

FACTS:

- Trees are renewable, biodegradable, recyclable and environmentally friendly.
 - There are more forests growing in North America today than on the first Earth Day in 1973.
 - Each year in Canada, about 600 million seedlings are planted.
 - Today, B.C. has more forests that are over a century old than it did 40 years ago - 25 million hectares.
 - B.C. has laws and policies to protect wildlife and fish habitat and it has set aside 13% of its land base as parkland.
 - The Western Red Cedar tree is B.C.'s official tree.
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Interior Logging Association
Vernon, BC

For further information contact the ILA
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FOREST EDUCATION VAN

Intermediate - Grade 4/7 **ACTIVITY BOOKLET**



Name: _____

Date: _____

A History of Logging

1. List 2 methods of transporting logs.
(2 ways of moving logs)

2. What is the method of harvesting?
(How is the tree being cut down?)

3. Logs in the bush were hauled first by oxen and then by donkeys or horses. Later a steam donkey was used. Why do you think there were changes to the method of hauling?

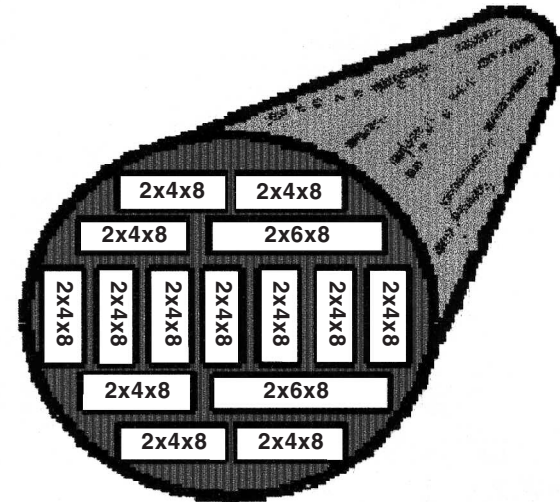
4. What machine would we use today in place of the axes and crosscut saw shown on the mural?

Bonus:

After looking at both murals, list as many changes in logging as you can:
(don't forget about rules of safety)

Wood Products

We get many wood products from trees. This log shows how you can get different sized lumber pieces from a round log. Today, there is very little waste from the tree - all parts left over are used for new products or used to produce heat and electricity. Other waste is used for landscaping and sewage treatment.



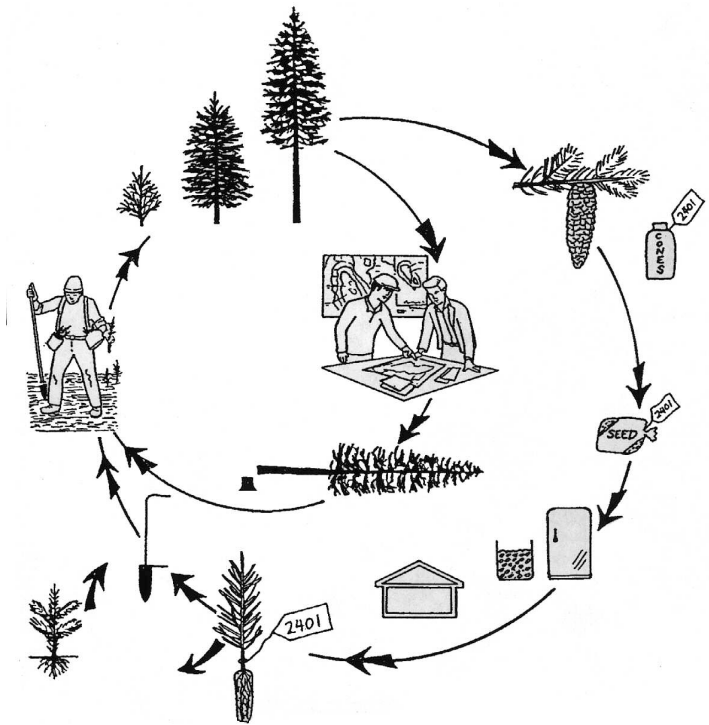
Some common wood products would be:

- Lumber
- Plywood
- Wood chips
- Panel board and poles
- Value added goods (such as furniture)

In the wood products display there are many unusual products.
Name some of these:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Reforestation



Inner circle Forest Management

- Planning
- Harvesting
- Reforestation
- Tending

Outer circle Growing new trees

- Seed cones picked
- Seed extracted
- Seeds in cold storage
- Seeds in soil at greenhouse
- Trees planted in forest

Did you know:

- By law in BC, all harvested areas must be reforested
- In May 2002, the 5 billionth tree was planted in Prince George, B.C.
- The ecology of the area determines the (tree) species to be planted

Question:

Why do you think it's important to plant more trees?
Give more than one reason.

