

# DISCOVER MORE ABOUT

## Algonquin Park's Trees and Forestry

**Algonquin Logging Museum** (at km 54.5) – The Algonquin Logging Museum brings the story of Algonquin Park's logging history to life. After touring the reception building and watching the short movie *Loggers of Algonquin*, step back into the early square timber days by walking the 1.3 km outdoor trail to explore how forestry tools, techniques and management have changed up to the present day.

**Trees of Algonquin Provincial Park** – For more about Algonquin's tree species, their identification, and ecology, pick up a copy of the *Trees of Algonquin Provincial Park* available at gates, Access Point Offices, Algonquin Visitor Centre and the Algonquin Logging Museum.

**Participate in a Naturalist-led Activity** – Join an Algonquin Logging Museum Tour either as part of the Interpretive Program during July and August or by hiring a Park Naturalist through the Group Education Program at any time throughout the year. Check [www.algonquinpark.on.ca/programs](http://www.algonquinpark.on.ca/programs) for more details.

**Interpretive Walking Trails** – Head out for a hike on one of the Park's 18 self-guided interpretive trails. Trails with tree and forestry related themes include: Hardwood Lookout Trail (at km 13.8); Two Rivers Trail (at km 31.0); Big Pines Trail (at km 40.3); and Berm Lake Trail (at the Achray Campground).

**Purchase a Tree Field Guide** – Many excellent field guides exist to help you better understand trees, their identification, and life histories. The comprehensive *Trees in Canada* is one such field guide that features pictures, line drawings, and descriptions of trees found in Algonquin Park and beyond. Field guides are available at The Friends of Algonquin Park Bookstore at the Visitor Centre and Logging Museum or online at [www.algonquinpark.on.ca](http://www.algonquinpark.on.ca)

**Visit the Algonquin Forestry Authority Website** – Want to learn more about the crown agency responsible for sustainable forest management in Algonquin Park? Check [www.algonquinforestry.on.ca](http://www.algonquinforestry.on.ca) to find out about forest management, forestry facts, environmental management systems, forest certification, forestry operations, and more.



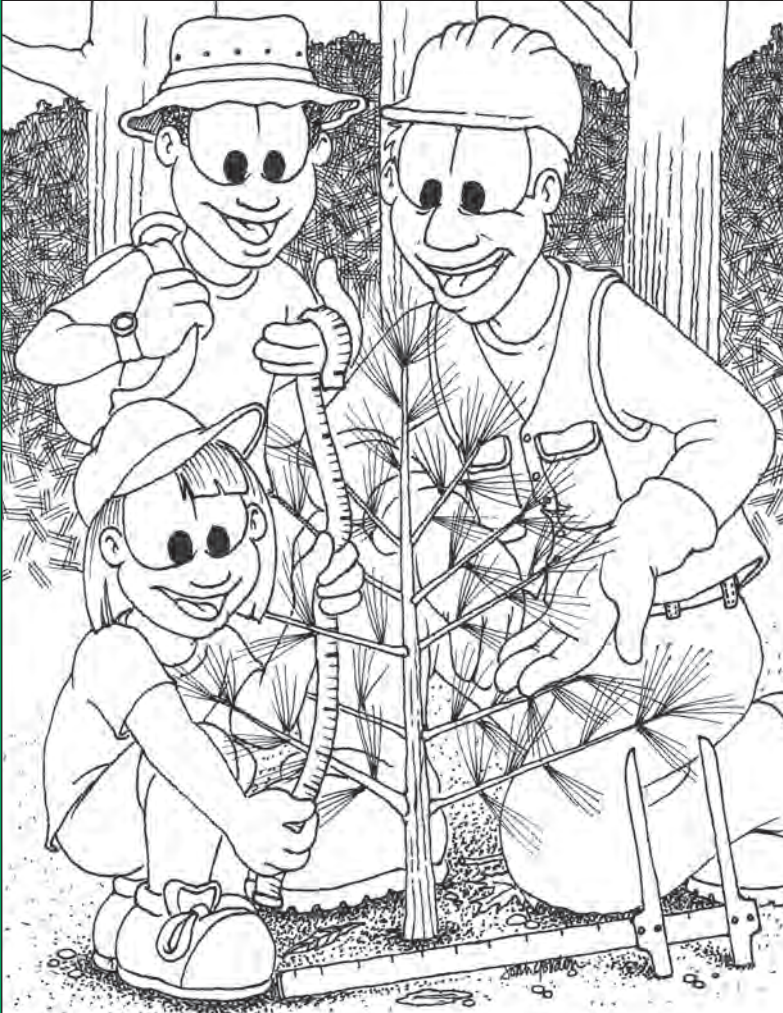
### THE FRIENDS OF ALGONQUIN PARK

Box 248, Whitney, ON K0J 2M0 Phone: (613) 637-2828 • Fax: (613) 637-2138  
[www.algonquinpark.on.ca](http://www.algonquinpark.on.ca)



# Junior Forest RANGER PROGRAM

**FREE ACTIVITY BOOKLET 2009**



# How to Become a JUNIOR FOREST RANGER

A Junior Forest Ranger is an Algonquin Provincial Park visitor (aged 12 or under) who is interested in serving as an Algonquin Park ambassador by discovering aspects of Algonquin's natural and cultural heritage through completing fun activities in this booklet.

