

TREES AND THE URBAN FOREST

UNIT OVERVIEW

While walking through the urban forest, you might discover that there is a “Fungus Among Us”, but don’t run. This exciting and motivating unit is designed to capture and hold student interest as they learn about the trees in their own community. Specifically, students investigate Dutch elm disease as it affects elm trees. “**Part I - Core Lessons**” provides an informational framework for the unit. Exciting activities related to the core lessons go hand-in-hand with a series of student notes about each of the topics contained in “**Part II - Student Notes**”. “**Part III - Optional Lessons**” adds flexibility to the unit with enrichment activities. “**Part IV - The Urban Forest In Pictures**” provides still more. This unit is sure to be a *treet*!

PART I - CORE LESSONS

This knowledge-based section focuses on key concepts and factual information.

- | | |
|--|--|
| 1) The Urban Forest | Meet A Tree (observation activity) |
| 2) Trees - What They Can Do For You | Word Web Development |
| 3) Trees - What You Can Do For Them | Ewald The Elm Tree (story) |
| 4) Trees - A Food Factory | Food Factory Worksheet |
| 5) Problems In The Urban Forest | Dutch Elm Disease Poster And Activity Worksheets |
| 6) Dutch Elm Disease - What Is It? | Disease Detection Survey |
| 7) The Spread Of Dutch Elm Disease | Beetlemania! |
| 8) Prevention Of Dutch Elm Disease | Prevention Poster |

PART II - STUDENT NOTES

These notes eliminate the need for a textbook and can be written on the board or presented as overheads for students to copy into their notebooks.

PART III - OPTIONAL LESSONS

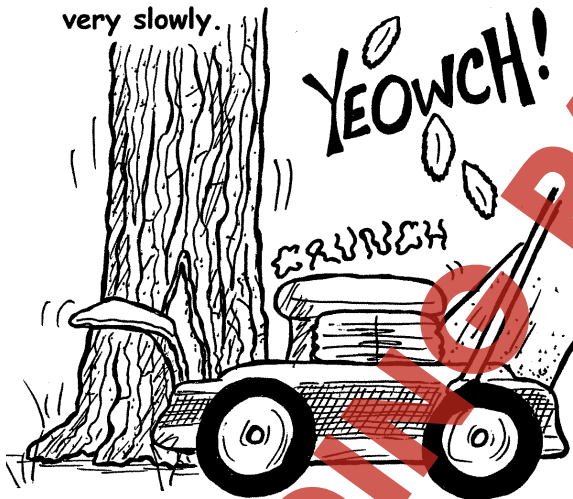
The optional activities help to build a degree of flexibility into the unit. Optional assignments can be added as separate activities, used to compliment other topics, or given as enrichment.

- 1) **The Urban Forest Crossword**
- 2) **The Urban Forest Matching Review**
- 3) **Urban Forest Sample Exam**
- 4) **Tree Planting - Green Side Up**
- 5) **Patchwork Leaves**
- 6) **Poetree**
- 7) **The Giving Tree - Story**
- 8) **Playground/Park Design**
- 9) **Tree Identification**
- 10) **Urban Forest Wordsearches**
- 11) **Who Got Killed By A Lawnmower? (logic puzzle)**

PART IV - THE URBAN FOREST IN PICTURES

A collection of tree diagrams and a cover that can be coloured by students.

Mr. Jones would carefully cut the grass around Ewald in the front schoolyard. He pushed a lawnmower around the trees so he could get closer to them. Every now and then when he was in a hurry, he banged Ewald's tree trunk. He once peeled a big piece of bark off with the lawnmower. Some of Ewald's sap leaked out. Did this kill Ewald? No. Ewald continued to grow ... very slowly.



One spring though, Ewald couldn't get enough sap up to some of his upper limbs. He wasn't feeling that well to begin with, and now that he was bigger, nobody thought to water him. That nick in the trunk from the lawnmower didn't help him either. Ewald was very

thirsty. He couldn't get enough water and lots of water would have been just right at this time. Did this kill Ewald? No. But he was becoming very stressed. He still grew though... even slower.