A Renewable & Sustainable Resource

1. Our forests are a resource because we can cut the trees down and turn them into products like poles, lumber & plywood . These products can then be sold.
 - a) Why is it called renewable?

**b) Define the word sustainable.

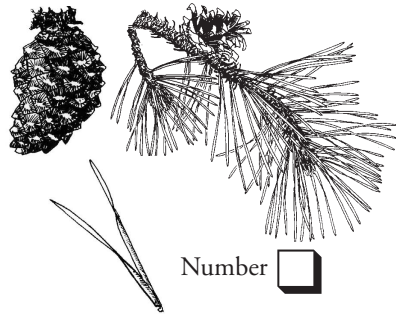
2. Helicopter logging and using a "feller buncher" are two modern day methods of logging. The type of ground determines when they are used.
 - a) A _____ would be used on steep slopes and a _____ would be used on flatter ground with smaller dimension trees.
3. Stand Tending can involve "Pruning" and "Thinning". Pruning a tree produces clear wood (wood without knots). Trees also need lots of light and water. Thinning of plants in your garden allows remaining plants to grow bigger and better. How can thinning be useful in a young forest?

Tree Identification

Match the tree sample numbers to the information on this sheet.

Lodgepole Pine

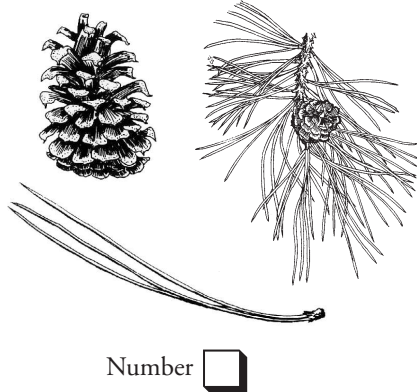
- Needles in clusters of 2
- Needles about 2 1/2 - 5 cm. long
- Bark is thin, scaly from orangey-brown to gray
- Cones are lopsided and smaller than Ponderosa pine cones



Number

Ponderosa pine

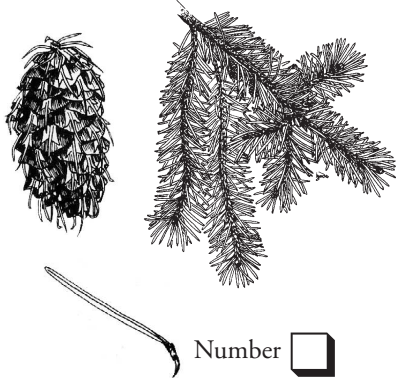
- Needles in clusters of 3
- Needles about 12-28 cm. long
- Bark is orangey-jigsaw shaped
- Cones are 7-14 cm. long



Number

Douglas Fir

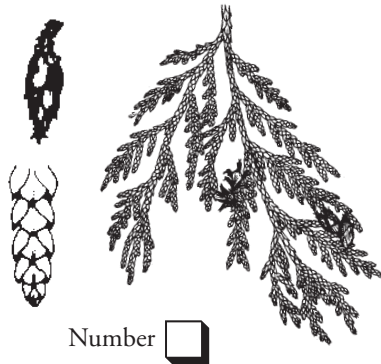
- Needles are flat, sharp pointed
- Needles are about 2 -3 cm. long
- Mature bark - has large grooves
- Cones have 3 pronged bracts



Number

Western Red Cedar

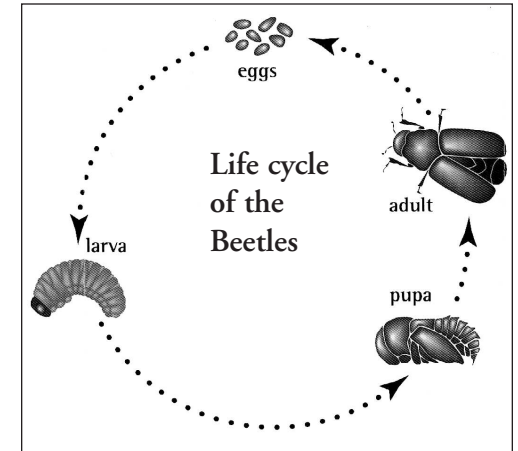
- Scale like leaves that overlap like shingles
- Cones are egg shaped
- Bark is stringly - can be peeled



