Jedediah said.

"Your wife!" Tyler exclaimed. "Already?"

"Beavers marry at a very early age, and when they do, it's for keeps," Jedediah said. He nuzzled Cassie.

Cassie smiled at Tyler and Jennifer.

"Oh, wow, Jedediah," Tyler groaned, coming down off the ruined beaver lodge, "the lodge is wrecked. What are we going to do now?"

"Fix it, of course!" Jedediah asserted briskly.

"Now?" Jennifer gulped.

"There's no time like the present, lassie!" Jedediah exclaimed as he got to his feet. "Full steam ahead!"

Tyler and Jennifer sighed and then went straight to work.

* * * *

Soon winter came. The pond froze, just like Jedediah said it would. Tyler and Jennifer sat on top of the finished beaver lodge, watching a new day's sun come up. Jedediah and Cassie were nowhere to be seen.

"I feel like we've been here for days," Tyler said.

"I feel like we've been here for weeks," Jennifer said.

"I feel like we've been here for months," Tyler said.

"I feel like we've been here for years," Jennifer said.

"I feel like we've been here for..."

"...a long time," Jennifer interrupted.

"Yeah," Tyler agreed. "When are we going to get back home, Jennifer?"

"I don't know," replied Jennifer.

"How are we going to get back home?" Tyler asked.

"I don't know," answered Jennifer.

"Don't you even want to get back home?" Tyler asked.

Jennifer gave a little shrug. "I don't know," she admitted.

From across the way, Tyler and Jennifer saw Jedediah and Cassie come plunging out of the forest, playfully chasing each other. They ran onto the pond, slip-sliding across the frozen surface.

They watched as Jedediah and Cassie hit a patch of thin ice on the frozen pond and tumbled into the freezing water.

Both beavers popped back up out of the water, laughing in their own way. They ducked back under the water, swimming just beneath the ice surface. Soon Cassie emerged, and lay panting on the bank. She didn't seem to want to play any more. Jedediah was at her side, and together they made their way toward the lodge. With Cassie safely inside, Jedediah returned to the children.

"What's wrong with Cassie?" asked Tyler, who knew Cassie loved to play. "Is she all right?"

"Well, to tell you the truth, she's a little tired," Jedediah admitted. "Guess her tummy's just too big to move as fast as she used to." He looked down at his own tummy, then at the children, and smiled shyly. The children's mouths fell open in astonishment and then pulled up into wide grins as they realized that Cassie's tummy had, in fact, grown to be pretty big in a very short time.

"Cassie!" whooped Jennifer. "She's pregnant!"

"You got it!" replied Jedediah proudly.

"You mean 'pregnant' as in, she's going to have a baby?" Tyler asked, just to be sure.

"No, I mean 'pregnant' as in, she's going to have many babies. Kits, we call them," Jedediah explained.

"How many babies, er, kits?" Tyler asked.

"Ooohh, I'd say about...five or six," Jedediah said.

"Six babies?" Jennifer sputtered.

"Six kits!" Jedediah corrected her.

"Not all at one time?" Tyler asked, wide-eyed.

"Of course." Jedediah replied matter-of-factly.

"Wow!" Tyler exclaimed.

"What's the big deal?" Jedediah laughed.

"Well, nobody, but nobody has six babies all at one time," Jennifer stated.

"They're kits. And beavers do. All the time," Jedediah replied.

"Really?" asked Tyler.

"Really!" Jedediah asserted.

"Well, when?" Jennifer asked.

"In April or May," Jedediah guessed. "That's about three months from now."

"Wow!" Tyler exclaimed again.

"Can we see her?" asked Jennifer.

Jedediah hesitated. “W-ell, okay. But just for a little bit. She needs some rest. All abooooaarrd.”

Tyler and Jennifer scrambled up onto Jedediah’s back as he skidded across the frozen pond and plunged into the hole in the ice. Ploosh, they were underwater.