By completing 6 activities (or more) you will discover and be better able to appreciate and protect Algonquin Park, while exploring its forest and logging history. Along the way, you'll have fun learning about the Park, gain a tremendous sense of accomplishment and have the chance to win cool prizes.

So get ready to travel to different areas of the Park, and complete activities in this booklet for the opportunity to become a Junior Forest Ranger.

## How does it work?

- 1) Complete any 6 activities in this booklet.
- 2) Bring your completed booklet (with the last page filled in) to the Algonquin Logging Museum (at km 54.5) during regular business hours (daily 9am to 5pm) from May 16 to October 12, 2009.
- 3) The Park Staff will inspect your work, and if you've successfully completed the required number of activities, you'll be deemed an Algonquin Park Junior Forest Ranger and awarded the official seal for your certificate.
- 4) Upon completion, you can also enter into a draw to win a Junior Forest Ranger Prize Pack\*.

*\* One winner will be randomly selected on October 30, 2009 from all completed entries to win a Junior Forest Ranger Prize Pack filled with Algonquin Park related merchandise.*

## Brought to you by:



### **The Friends of Algonquin Park**

Enhancing educational and interpretive programs in Algonquin Park



### **Algonquin Forestry Authority**

Committed to ensuring the long-term health of Algonquin's forests

*In cooperation with:*



### **Ontario Parks**

Nearby and natural

# 1 WHERE'S THE WOOD?

Many everyday items may contain wood. From the objects below, identify and circle at least 7 things that contain material from a tree.

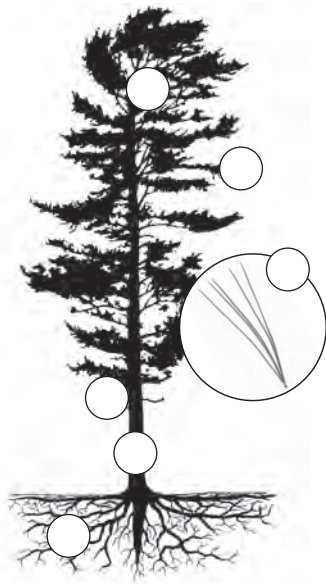
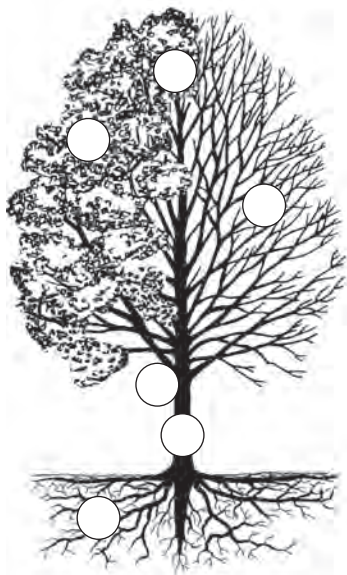


## 2

## PARTS OF A TREE

Algonquin Park is home to 34 species of native trees. Twenty-four of these are broad-leaved, deciduous trees meaning they lose their leaves in autumn, while 10 are conifers that produce cones and typically do not lose their needle leaves in autumn.

Using the deciduous and coniferous tree diagrams below, match the list of tree parts to the location where the parts are on the two tree diagrams.



- 1) **crown** – the leafy head of a tree
- 2) **bark** – the protective outer covering of the trunk and branches of a woody plant
- 3) **trunk** – the main stem of a tree, composed mainly of dead, woody cells covered by a thin layer of living tissue under a protective cover of bark

- 4) **branch** – a secondary shoot or stem arising from the trunk
- 5) **leaf (or needle)** – a greenish lateral outgrowth from a plant stem that functions primarily in food manufacture by photosynthesis
- 6) **root** – underground plant part

