# A teacher's guide to Keji Quest

# A note from Mayor Hoot

Dear friend,

Having a safe and healthy home is very important for all of us.

As the mayor of Kejimkujik (or Keji, for short), I help to keep my community safe. When your class comes to visit me in a few weeks, you'll be helping me with my Neighbourhoot Watch program.

This program allows me to keep an eye on my community and its residents. By recording my observations each fall, over time I will be able to detect changes happening in Keji's forests.

Having your class help me with this work will make my job easier, and will certainly make it more fun!

Thank you again for your interest in Keji. I look forward to seeing you again soon.

Yours truly,

*Mayor Hoot*

ps. To learn more about what's going on in my community, check out www.friendsofkeji.ns.ca/kejiquest. This website is hosted by the Friends of Keji Cooperating Association.

# How to use this workbook

You will find one of three symbols at the outer top corner of each page. These symbols indicate when each activity should be completed and are explained below.

The acorn symbol represents the beginning of growth and the beginning of your class's Keji experience. These activities are to be completed **before** coming to Keji to help your class prepare for their visit.

This leaf symbol represents continued growth and the most important experiential component of this program - your visit to Kejimkujik. These activities will be done **at Keji**, when your class comes to see Mayor Hoot.

The mushroom symbol represents the return of nutrients to the soil and the nourishment of new growth. These activities will be completed in your classroom **after** your Keji visit. You will be responsible for deciding the timetable and the scope of your students' involvement in this stage.

# About my community

**Objective**
Students will be able to:

1. Describe their own community using the same criteria that will be used to describe natural communities in Kejimkujik.

**Rationale**
Your class will begin by exploring something close to home - your own community. By associating the necessary elements of this community with those of natural communities, your students may more easily assimilate the broader concepts of habitat and community.

**Suggested format**
Students can complete this activity individually, as a small group, or as a class.

**Instructions**

1. Students answer the six questions as well as they can, writing their responses in their workbooks.

# There's no place like home

**Objective**
Students will be able to:

1. Name the four elements of habitat (food, water, shelter, and space).
2. Express their relationship to their own habitat through a drawing.

**Rationale**
By associating familiar elements of their human community with those of the study of habitat, your students will more easily assimilate this knowledge.

**Suggested format**
Students work individually

**Instructions**

1. Thinking back to Keji's first visit to your classroom, students write the four elements of habitat in the boxes at the top of this page.

2. Keeping both these elements and their answers on page 4 in mind, students draw a picture of themselves in their habitat.

3. This is an activity we will return to at the end of the program (see page 27), so it is not crucial that your students' pictures are thorough at this time. We are curious to see how or whether this drawing changes after completing the program.

# Blast from the past

**Objective**
Students will:

1. Express their personal opinion on several elements of pop culture.
2. Explain their personal opinions and respond to the opinions of others.

**Rationale**
This activity introduces the important concept of change as observed over time in ecosystems. This principle is key to the monitoring activities conducted by ecosystem scientists and to those that your students will be doing during Keji Quest.

By choosing elements of pop culture to which your students can relate, we are hoping to facilitate the comprehension of the abstract concepts of time and duration.

During your Keji visit, your class will bury a "time capsule" (a tongue depressor) to be unearthed by future Keji Quest students. We hope this yearly snapshot will help these future students conceptualize the passage of time since the tongue depressor was buried. Although pop culture trends can change quickly over a year, decomposition is a considerably slower process.

# My time capsule

**Suggested methodology**
Students work both individually and as a class.

**Instructions**

1. Students complete the "My time capsule" activity on page 7 of their workbooks.

2. Once everyone has completed page 7, it is time to compile a class time capsule. Using consensus or voting, your class needs to devise an answer for each of the Time Capsule questions.

3. The class responses are to be filled in on the "Blast from the Past" sheet in your Teacher Resource Folder.

4. Be sure to bring this sheet along on your Keji visit!

**Additional materials**
"Blast from the Past" sheet

# Leaf Watch

**Objective**
Students will be able to:

1. Identify how a natural area can change over time.

**Rationale**
This activity continues to explore the concept of change as observed over time in ecosystems. By watching fall leaves, your students will see one example of how the natural world can change over a relatively short period of time. "Leaf Watch" is a simple form of ecological monitoring and will help to prepare your class for the in-Keji Neighbourhood Watch activities.