Rolling over and over, upside down and then upright again, they floated down, down, down, and had just touched rock bottom when suddenly, clank.

Jedediah had stepped into a steel beaver trap! The metal teeth of the trap had snapped shut around his left hind foot. Jedediah tried frantically to pull free, but he could not. He was caught! Caught! And it hurt!

Tyler and Jennifer swam to the black steel beaver trap. Together they tried to pry the metal teeth apart to get Jedediah loose, but they couldn’t. The trap was too strong.

The children were running out of air, and so was Jedediah. If Jedediah ran out of air he would drown, and if that happened Tyler and Jennifer would never be able to get back home. They would be stuck here forever.

They had to save Jedediah. Time was running out...

3.4.1 BEAVER ENEMIES

The teacher should conduct this activity after reading Chapter Four. Refer to the attack by the wolverine on Jedediah's mate, Cassie. In this activity, students will be introduced to the concept of predation. Predation refers to any situation where one animal preys upon and eats another. Beavers are preyed upon by wolverines, wolves, lynx, otters, minks, hawks, and owls.

Objective

To introduce students to the concept of predation.

Curriculum Tie-in

Science: Living Things and Environment - Plants and Animals

Plants and animals are living organisms, Each has its specific characteristics and particular needs to sustain life.

Time Required

30 - 40 minutes

Materials

- 1 copy of the *Beaver Enemies* handout for each student (see page 60)
- 1 box of crayons for each student

Instructions for the Teacher

1. Make copies of the *Beaver Enemies* worksheet and hand them out to the students.
2. Discuss predation using the attack on Cassie as an example. Have students circle the animals on the sheet who are enemies or predators of the beaver.
3. Have students colour the picture and display them in the classroom.

Chapter Five

Respect For All Living Things



Chapter Five: Respect for all Living Things

Jedediah gets caught in a beaver trap and the children begin to realize that people hunt beavers for their own needs. When Jedediah's mate is killed by a trapper, the children are saddened and feel a deep respect for beavers.

Tyler and Jennifer paddled up, up, and up until at last they broke through the thin ice covering the pond. They both gulped fresh, clean air as they broke through the surface.

"Tyler," Jennifer panted, "what are we going to do?"

"I don't know," Tyler gasped. "The beaver trap is too strong."

"We've got to get Jedediah out," Jennifer cried, "or he'll drown."

"Jennifer," Tyler said, very scared, "if Jedediah drowns, we'll never be able to get back home."

"Who cares? We've got to save him. Do something!" Jennifer screamed.

Tyler dove back under the water and Jennifer started to follow, but then stopped. She had an idea.

Jumping out of the water, soaking wet, and shivering all over, she ran as fast as she could across the frozen pond to the trees on the shore. Breaking off a short, thick branch, she ran back with it across the ice. Taking a deep breath, she dove back through the hole into the water, paddling down, down, down, to where Tyler was trying to help Jedediah get his foot out of the beaver trap.

Jedediah was almost out of air. Jennifer had to hurry.

At first, Tyler didn't know what Jennifer was doing with the branch, but then he understood as Jennifer struggled to stick the end of the branch in between the metal teeth of the beaver trap. She was trying to pry the teeth apart so Jedediah could get loose.

Tyler quickly swam over to Jennifer and pulled on the branch with her. Pulling the metal teeth of the trap apart, the two of them pulling with all their might, pulling, pulling...

Jedediah was loose! He paddled backwards, away from the trap, and swam free. Tyler and Jennifer let go of the branch and the steel beaver trap snapped shut again, cutting the branch in two; chomp!

Jedediah, Tyler, and Jennifer all paddled for the hole in the ice and leaped out of the water, choking, coughing, gasping, and sucking in air.

Jedediah had lost a toe in the trap, but he seemed not to notice. They had made it. They had made it.

“Thank you, Jennifer...Thank you, Tyler,” Jedediah panted, “...Thank you...”

“Jedediah,” Tyler exclaimed angrily, “where did that rotten trap come from?”