### Who's Confused?

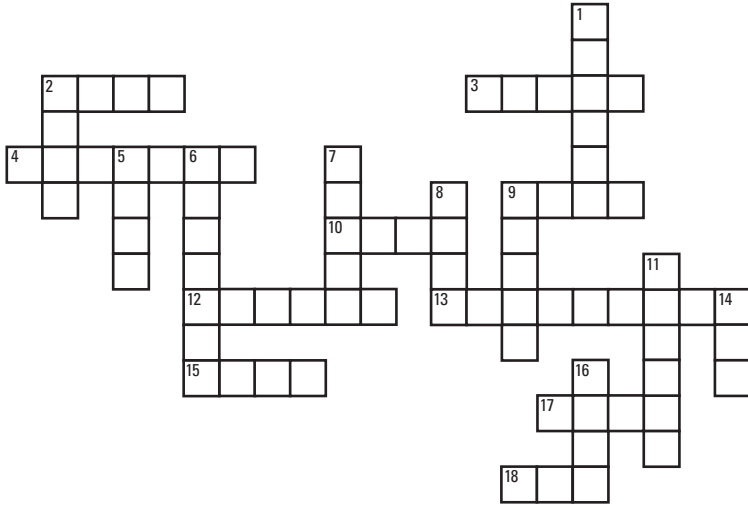
One tree in Algonquin Park, the Tamarack (*Larix laricina*), is unique, because it both produces cones and loses its leaves.





# TREE TERM CROSSWORD

Complete the puzzle using the clues shown below.



## Across

2. A small shoot or branch.
3. A tree with peeling bark that can be built into canoes.
4. A type of conifer that prefers growing in moist locations in Sugar Maple forests.
9. Outer protective covering of a tree's trunk and branches.
10. The type of tree that dominates the eastern one-third of Algonquin Park.
12. The part of a seed plant that normally bears reproductive organs.
13. A tree that loses its leaves in preparation for winter.
15. This portion of the plant holds the tree in the ground.
17. What holds the seeds on a conifer.
18. An undeveloped leaf, stem, branch or flower.

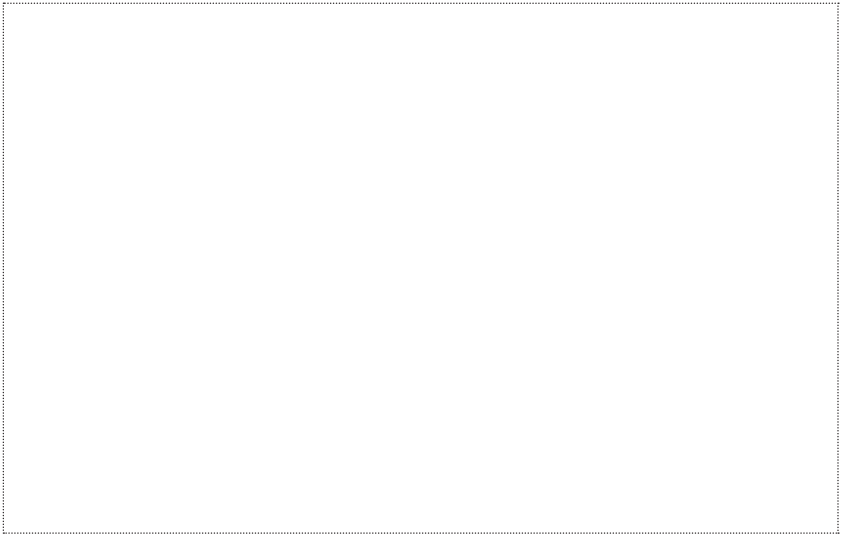
## Down

1. The sweet liquid secreted by a tree to attract insects for pollination.
2. An erect, perennial, typically single-stemmed, woody plant that can reach over 4 metres in height.
5. Part of the tree that has the job of making food.
6. Tree that produces cones.
7. Algonquin's most common type of tree in the western two-thirds of the Park.
8. This could turn into a "baby tree".
9. A tree that produces large nuts which are a favourite of bears in the autumn.
11. The tiny, powdery grains that contain the male reproductive cells.
14. Mineral and sugar rich liquid that circulates within a tree.
16. Tough, fibrous material forming most of a tree.

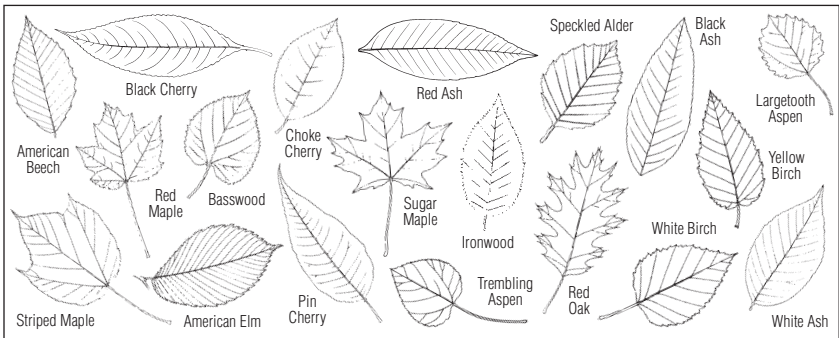
# 4

## PARTS OF A LEAF

1. Find a small fallen deciduous leaf around your campsite or on a trail.
2. Make a rubbing of the leaf in the box below by placing the leaf under the paper and rubbing gently with a pencil or crayon.



