

Parts of the Whole

Subjects: Mathematics, Science

Objective: Students will learn the basic parts of a tree, as well as what role each plays in the tree's survival.

Material Needs:

Pencils

Colored pencils

Student handout – Parts of the Whole

Teacher handout – Parts of the Whole (answers)

Activity/Instruction:

1. Introduce this activity by having the students call out all of the different parts that they can think of. (For example: roots, bark, etc.)
2. Distribute the “Parts of the Whole” handout to the students. Give them time to work both puzzles.
3. After completing the two puzzles (if there is time), have the students draw trees and label the parts. (Simply drawing an arrow to the place where they are found can designate certain inside parts. For example: an arrow pointing at the tree trunk can designate the phloem.)
4. Wrap-up this activity with a review of the many parts of the tree and how they all work together to help it survive.

Parts of the Whole

Word Search:

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

Find & Circle These Words:

ANNUAL GROWTH
RINGS
BARK
BERRIES
BLOSSOMS
BRANCHES
BUDS
CAMBIUM
CONES
FRUIT
HEARTWOOD
LEAFSCAR
LEAVES
NUTS
PETIOLE
PHLOEM
ROOTS
SAPWOOD
TRUNK
XYLEM

Word Scramble:

1 . S O R T O

These have three functions in a tree: support, storage, and nutrient pick-up. They are the foundation of the tree. They are usually found in the top 18 to 25 inches of soil – where most of the oxygen is located. Big ones store food. Small ones absorb nutrients and oxygen.

2 . U K R T N

This part of the tree supports the branches, leaves, and living layers of inner bark.

3 . M E O P L H

This light brown, paper-thin layer of inner bark carries food from the leaves to other parts of the tree. It can carry food to places where the tree is growing, or to the roots for storage. Eventually this turns into outer bark.

4 . S N T U I S R E R B E N O C E S U R I F T

These four items are the most common forms of reproduction by trees. They can be soft and feathery, hard and spiky, or sweet and squishy.

5 . M A C U B M I

This active layer of cells changes into phloem or xylem cells, depending on what the tree needs. It grows just inside the bark and adds a new ring to the tree every year. Distances between these rings are not always the same because growing conditions are different every year. In a good growing season, the tree grows a lot and has a wide ring. In a poor growing season, the tree does not grow as much, and has a narrower growth ring.

6 . L E X M Y (D A S O P W O)

This thin layer of inner bark carries water and nutrients from the roots to the leaves, so that the leaves can photosynthesize. The word in parentheses is another name for this layer.

7 . O R T W A D H O E

This is made of old cells that used to carry water and nutrients. These old cells are no longer living cells, but give structural support to the tree in the center of the trunk.

8 . A B K R

This protects the tree from weather, diseases, injuries, and insects. It also helps support the tree.

9 . S E E V A L

These make the food that allows the tree to live and grow. They contain a chemical called chlorophyll, which when combined with water, carbon dioxide, and sunlight, produces sugars and food for the tree. (This process, called photosynthesis, also gives off oxygen that people and animals need to live.)

1 0 . L O O S B S M S

These are usually very pretty in the Spring. They are the flowering parts of the tree, which get pollinated and insure the reproduction of the tree.

1 1 . F S A L R C E A

These are formed where the leaves have fallen off the branches and twigs. They also look very different on different species of trees. Some look like big furry balls, while others look like monkey faces!

1 2 . S B D U

These contain the next generation of leaves for the tree. Each one has a tiny, rolled-up ball of new leaves just ready to burst out when the weather warms up in the Spring. They are found on branches and twigs.

1 3 . E I L P O T E

This stem is where the leaf joins the branch. It is at the base of these that the items in #11 form.

1 4 . S G N I R H L A U N N A T W O R G (3 w o r d s)

These are circular and are hidden within the tree's trunk. If you could look at them, they would show you how old the tree is and what kind of growing seasons it has lived through. It could even show you if and when fires have burned through the area.

1 5 . S H N E B A R

These extensions of the trunk support leaves. They also are one location to look for the items in #12.

Parts of the Whole

SOLUTIONS

Word Search:



Word Scramble:

1. ROOTS
2. TRUNK
3. PHLOEM
4. NUTS, BERRIES, CONES, FRUIT
5. CAMBIUM
6. XYLEM (SAPWOOD)
7. HEARTWOOD
8. BARK
9. LEAVES
10. BLOSSOMS
11. LEAFSCAR
12. BUDS
13. PETIOLE
14. ANNUAL GROWTH RINGS
15. BRANCHES