“A man put it there,” Jedediah answered sadly.

“A man? Who?” Jennifer demanded. “Who would be so mean as to—”

“It was a trapper,” Jedediah explained, “and he wasn’t being mean. Not really.”

“Wasn’t being mean?” Tyler shouted. “He put that trap there to catch you. To drown you. Why else would he do that if...”

“Because he wanted my fur coat,” Jedediah interrupted.

“What!” Jennifer protested. “That’s crazy! Your fur coat would never fit him.”

Jedediah laughed. “No, you don’t understand. Let me explain...”

“Please do,” Tyler and Jennifer said.

“Well, you see,” Jedediah began, “before explorers and settlers came to North America, there were about sixty million beavers living peacefully here.”

“Wow!” Tyler and Jennifer exclaimed. “Sixty million!”

“But then,” Jedediah continued, “during the seventeenth and eighteenth centuries, when everybody, but everybody, wanted beaver hats, millions of beaver pelts were shipped to a

faraway land called Europe. Between the years 1853 and 1877, the Hudson's Bay Company alone sold nearly three million beaver skins in London, England."

"Three million!" Tyler and Jennifer gasped. They couldn't believe it. Tyler felt a stab of guilt as he remembered that his father, in fact, owned a beaver hat.

"Yes, it's true!" Jedediah said. "And that was way too many! All that trapping of beavers almost made them extinct."

"Extinct?" Tyler and Jennifer said, unsure of what the word meant.

"It almost made us disappear from the face of the earth. Totally! Forever!" Jedediah explained.

"Well, then what happened?" Tyler asked.

"Luckily for us," Jedediah continued, "silk hats became popular and beaver pelts weren't needed any more. "

"How much did a beaver fur cost?" Tyler asked.

"Oh, anywhere from twenty-five to eighty dollars," Jedediah replied.

"Wow," Jennifer said, "so, it's not that the trappers catch beavers because they hate beavers?"

"No, no," answered Jedediah. "The trappers don't trap us because they hate us. It's just that our fur coats are valuable."

"Yeah, well, anyway, just don't get caught again, okay, Jedediah?" Tyler asked. "It's scary."

"Getting caught isn't good and it isn't bad, Tyler," Jedediah smiled. "It's just the way it is. It's like the otter, you know, he wasn't good or bad, he was just hungry. He wanted me for the same reason the trapper did; to help him stay alive."

Tyler and Jennifer nodded in sober understanding.

In April, Cassie gave birth to five kits (not six, as Jedediah had said) and after six or seven weeks the kits were able to eat bark.

It was summer, and Tyler and Jennifer were sitting together on top of the beaver lodge, eating blackberries, watching the kits play in the pond with their father, Jedediah. Cassie was nowhere to be seen.

"Where's Cassie?" asked Tyler.

"I don't know," Jennifer answered. "I haven't seen her all day."

"I feel like we've been here for a hundred years," Tyler said.

"I feel like we've been here for a thousand years," Jennifer said.

"I feel like we've been here for a million years," Tyler said.

"I feel like we've been here for a billion years," Jennifer said.

"I feel like we've been here for..."

"...a long time," Jennifer interrupted.

"Yeah," Tyler agreed. "Hey, Jen?"

"What?"

"When are we going home?"

"I don't know," Jennifer replied. "And you know what?"

"What?"

"I don't care."

"Hey, Jen?"

"What?"

“Me, neither.”

“I love it here,” Jennifer said.

“Me, too. I could stay here forever.”

“You can’t.”

Both Tyler and Jennifer turned at the sound of Jedediah’s voice. He was right behind them.

“What do you mean, we can’t?” Tyler asked.

“Come on,” Jedediah said, sliding back into the pond. “Hop on.”

For the last time, Tyler and Jennifer climbed up on Jedediah’s back as he paddled them to the shore and waddled up into the forest.

“You can’t stay,” Jedediah repeated.