3. Using the list of words and their definitions provided, identify the parts of your leaf.
  - a. **blade** – the broad, flat part of a leaf
  - b. **midvein** – the middle vein of a leaf
  - c. **side (lateral) veins** – the veins that connect to the midvein
  - d. **stalk** – the “stem” of the leaf
  - e. **tooth** – a small, often pointed lobe on the edge of a leaf
4. Using the diagrams below, identify which leaf looks similar to yours?



## 5

## BARK AND BITE

Bark is the woody outer covering of dead cells that protects a tree from physical damage, disease and insects. Imagine you are a bark beetle and “eat” your way into the center of the tree.

**STUMP YOUR PARENTS**

Ask your parents this question...

**Q:** What is a tree?

The answer might be harder than you think.

**A:** A tree is...

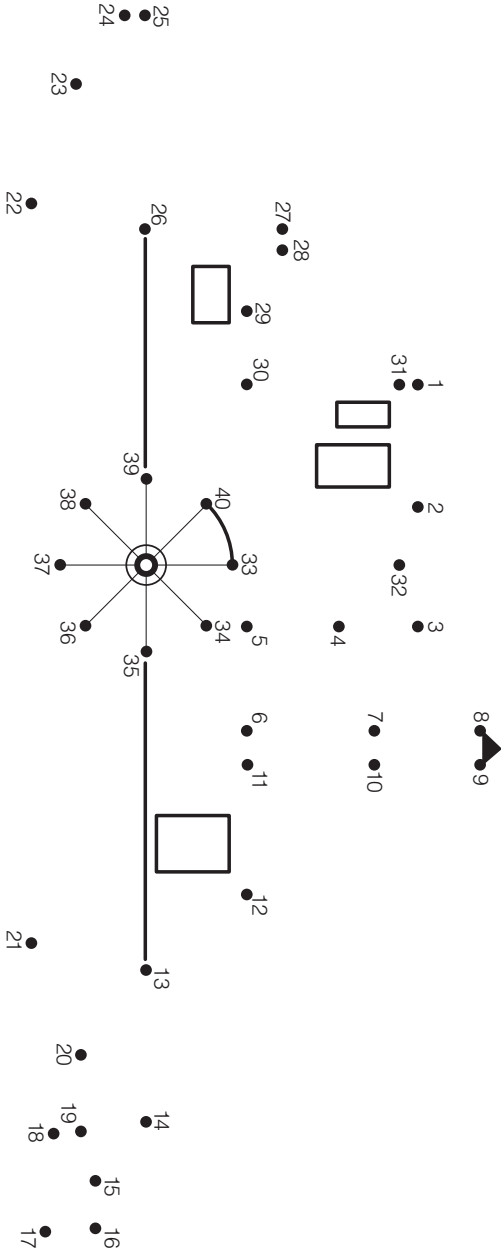
- a perennial (meaning to grow more than one season)
- a plant with a woody stem
- can potentially grow to over 4 metres (13 feet) in height
- can potentially grow to a diameter (measured at breast height) of at least 7.5 cm (3")