**Suggested format**
Students work as a class

**Instructions**

1. During the first in-school visit, a Keji interpreter will set up this activity for your class.

2. Following this visit, take some time each week to return to your site and update the "Leaf Watch" handout.

**Additional materials**
"Leaf Watch" handout

# Fall colours

**Objectives**
Students will be able to:

1. Identify several species of common leaves.
2. Determine how the appearance of these leaves will change during the fall months.

**Rationale**
This activity is intended to complement the "Leaf Watch" activity.

**Suggested format**
Students could work as a class to identify the leaves and then individually to complete the activity.

**Instructions**

1. In one of your "Autumn Leaf Watch" brochures, cut out the section that has the images of colourful leaves. Post this so the class can refer to these pictures during this activity.

2. Students match the leaf shapes in their workbook with those posted on the wall to help them connect the species name to the shape.

3. Again using the colourful leaf pictures as a guide, students will be able to choose the appropriate colour for each leaf in their workbook.

**Additional materials**
"Leaf Watch" brochure

# Kejimkujik here we come!

**Objective**
Students will be able to:

1. Identify appropriate clothing for various weather conditions.

**Rationale**
It is crucial that students, teachers, and chaperones are physically prepared for a day at Kejimkujik. Being outdoors requires knowledge and preparation. Proper clothes are just as essential as pencils and workbooks.

**Suggested format**
Class discussion

**Instructions**

1. Distribute a copy of "The Keji Checklist" to each student.

2. As a class, examine the two drawings of the students dressed for chilly weather and for wet weather. Discuss the similarities and differences between these two pictures.

3. As a class, check the weather forecast for the day of your visit. Based on this forecast, students will circle the items they'll need for their Keji visit. Review these answers as a class.

**Additional Materials**
"The Keji Checklist" handout (one for each student)

# Home sweet home

**Objectives**
Students will be able to:

1. Identify and draw the four habitat requirements of a specific animal.
2. Speculate how this animal's habitat may be affected if changes to the forest were to occur.

**Rationale**
By exploring the specific habitat requirements of several animals, your students will expand their understanding of the concept of habitat. Through a discussion about Sly Fox and her threat to change the forest, we will also examine the reverberations that habitat loss or change can provoke.

**Activity format**
Led by a Keji interpreter

**Instructions**

1. Students will choose one of the animals discussed during the guided hike to draw in their workbooks. This drawing will also depict the four essential components of this animal's habitat.

2. Students will write down their thoughts on how changes to the forest would affect their animal's habitat.

# Neighbourhood Watch: Searching for salamanders

**Objectives**
Students will be able to:

1. Identify two species of salamanders.
2. Contribute data to Keji's forest monitoring program.
3. Organize their observations in a simple table using tallies.

**Rationale**
Ecological monitoring requires regular observation and data collection. Through this activity, your students will record their observations of salamanders in one of Keji's forest monitoring plots. Their results will be added to a growing database and will help identify changes over time in salamander populations.

**Activity format**
Led by a Keji interpreter

**Instructions**

1. Students visit a series of cover boards on the forest floor of the Neighbourhood Watch plot.

2. Students lift each of four boards, noting the number of salamanders present, the species, and any other interesting observations. They record this data in their workbooks.

# Salamander stack-up

**Objective**
Students will be able to:

1. Organize data using a simple graph.

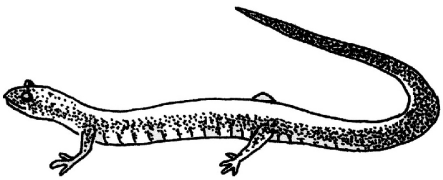
**Rationale**
This activity will enable your students to record their "Searching for Salamanders" data using a second method.

**Activity format**
Led by a Keji interpreter

**Instructions**

1. As a group, students will review their salamander data.

2. Following the instructions in their workbook, students will shade in pictures of salamanders as another way of representing their results.



# The forest cycle

**Objective**
Students will be able to:

1. Identify each of the stages of a tree's life.

**Rationale**
The growth stages of an individual tree (seed, sapling, mature tree, old growth tree, death, and decomposition) parallel the broader forest life cycle. Since ecological monitoring of the forest represents a long-term commitment, using the more familiar stages of tree-growth will help your students make the association with forest succession and long-term environmental changes.