“What?” Jennifer exclaimed. “What are you talking about? You’re the one who kept telling us we couldn’t leave yet. How else are we going to see your life’s story?”

“You already have,” Jedediah said. “That was it!”

“That...was it?” Tyler asked.

“Yup!” Jedediah said. “The dam, the lodge, the pond, my family, you’ve come as far as you can go. It’s time for you to return with me now.”

“Where?” Tyler asked.

“Home,” Jedediah replied.

“What? No!” protested Tyler.

“Forget it! We want to stay here,” Jennifer asserted.

Tyler and Jennifer jumped off Jedediah's back and began running through the forest, back to the pond.

"You can't," Jedediah said softly. "Don't you see? You don't belong here. You must take what you have learned here back with you."

Suddenly Jedediah threw his arms up in the air, stretched his paws to the sky, squeezed his eyes shut as he began to chant the magical rhyme which had brought them to this spot in the first place: "Bee-bop-a-loo-bop-She's-my-baby..."

Once again, giant, black thunderclouds swallowed the clear blue sky. The forest was blasted over and over with freezing, screaming winds that all became one big tornado, whirling and spinning and roaring. It grabbed Tyler and Jennifer from behind, picking them up and dragging them back to Jedediah.

In the middle of the tornado, Jedediah, Tyler and Jennifer were travelling in time, going home.

Then, just before Jedediah's lodge disappeared, Tyler and Jennifer saw Cassie. Something was wrong with her! Looking out from inside the tornado, they saw Cassie, caught in a beaver trap. She was upside down and she wasn't moving, her eyes were closed and a man, a trapper, was hauling her up out of the water into his boat. Then everything went away, Cassie, the trapper, the pond, the tornado, everything. They were back home.

Tyler and Jennifer were big again, everything was back to normal, and they were both standing with their lunch boxes in the middle of the pathway that Mrs. Cameron had told them not to leave when the field trip started.

"Tyler?" Jennifer asked.

"What?"

"What happened?"

"Jedediah brought us back home, I guess," Tyler offered.

"Well, where is he?" Jennifer demanded.

"I don't know," Tyler replied, searching the forest.

"Well, why did he bring us back?" Jennifer pouted. "We said we didn't want to go!"

"I guess, it's like he said, we didn't belong back there. We had to come back," Tyler said, "and take what we learned back with us."

"What did he mean?" Jennifer asked. "What did we learn?"

"I'm...not sure," admitted Tyler. "Not yet."

Just then they heard a sound behind them. Up the pathway came Mrs. Cameron and the Grade One class.

"Tyler Holden and Jennifer Jones!" Mrs. Cameron exclaimed. "How did you two end up ahead of the rest of us?"

Tyler and Jennifer looked at each other miserably. "We're in for it now," their looks said.

"Well, I suppose you're just so keen on beavers, you didn't want to risk missing anything, is that it?"

"What?" Tyler asked, confused. "Isn't the trip...over?"

"Oh, be serious!" Mrs. Cameron replied. "You know full well we only started a minute ago." She winked, slowly and deliberately at Jennifer and Tyler, and then turned to the other children.

Tyler gaped at Jennifer, amazed. "We've only been gone a minute!"

"Amazing!" Jennifer grinned.

"Come on, come on you two! Back in line," Mrs. Cameron ordered, shaking her head and smiling a secret smile as she herded them into the line.

Tyler and Jennifer got into single file with their classmates and followed Mrs. Cameron through the forest to Willow Lake, to look for beavers.

“Did you see a beaver around here?” Jennifer asked the girl behind her.

“No,” the girl answered.

“Are you sure?” Jennifer asked sadly.

“Big deal,” said the boy ahead of Tyler. “Who cares about any old stinky beaver anyhow?”

“Who’s stinky!” Tyler shouted at the boy.

“How dare you!” Jennifer yelled at the same boy.

“What do you know about beavers?” Tyler demanded of the boy. “Huh? Do you know what they eat? Do you know where they sleep?”