# 6

# CONNECT THE DOTS

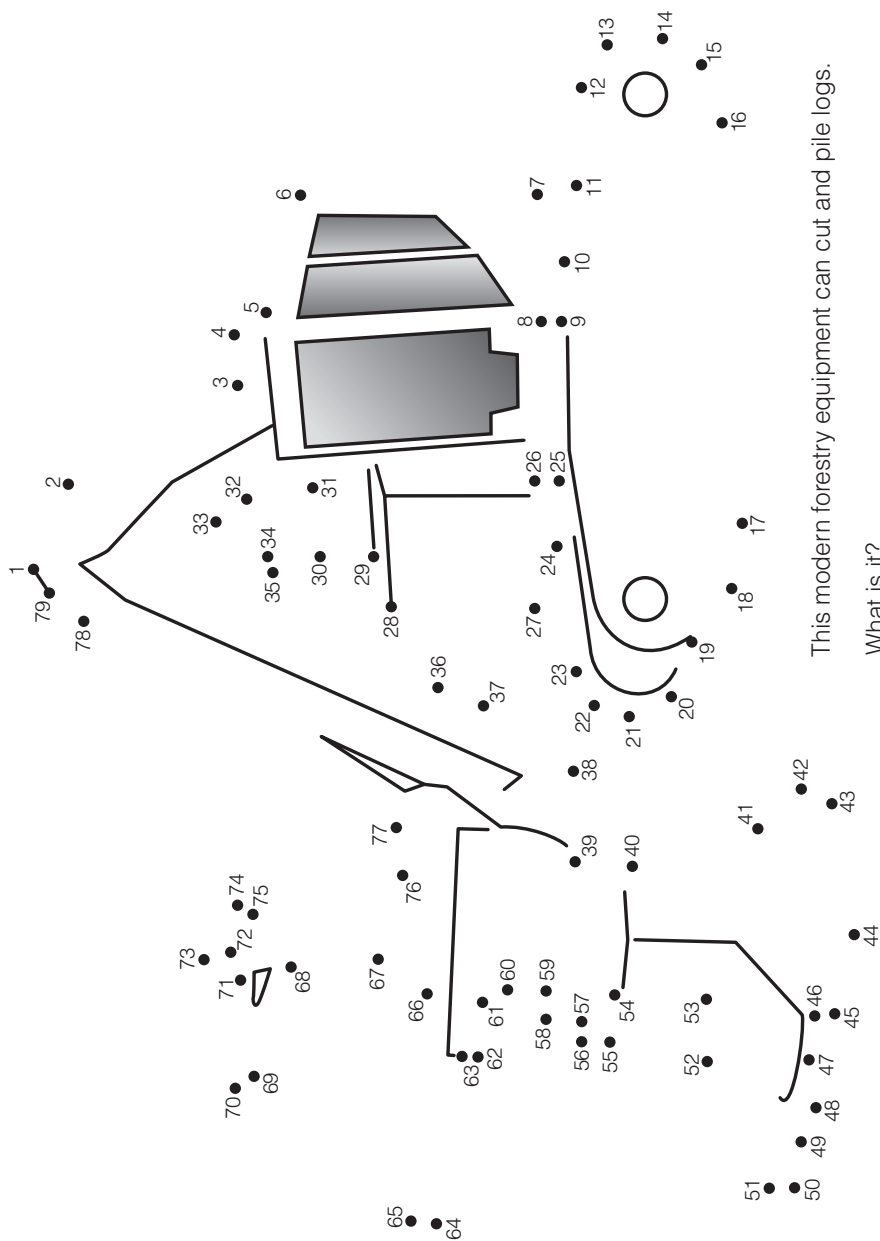
Connect the dots in the proper order to reveal the hidden objects.



This historic forestry equipment 'tugs' logs across lakes. Come visit it at the Algonquin Logging Museum.

What is it?

---



This modern forestry equipment can cut and pile logs.