Some of the insects in the neighbourhood noticed that Ewald had started to smell a little different now that he had some dead limbs. Insects are attracted to dead, dying and stressed out trees, and Ewald was now on the menu. Every year, Ewald had more and more insects making their homes in him - some good bugs and some bad bugs. He began to develop more dead limbs and no one ever came by to prune them off. Did this kill Ewald? No...not yet. But to an insect, he began to smell even more attractive because he had a dead branch problem.

TREES - LIVING FOOD FACTORIES

Name: _____

1. Match the following.

- | | |
|--|-------------------|
| _____ Hold the tree in the ground | a) bark |
| _____ Produce the food for the tree | b) trunk |
| _____ Protective covering for trunk and branches | c) leaves |
| _____ The main "woody" part of the tree | d) branches |
| _____ The leaves are attached to these | e) roots |
| _____ The food produced inside the leaves | f) photosynthesis |
| _____ How leaves make food | g) sugars |

2. Describe what happens in photosynthesis. Answer in full sentences please.

3. List three things that the roots of a tree do.

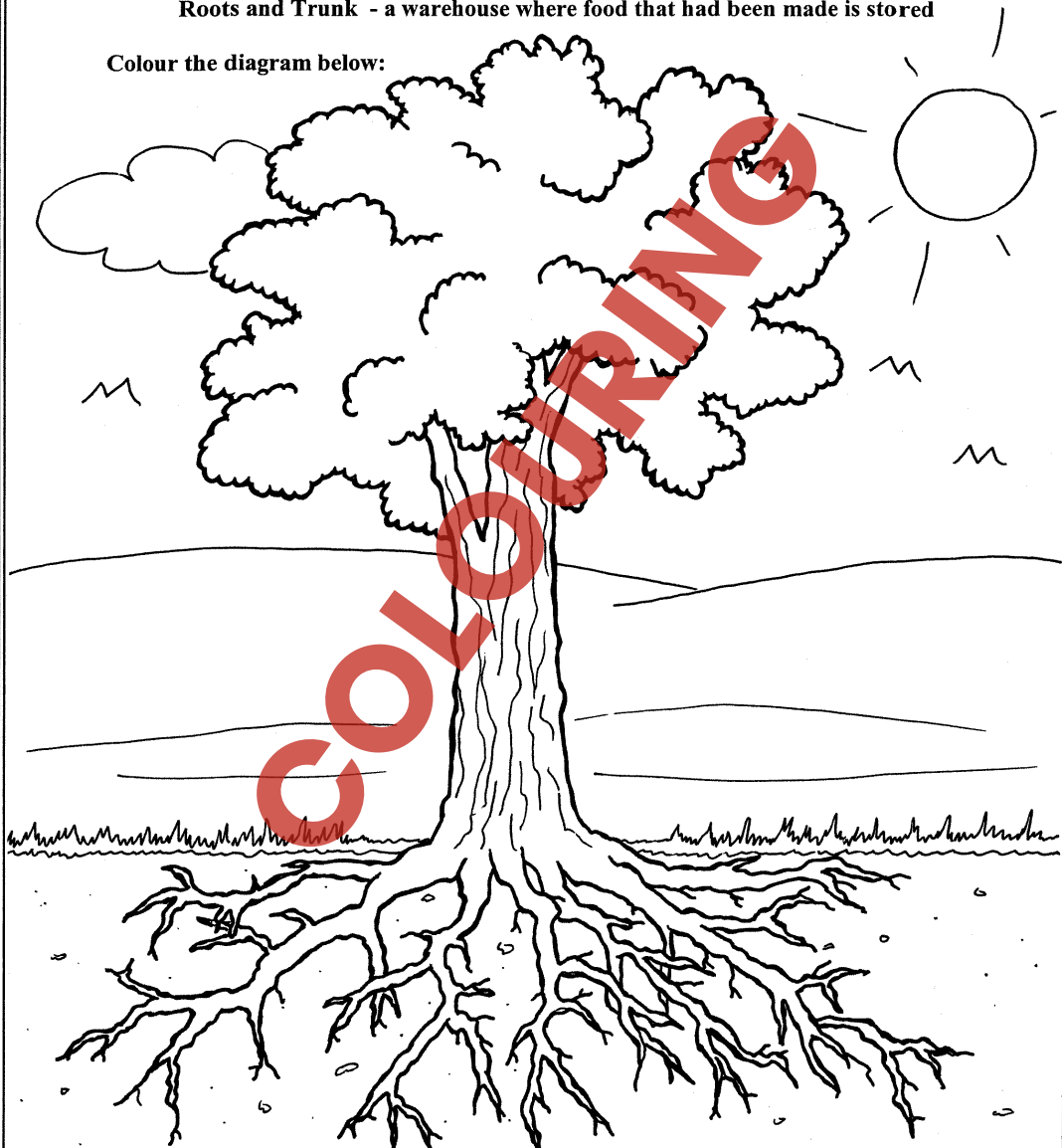
- a) _____
- b) _____
- c) _____



4. A tree can be thought of as a "living food factory".

- Roots - used to collect raw materials to make into food
- Bark - acts like a wall to protect the factory
- Trunk - a transportation system to move things around the factory
- Branches - also help transport materials back and forth
- Leaves - where the food is made
- Roots and Trunk - a warehouse where food that had been made is stored

Colour the diagram below:



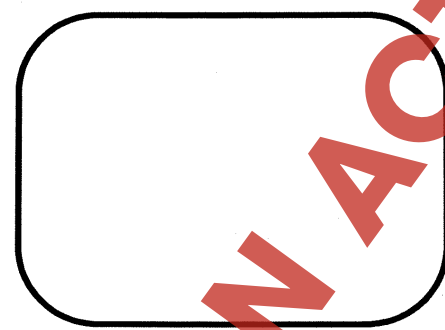
DISEASE DETECTION

Name: _____

Instructions: Your job is to select a tree and to look at it carefully to see if it might have problems or disease.

PART I - DESCRIPTION OF TREE

1. Choose a tree that you will use for this assignment.
2. Draw the shape of your tree in the box below:



3. Bark Colour (tell as much about the colour as you can):

4. Bark Texture (is the bark smooth or is it rough and wrinkled?):

5. Leaf Colour (tell as much about the leaves as you can):

THE URBAN FOREST CROSSWORD

Name: _____



Across

2. Clean air is also called _____ air.
5. When an elm tree has a branch whose leaves wilt in June, it is called _____.