“Do you know how a beaver builds his dam?” Jennifer asked. “Do you know how a beaver builds his lodge?”

“Do you know how hard it is for a beaver to survive?” Tyler asked.

“Do you know what a beaver has to go through?” asked Jennifer. “You jerk!”

“Well, what do you know about beavers?” the boy asked back at them.

“Everything!” Tyler and Jennifer roared.

Tyler and Jennifer looked at each other and smiled.

“Hey,” Tyler said, “I guess we did learn something, after all.”

Hiding behind a nearby tree, Jedediah smiled his buck-toothed smile. “That you did, laddie, that you did.” He waved to Mrs. Cameron, who once more had turned to face the line of children. She gave a nod and a small bow as she counted heads.

The old, fat beaver slowly turned and waddled away in the direction of his pond, disappearing into the deep, green forest.

3.5.1 MAKE A COAT

(Adapted From: Project Wild Elementary Activity Guide. Western Regional Environmental Education Council, 1983.)

Students will make a coat using a variety of materials (some real and some imaginary) and they will discover whether the materials they choose are renewable or non-renewable. Students will discover that coats are sometimes made from beaver pelts.

This activity should be conducted after reading Chapter Five. Refer to the story where the beaver are hunted and explain the beaver's historical significance.

Objectives

Students will be introduced to the concept of renewable and non-renewable resources. Students will develop a sensitivity and respect for living things.

Curriculum Tie-in

Science: Living Things and Environment

Students will develop a sensitivity and respect for living things.

Environment

Humans can change the environment in many ways.

Time Required

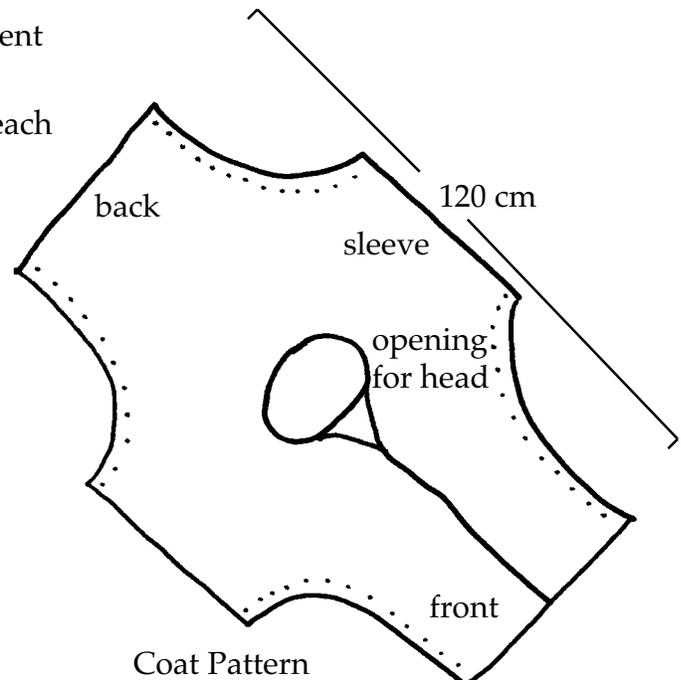
45 - 50 minutes

Materials

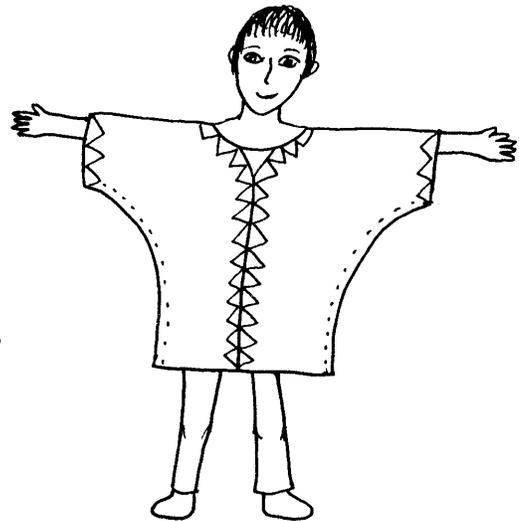
- 1 large paper shopping bag for each student
- 1 pair of scissors for each student
- 1 package of crayons or set of paints for each student
- 1 class set of darning needles
- 3 - 4 balls of coloured yarn
- tape

Instructions for the Teacher

1. Prior to conducting this activity, make a master pattern for the coat. You will be using this pattern for tracing onto the students' shopping bags.