What is it? \_\_\_\_\_

7

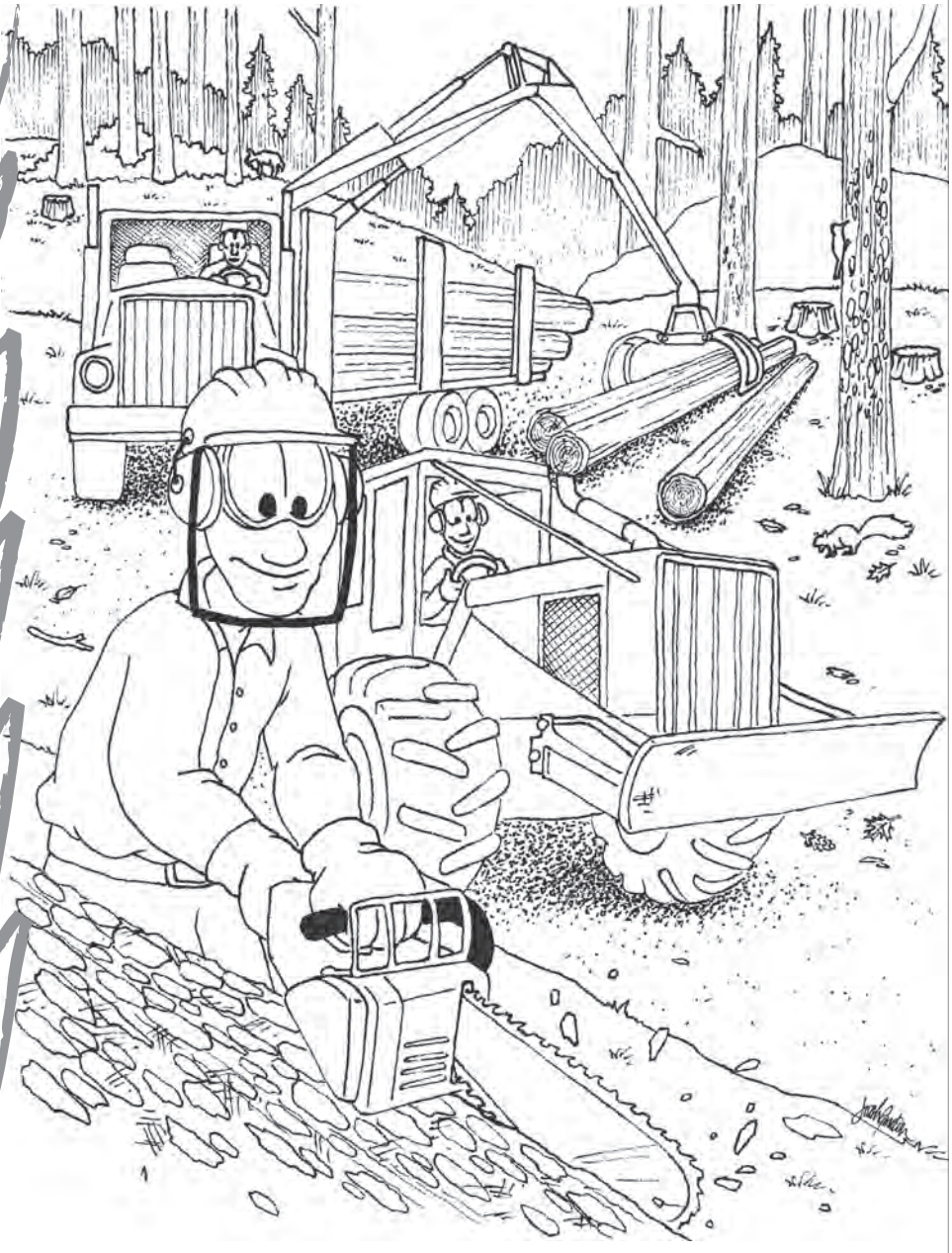
# FAST FORWARD MATCHING

1890s



After colouring these two logging scenes, match the historic tools to the modern day version that performs the same task.

2009





# FORESTRY WORD SEARCH

Find the forestry-related words hidden in the grid of letters below.

E C I T C A R P T N E M E G A N A M T S E B F T M  
 T N E M E G A N A M T S E R O F S L R P S A E S E  
 O W I A S L A I B A L T G I O T N E D R Q R L E T  
 O A Q G U I G R O I N L T I A S G E E O U R L R S  
 F S S N N L L B E E O A I M S E F H R D A I E O Y  
 D T U C E E R V M A C D P M N V E W E U R E R F S  
 R U S B H E Y S I I O I I E W R C Y W C E N B L N  
 A C T O T I S E F C N F R V B A O Z O T T G U A O  
 O S A N R E C I K G U A C E E H S A P I I E N E I  
 B S I E S S T O H N T L A O T R Y R M V M R C R T  
 C O N S E R V A T I O N T R N Y S C A I B B H O C  
 P R A T E H M R O O S D U U G C T I E T E R E B E  
 H C B C T M H N N O I T A E R C E R T Y R A R E L  
 H T L A E H L A C I G O L O C E M R S Y Y K E A E  
 R S E R N O I T A T S E R O F E R G N I D E E S S

area of concern

assessment

Barrienger Brake

beans

belgian

best management practice

biodiversity

board foot

boreal forest

certification

chicot

conservation

crazy wheel

crosscut saw

donkey engine

ecological

ecological health

ecosystem

fellerbuncher

forest management

harvest

management

pointer boat

productivity

recreation

reforestation

regeneration

sawmill

seeding

selection system

silviculture

square timber

stamping hammer

steam-powered

sustainable

timber

Use the leftover letters beginning in the top left corner to spell the "hidden phrase".

-----

-----



# TOUR THE LOGGING MUSEUM

Visit the Logging Museum (km 54.5) and search for information to complete the questions below. You may have to watch the 10 minute movie *Loggers of Algonquin*, use the trail guide and investigate the exhibit panels located around the trail.

1. In the early years, what species of tree were loggers interested in cutting?

\_\_\_\_\_

2. Why did the loggers “square” the trees they had just cut?

\_\_\_\_\_

3. Who wanted these square timbers?

\_\_\_\_\_

4. How did loggers move the square timbers in spring?

\_\_\_\_\_

5. Why did the squaring of timber stop in Algonquin and beyond?

\_\_\_\_\_

6. After squaring timbers stopped, the men cut \_\_\_\_\_ , which continues even today.

7. Is logging still going on in Algonquin Park today?      Yes      No

8. Name the crown agency that manages forestry in Algonquin Park today?

\_\_\_\_\_

9. The three most commonly cut species of tree in Algonquin Park today

are \_\_\_\_\_ , \_\_\_\_\_

and \_\_\_\_\_.

10. Today, the word \_\_\_\_\_ is the principle by which the amount of trees harvested in a year is equal to the amount grown in a year.

# 10 TREE TIME

Trees grow at different rates. Some small trees are very old and other big trees can be quite young, depending upon growing conditions. As many people know, the best way to tell a tree's age is to count its "rings". This process of counting tree rings is called dendrochronology (den-droh-kruh-nol-uh-jee) or "tree time".