**Activity format**
Led by a Keji interpreter

**Instructions**

1. As a group, students will read "The forest cycle" on page 14 of their workbooks.

2. Students will identify the three essential elements that seedlings need to grow and survive.

3. Students will list some of the common threats to a young tree's survival.

# The life of a forest

**Objective**
Students will be able to:

1. Represent the stages of the forest life cycle using a diagram.

**Rationale**
The picture your students draw will provide them with a visual reference for what they have learned during this interpretive walk. Representing these stages as a continuous cycle will help your students understand how decomposition is part of both life and death in a forest.

**Activity format**
Led by a Keji interpreter

**Instructions**

1. Starting with the keyword "seed", students will draw a chronological representation of the forest cycle. Arrows will link each keyword, showing the typical progression of a tree's life.

2. As a group, students will discuss probable outcomes at each keyword stage of their diagram.

# My life as a tree

**Objective**
Students will be able to:

1. Describe each stage of the forest life cycle.

**Rationale**
Empathy is a great way to learn about both animals and plants. By imagining they are an old tree, your students will gain a different perspective on the forest life cycle.

**Activity format**
Students work individually

**Instructions**

1. Students will write a story from the perspective of an old tree. They will record their life experiences and express personal opinions, feelings, and reactions to these events.

# Neighbourhoot Watch: Burying a time capsule

**Objective**

Students will be able to:

1. Contribute to Keji's forest monitoring program.
2. Predict the effects of decomposition on various objects over time.

**Rationale**

This activity will introduce your students to an easy way to assess and monitor decomposition rates in the soil. Examining the tongue depressors buried by last year's classes will show the process of decomposition in action and illustrate the amount of time this process can take. A discussion about the decomposition rates of other objects, including non-natural items, should produce a "shock-effect" and lead to effective discussions about pollution.

**Activity format**

Led by a Keji interpreter

**Instructions**

1. The group will bury a tongue depressor in one of Mayor Hoot's Neighbourhoot Watch plots. The class that digs up this time capsule next year will also receive your class's "Blast from the past" sheet.

2. Students will match six objects with their expected decomposition rates.

# Nature's symphony

**Objective**
Students will:

1. Experience the forest using their sense of hearing.

**Rationale**
This activity is called a soundmap. It is an excellent way to have your students calm down as they listen to and observe the forest. Sound is another way scientists can record valuable data within a habitat. This activity also requires your students to use a simple positional-based system for recording their observations.

**Activity format**
Led by teachers or a Keji interpreter

**Instructions**

1. Students will sit quietly, on their own and without talking, for a specific length of time. They should simply listen to the sounds coming from the forest.

2. Each sound heard will be marked on the soundmap on page 18. Sounds will be designated as coming from in front, behind, to the left, to the right, or at some other angle. Students can also record relative distances by placing near-sounds close to the centre of the map and far-sounds closer to the edge.

# Following a food chain

**Objective**
Students will be able to:

1. Describe a food chain using the keywords producer, consumer, and decomposer.

**Rationale**
This activity will help your students understand how energy flows between plants and animals as it travels through the food chain.

Your students will trace where energy comes from as the interpreter walks them through a food chain.

**Activity format**
Led by a Keji interpreter

**Instructions**

1. As a group, students will read the information on page 19 of their workbooks.

2. Starting with the Sun, students will draw a food chain of their choice. At each link of this chain, they should label whether the plant or animal is a producer or consumer. Students should finish their drawings by including a decomposer to show the recycling of nutrients.

# My link in the chain

**Objective**
Students will be able to:

1. Trace the flow of energy that occurs before they eat a hamburger.

**Rationale**
This activity will help your students understand their own place in a food chain. They can trace their food chain to explore the path followed by the energy in their food.

**Activity format**
Students work individually; class discussion

**Instructions**

1. Students will read the information on page 20.

2. Students will draw a diagram to identify the elements of the food chain necessary to create and consume a hamburger. Starting with the Sun, students will trace the flow of energy as it travels from the Sun, to a plant, to the cow, and then to their plate.

3. As an option, you could compare this food chain to the one required to produce the lettuce on the hamburger. More energy is required to produce meat than vegetables.