6. Is this a great class?
9. Do this to dead branches on a tree.
10. This tree gets D.E.D.
11. "Vitamins" for trees.
14. Make food for a tree.
16. Help anchor a tree.
18. Contains tubes for carrying water. (Elephants have these too.)
19. Trees provide protection from sun and _____.
20. Leaves produce food called _____.

Down

1. A tree's leaves are attached to these.
2. Dutch elm disease is a type of _____.
3. The sticky, sugar-filled fluid inside a tree.
4. How something feels to the touch. (rough, smooth, bumpy, etc.)
7. Elm Bark _____.
8. Never transport elm _____.
12. Trees provide this for birds and animals.
13. Protective covering for a tree.
15. Trees (especially trees with needles) act as _____ absorbers.
17. An urban forest is a forest that is planted in a town or _____.



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THE URBAN FOREST

Name: _____

Match each term with the correct definition:

- | | | |
|---|----|----------------------|
| _____ Protective covering for tree (dogs do this too!) | a) | Dutch elm disease |
| _____ Contains tubes for carrying water inside tree | b) | shelter |
| _____ Damage caused by living things (insects, disease) | c) | roots |
| _____ Helps anchor tree, collects water and nutrients | d) | leaves |
| _____ Tree damage caused by car exhaust or road salt | e) | trunk |
| _____ Trees provide this for birds and animals | f) | branches |
| _____ Damage caused by cutting (lawnmower) | g) | bark |
| _____ Leaves attach to these | h) | sap |
| _____ A sticky, sweet fluid inside tree trunks | i) | stressed |
| _____ Insect that spreads Dutch elm disease | j) | chlorophyll |
| _____ A fungus that kills elm trees | k) | photosynthesis |
| _____ This happens inside a leaf | l) | elm bark beetle |
| _____ When a tree is not healthy it is said to be this | m) | biological damage |
| _____ The green chemical in plant leaves | n) | fresh air |
| _____ Trees produce this type of air | o) | Holland |
| _____ Trees growing in a city or town | p) | physical damage |
| _____ Roots protect the soil from this | q) | urban forest |
| _____ Makes the food for a tree | r) | environmental damage |
| _____ Dutch Elm Disease discovered here | s) | nutrients |
| _____ "Vitamins" for trees | t) | erosion |