When a tree grows in an area with different seasons, the tree produces two different types of wood representing two seasons. The earlywood is made up of larged pored cells within the tree's wood that are produced in the spring showing a light colour. The latewood is made up of small pored cells that are produced later in the growing season showing a dark colour. When the light coloured earlywood is combined with the darker latewood, it represents an annual ring or one year's growth for that tree.

Using the sample cross section below, answer the following questions.

Based upon the number of visible rings, how old is this tree? \_\_\_\_\_

If this tree was cut in 2008, when did the tree start growing? \_\_\_\_\_





# MAY THE FOREST BE WITH YOU... NOW AND FOREVER

Sustainable forestry is carried out in Algonquin Park. This ensures healthy and vibrant woodlands and waterways in the Park while providing access to local forest products.

See if you can fill in the blanks with words from the list below and discover some of the best practices that are carried out in the Park.

- 1.5%
- ecopassage
- environment
- old growth
- portable
- reserve
- selection
- shelterwood
- silvicultural
- stick
- ten
- turtles

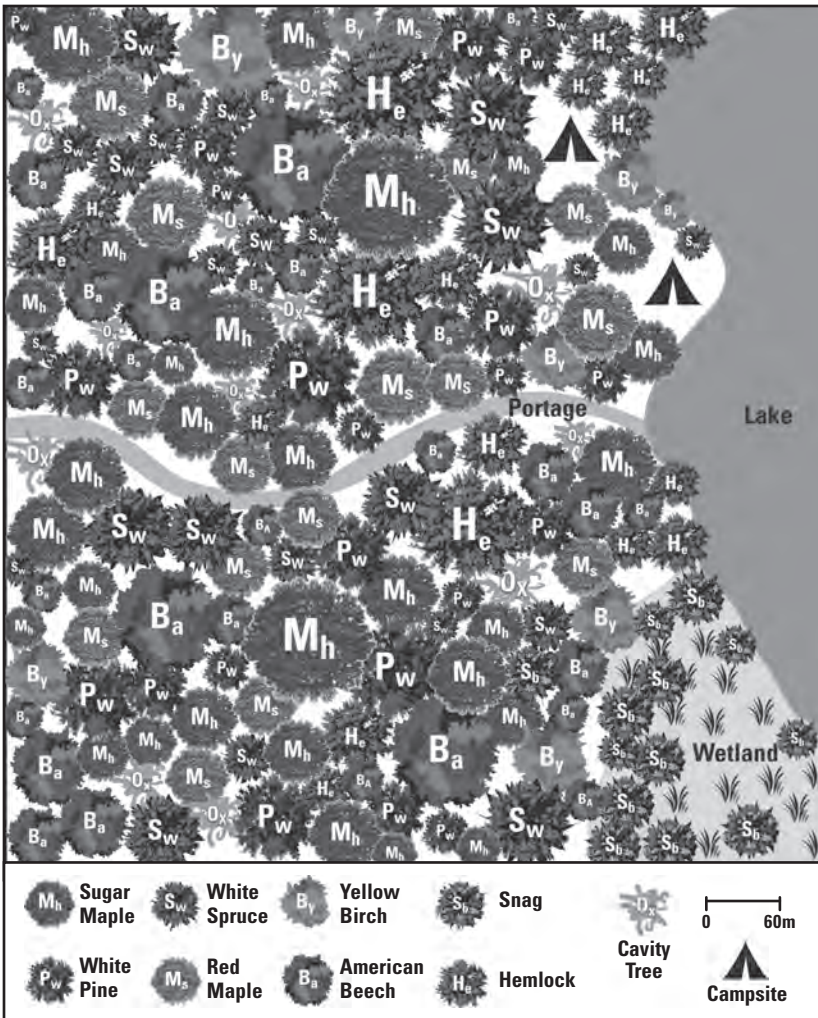
1. \_\_\_\_\_ bridges can be used and removed easily over water crossings. This helps to protect wildlife habitat.
2. In hardwood stands some individual trees are marked for removal so the surrounding ones may grow larger and healthier. This practice is called the \_\_\_\_\_ system.
3. Sometimes pines are removed in stages to allow natural seeding by the larger trees. This cutting technique is called \_\_\_\_\_ harvesting.
4. The Algonquin Park Forest Management Plan is updated at \_\_\_\_\_ year intervals. This planning protects the \_\_\_\_\_ of Algonquin Park.
5. A certain number of older trees are protected in wilderness zones and other areas of the Park. These areas are sometimes called \_\_\_\_\_ forests.
6. Tree markers watch for \_\_\_\_\_ nests which might be occupied by raptors. A protected area is set around these so the young birds will not be disturbed.
7. Areas around Brook Trout lakes, portages, and canoe routes where no forestry is carried out are called \_\_\_\_\_ zones.
8. One of the employees at the Algonquin Forestry Authority developed a special bridge called an \_\_\_\_\_ that allows light to shine in. \_\_\_\_\_ prefer this option rather than culverts when crossing under roads.
9. Tree harvesting is carried out on \_\_\_\_\_ of the Park annually.
10. The Algonquin Forestry Authority supports research, education, tree planting, and other \_\_\_\_\_ programs.