4. For an interesting discussion, you can also tie this activity back to their responses on page 4.

# Keji connections

**Objective**
Students will be able to:

1. Identify each of the members of Keji's food web.

**Rationale**
This page will serve as a reminder of what your students have learned about the Keji community. Each member of this food web is discussed during the program.

The Keji Quest food web illustrates real connections between Keji residents. Some of these connections may also apply to your students' communities.

**Activity format**
Led by a Keji interpreter

**Instructions**

1. Students will fill in the names of each of the members of the Keji food web. They can use the large food web board to help them with this exercise.

# The Keji Election Ballot

**Objective**

Students will decide who they will vote for and why. They will consider the implications to the Keji community. They will have the experience of voting in an election.

**Rationale**

Your students will think about the health of the Keji community and their role as voters with vested interests.

**Activity format**

Led by a Keji interpreter

**Instructions**

1. At the end of their visit, students will vote for the new mayor of the Keji community. A ballot box will be passed around for each student to place their vote. Students will be asked to explain why theyhave made their choice.

2. The final results will be revealed to students during the November in-school visit.

# Eye spy...

**Please note: As a teacher, you will lead this activity.**

**Objective**
Students will:

1. Identify specific objects in their forest surroundings.

**Rationale**
This activity is intended simply as a bit of fun to focus your students' attention on various components of the habitat they are exploring.

**Activity format**
Students can complete this activity individually, as a small group, or as a class.

**Instructions**

1. If you time at lunch, try to draw the activity out, encouraging students to find every item on the list. If time is short, you can do this activity as you walk back to the kitchen shelter.

2. Please ensure students do not disturb any of these items or remove them from their natural habitat.

# I'm a poet, and I know it!

**Objective**
Students will:

1. Use a poem to organize facts and their own ideas about one of Keji's residents.

**Rationale**
This simple poem format is a creative way for your students to display information they learned during their Kejimkujik visit.

**Activity format**
Students work individually

**Instructions**

1. Each student will select an animal discussed or encountered during their Keji visit.

2. The animal's name will be written vertically in the left-hand column, so that one letter is on each line. Students will then use each of these letters to begin a line of their poem.

# Looking back

**Objective**
Students will:

1. Write a text to express some of their thoughts, feelings, and reactions to their Keji Quest experience.

**Rationale**
This activity is intended to encourage your students to reflect on their experiences in Kejimkujik. If desired, this could be set up as a journal exercise.

**Activity format**
Students work individually

**Instructions**

1. Students will choose one of the suggested first phrases on page 25 of their workbooks.

2. Using this phrase as a starter, they will write a descriptive account of one aspect of their Keji visit.

# Memories last a lifetime

As a teacher, feel free to collect your students' memories and mail them to Mayor Hoot at:

Kejimkujik National Park and National Historic Site
PO Box 236 Maitland Bridge, NS
B0T 1B0

Mayor Hoot would love to hear from you!!

# Habitat sweet habitat

**Objective**
Students will be able to:

1. Describe their community using the same criteria used to study habitat in Kejimkujik.

**Rationale**
Through this activity, your students will be able to compare their current thoughts about habitat with the initial ideas they recorded on page 5 of their workbooks.

Identifying the differences between these two drawings could lead to a discussion of how their concept of habitat has evolved as a result of their adventures with Mayor Hoot. This could also be expanded to consider the implications of habitat loss in their community or even around the world.

**Activity format**
Students work individually; class discussion

**Instructions**

1. Students look at the pictures they drew of themselves in their habitat on page 5.

2. Using what they have learned through their Keji Quest adventures, students will adjust and re-interpret this drawing (if necessary), producing a new picture on page 27 of their workbooks.

# Ice Watch

**Objective**
Students will be able to:

1. Identify how a natural area in their community changes over the winter months.

**Rationale**
This activity will provide an opportunity for your students to continue to develop their observation and data collection skills. Similar to their Neighbourhoot Watch results, your class's Ice Watch observations will become part of a wider effort to monitor environmental change. Ice Watch is part of a national monitoring program that tracks the freezing and thawing of winter ice.

**Activity format**
Class activity

**Instructions**
Please consult your "Ice Watch" handout for specific instructions on this activity.