2. Introduce the activity by asking students the following questions:
 - Why do they wear coats when they go outside?
 - What are their coats made from? Make a list of coat materials on the board.
 - What other materials are coats made from?
 - What did native people and early pioneers used to make their coats from?
 - Which of the coat materials listed on the board are made from plants or animals and which are made from other materials? (*Cotton, linen and capok come from plants, leather, fur, feathers, wool, and down come from animals, and nylon, polyester, gortex, and dacron are made from petroleum products.*)
3. Hand out a paper bag to each student. Have students open up their bags by cutting along one fold and along the bottom. They may need some assistance.
4. Trace the coat pattern onto the bags. Have students decide what they would like to use their coat for and what they would like it to be made of. Have them colour their coats and make designs on them according to the materials they would like them to be made of (cloth, fur, leather, gold, etc.). They may sew coloured yarn onto their coats for decoration.
5. Once the coats have been decorated, have students either sew or glue the edges together to hold the edges together. (Have a sample coat available to demonstrate with.)



Discussion

6. Have a fashion show or display the coats.
7. Ask the students to share with their classmates what their coats are made of.
8. Ask the students the following questions:
 - Can the materials they made their coat out of be replaced? (*Plants and animals can usually be replaced. For example, cotton can be replaced by planting more seeds for more cotton plants. Petroleum resources cannot be replaced.*)
 - Explain that some people have coats and hats made out of beaver pelts because they are warm and are considered to be fashionable. Are these pelts replaceable?
 - Do the students think that it is important to replace what they use?
 - Do the students think that people should trap as many beavers as they want or do they think that people should find other alternatives? Since this is a judgement question, discuss as many alternatives as possible, equally.

4.0 LIVING AND LOVING THE LIFE OF A BEAVER PROGRAM EVALUATION

Kananaskis Country Environmental Education materials have been developed to provide you with teacher-directed units of study. These are *living documents* that undergo changes on a continual basis.

The purpose of this questionnaire is to find out if these materials are meeting your teaching needs. Your comments are valuable to us. Please take a few minutes to complete this evaluation so that we may continue to improve your materials.

School name	Grade level taught	Your name <small>(optional)</small>
_____	_____	_____

- ★ How did you hear about the program?
 workshop administration in-service newsletter fellow teacher
 other (please specify) _____

- ★ Did you use all of the program? yes no
 If you answered **no**, which part did you **not** use and why?

- ★ On the bar line below how would you rate the program in the following categories:

	YES		NO
• appropriate for grade level (✓)		-----	
• clear instructions		-----	
• text easy to follow		-----	
• relevant to curriculum		-----	
• materials easy to use		-----	
• did you enjoy the material		-----	
• did your students like the material		-----	
• program of appropriate length		-----	

- ★ Approximately how long did it take you to complete these materials?
 1-2 weeks 3-4 weeks 5-6 weeks longer than one month
 program was spread over the year

- ★ Were you satisfied with how these materials fulfilled the curriculum objectives?
 yes no
 If you **were not** satisfied, please elaborate: _____

- ★ Did you require any additional information to complete any part of the program?
 yes no
 If **yes** please tell us what was required:

- ★ Would you use these materials next year?
 yes no
 If you answered **no** please tell us why: _____

- ★ Any additional comments about the program in general? _____

Thank you for completing this questionnaire. Please place the completed questionnaire in an envelope and mail to:

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Alberta Environment, Natural Resources Service
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