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THE URBAN FOREST

Name: _____

1) Match

- | | | |
|---|----|----------------------|
| _____ Exhaust from a car | a) | Physical Damage |
| _____ Lawnmower cuts on the tree trunk | b) | Environmental Damage |
| _____ Dutch elm disease | c) | Biological Damage |
| _____ Spruce Bud Worms eating the needles of a tree | | |
| _____ Pollution from a factory | | |
| _____ Road salt seeping into the roots | | |
| _____ Kids cutting the bark off a birch tree to make toy canoes | | |
| _____ Wind breaking off tree branches | | |

2) List four ways that trees of the urban forest help people.

- a) _____
- b) _____
- c) _____
- d) _____

3) List four things that people can do to help trees in the urban forest.

- a) _____
- b) _____
- c) _____
- d) _____

4) How does a person know if a tree is not healthy or under stress?

- _____
- _____
- _____

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OPTIONAL LESSON #6 - POETREE

- Students can be encouraged to make up poems about trees.
- The following can be read as an example (Author unknown):

Dear little tree that we plant today
What will you be when you're old and grey

The savings bank of the squirrel and mouse
For the robin and wren, an apartment house

The dressing room for the butterfly's ball
The locust's and katydid's concert hall

The school boy's ladder in pleasant June
The school girl's tent in the July noon

And my leaves shall whisper right merrily
A tale of children who planted me
- Poems can be made in the shape of trees.
- Students can select a tree and use the letters in the name of the tree to make a poem.

Every time I want some shade I call on you
Like the way you watch over me as I lay on the grass
Maybe next year will be just as fun

OPTIONAL LESSON #7 - THE GIVING TREE

- Read students this classic picture book by Shel Silverstein. The book only takes about ten minutes to read and should be found in every school library. (If it is not in your library - ask the librarian to getting a copy.)
- A list of other suggested resources has been included.

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THE URBAN FOREST

Name: _____



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



ANSWER KEY

Bark	Environmental	Physical	Trunk
Biological	Erosion	Prune	Urban Forest
Branches	Flagging	Roots	Dutch Elm Disease
Fungus	Sap	Elm	Leaves
Shelter	Elm Bark Beetle	Nutrients	Soil

AL LESSON #8 - PLAYGROUND/PARK DESIGN

Students in groups of two or three design a city park or school playground. Students should draw a map of their park as seen from the top. (Since, the unit is about the urban forest, insist that student explain where and what type of trees go at the various places on their map)

One suggestion is to have them redesign their school playground so it is now a city or town park.

AL LESSON #9 - TREE IDENTIFICATION

Students collect a wide variety of leaves from the area around where they live in this homework assignment..

The leaves can be pressed between books, mounted on thick paper and brought to school for identification using library resources.

AL LESSON #10 - URBAN FOREST WORDSEARCH

Two wordsearches have been included. They both use the same word list but the second contains words that go diagonally as well as horizontally and vertically.

Answer (Easy)

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

Answer (Hard)

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

AL LESSON #11 - LOGIC PUZZLE

Find out the logic puzzle, "Who Got Killed By A Lawnmower?". Students use deductive reasoning and the information they have learned about the various types of tree damage, to solve the puzzle. Students can work on this puzzle in groups of two or three.

The puzzle is tricky and some students may need to be given hints and clues to complete it. Some teachers may choose to work through the puzzle together with the class. An answer key is provided on the following page.