Number

Beetles

- Beetles can be very destructive pests in our forests. They generally prefer weakened trees but can attack a healthy tree. Occasionally, the beetle infestation (attack) will become an epidemic, killing thousands of hectares at a time. The adult female beetle begins the attack by burrowing in under the bark digging out tunnels called galleries and giving off a scent (pheromone) that attracts the male beetles. The beetles mate and the female lays her eggs in the galleries. When the eggs hatch the larvae create more tunnels in which they overwinter. In the spring they pupate and become adult beetles, eventually leaving the tree to fly and infect a new tree. The many galleries that are created kill or weaken the tree by cutting off the food supply that flows through the phloem (layer just under the bark).



- Trees that have been infected by beetles will try to eject them by sending out pitch at the entry holes.
- Fire and/or cold winters help control the growth of beetle populations.

Draw a picture of a gallery created by beetles.



Questions:

1. Trees that have been attacked by beetles and are dying are _____ (colour).
2. One way to prevent beetles from spreading is to cut down trees in and around the infected area. Explain how this helps.

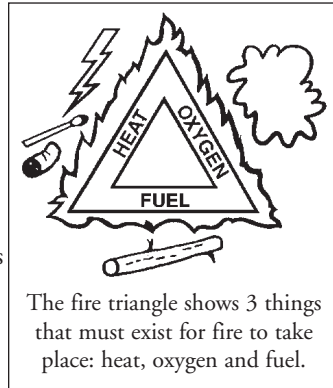
Bonus:

Another way to prevent beetles from spreading is to use a pheromone trap. Explain how this trap works.

Fire

- Fire is a natural occurrence that promotes the constant state of change that is necessary to a healthy forest.

- Many things can weaken a tree making it more susceptible to fire:
 - drought dries out the underbrush, turning it into a fuel for fire
 - beetles tunnel in under the bark; cutting off the food supply to the tree
 - suppression of fire (fire prevention) allows the underbrush to build up



- A growing forest will eventually cut off the sun light to lower plants. These plants die and pile up as dead wood and litter creating fuel for a future fire strike.
- Lightning, forest industry activity and people who use the forest create fires.
- Three things that affect how a fire will behave are: fuel, weather and the lie of the land (topography).
- Reforestation of areas that have been affected by fire continues the natural process of succession in our forests. The forest will go through a series of stages as it matures. With the change from one stage to another, will come a change in the biodiversity (variety of life) for that area. So while it is true that many plants and animals will lose their habitat due to fire, new plants and animals will appear that can thrive on the changed conditions. As the forest matures, the biodiversity will change accordingly.

Questions:

1. People using the forest cause 50% of forest fires. List ways in which people cause forest fire.

Bonus:

Explain how you think the topography (mountains, valleys, streams, etc.) of the land can affect how a fire will burn.

Wildlife Trees

- Wildlife Trees supply food and shelter for animals.
- For every area logged, plans are made to leave wildlife trees or tree patches.

Wildlife users fall into 3 groups

- Primary cavity nesters form holes in the soft, decaying wood of trees. They make new holes each year.
- Secondary nesters use abandoned holes and natural cavities created by broken tops, lost branches and lightening strikes.
- Platform or Open Nesters perch or nest in thick branches or tops of large trees.

Complete the following chart by listing the 3 Wildlife User Groups and giving an example of an animal that is in each group:

<u>Wildlife User Group</u>	<u>Wildlife Example</u>
1.	1.
2.	2.
3.	3.

Inside - What I Know

How do humans use the forest?

What I know before the van tour.	What I learned from the van tour.
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

What are some of the things that affect the health of the forest?

What I know before the van tour.	What I learned from the van tour.
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Machines

1. Sketch one method of logging from the past.

2. Sketch a modern day method of logging.

Bonus:

Create a machine for the future that will replace the machine above. Give it a name.