# 12

## THE FINAL CHALLENGE...

Below is an aerial view of a section of the recreational/utilization zone of Algonquin Park, where forestry is permitted. This section of forest is typical of the western two-thirds of the Park in that trees are harvested using the selection system. This means trees of many ages and sizes are present in these forests and at intervals of 20-25 years a partial harvest is performed. The harvest removes trees which are mature or in declining health, while retaining sufficient trees for wildlife needs. Healthy trees are given more room to grow, younger trees are given more light from above and a new crop of seedlings is naturally established on the forest floor.



# MANAGING THE ALGONQUIN FOREST

You have been hired as a “junior tree marker”, who determines what trees can be cut in compliance with the Algonquin Forest Management Plan in this section of forest. The Forest Management Plan\* states that to protect Algonquin for future generations:

- The area within 60 metres of a lake, wetland, portage, or campsite is protected\*. For the purposes of this activity, no cutting is permitted in this protected area.
- Only 1/3 (33%)\* of trees can be harvested growing outside protected areas to ensure trees for future generations.
- Cutting cavity trees used by birds and mammals should be avoided.\*

## Your task is...

1. On the forest image, shade the protected zones around the lakes, wetlands, portages and campsites. Use the scale on the map to help determine 60 metres.
2. Outside the protected zones, select different sized and species of trees to harvest. Remember, using the selection system, trees need sunlight in order to grow, so keep the remaining trees spaced to encourage their growth and ensure the next generation of trees.
3. Place an “X” through the trees you wish to harvest. Finding the right combination of trees might be harder than you think.
4. Record your efforts on the table below.

Species	Forester's Species Codes	Number of Trees Outside of Protected Areas	Number of Trees Harvested
Sugar (hard) Maple	M <sub>h</sub>		
White Pine	P <sub>w</sub>		
Yellow Birch	B <sub>y</sub>		
American Beech	B <sub>a</sub>		
Eastern Hemlock	H <sub>e</sub>		
Red (soft) Maple	M <sub>s</sub>		
White Spruce	S <sub>w</sub>		
Black Spruce	S <sub>b</sub>		
Cavity Tree	O <sub>x</sub>		
	<b>TOTALS</b>		

\* These numbers do not reflect the actual values in the Algonquin Park Forest Management Plan but are used for educational purposes only. To learn more about forestry in Algonquin Park check the Algonquin Forestry Authority website at [www.algonquinforestry.on.ca](http://www.algonquinforestry.on.ca)



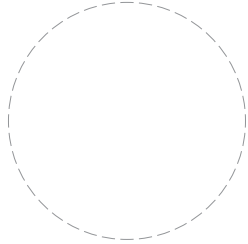
Algonquin  
Forestry  
Authority



# JUNIOR FOREST RANGER

This certifies that \_\_\_\_\_

has been deputized as an Algonquin Park Junior Forest Ranger  
to serve as an Algonquin Park ambassador by discovering  
and sharing all aspects of Algonquin Park's  
natural and cultural heritage with others.



Approved by

John Winters  
Algonquin Park Superintendent

Date \_\_\_\_\_

# WHEN YOU ARE FINISHED!

When you have completed at least 6 activities, fill out this page with your contact information and take your completed booklet to the Algonquin Logging Museum (km 54.5). When you get there, Park Staff will verify your completion of the activities and then you'll be able to enter the draw for a Junior Forest Ranger Prize Pack.

## Contest Entry Form

Yes, please enter me into the random draw for a Junior Forest Ranger Prize Pack to be held on October 30, 2009.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Province/State \_\_\_\_\_

Postal/Zip Code \_\_\_\_\_

Country \_\_\_\_\_

Daytime Phone Number \_\_\_\_\_

E-mail Address \_\_\_\_\_

All personal information collected above will be used only for the selection and notification of the winner of the 2009 Junior Forest Ranger Prize Pack and notification of upcoming Junior Ranger Programs. The winner will be notified after the completion of the draw on October 30, 2009 at the Algonquin Visitor Centre.

## What did you think?

We'd love to hear your feedback about the Junior Forest Ranger Program.

Activities completed (circle): 1 2 3 4 5 6 7 8 9 10 11 12

Validation Signature: \_\_\_\_\_

