

Name _____

Period _____

Due date _____

Benefits of Trees

Trees can add value to your home, help cool your home and neighborhood, break the cold winds to lower your heating costs, and provide food for wildlife.

The following are some statistics on just how important trees are in a community setting.

The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day. *U.S. Department of Agriculture*

If you plant a tree today on the west side of your home, in 5 years your energy bills should be 3% less. In 15 years the savings will be nearly 12%. *Dr. E. Greg McPherson, Center for Urban Forest Research*

A mature tree can often have an appraised value of between \$1,000 and \$10,000. *Council of Tree and Landscape Appraisers*

Having large trees in yards along streets increases a home's value from 3 percent to 15 percent. *Wolf, Kathleen L, PhD, University of Washington (2007) City Trees and Property Values. Arborist News. 16, 4:34-36*

In this laboratory activity you will answer questions on several short video clips on the benefits of trees, read about why trees are so important, and do a coloring activity.

PART 1: YOUTUBE - "How Trees Help Create the Fresh Water Supply" 4:19 (Help Plant Trees)

_____ 1. What percent of the world's fresh water supply is from forests?

- A. 25% B. 50% C. 75% D. 100%

2. TRUE or FALSE; Trees help to create clouds _____

_____ 3. Trees slow down rainfall helping to prevent

- A. Acid Rain B. Erosion C. Compactions D. Thatch



4. TRUE or FALSE: Underground water comes out as springs to feed rivers _____

5. TRUE or FALSE: Trees help to warm up the water _____

_____ 6. How much would it cost you to “Plant a Tree a Day?”

- A. \$3/day B. \$3/week C. \$3/month D. \$3/year

“How Tree Planting Can Help Reverse Climate Change” 5:33 (Help Plant Trees)

_____ 7. Which gas in the atmosphere holds in the sun’s heat rays like a blanket?

- A. Carbon dioxide B. Nitrogen C. Oxygen D. Sulfur dioxide

_____ 8. Trees can take carbon out of the air and store it in their

- A. Wood B. Bark C. Leaves D. Buds

9. FILL-IN-THE-BLANKS: “Four additional ways that trees help keep the planet cool”

- Trees create _____ that help cool the earth
- Forests keep the _____ cool
- Trees cool the atmosphere by _____ it
- Trees convert the sun’s _____ into life

_____ 10. What strategy does the video promote to effectively counter-act climate change?

- A. Buy solar panels B. Drive your car less C. Put up a windmill D. Plant trees

“How Trees Help Create Healthy Soil” 6:57 (Help Plant Trees)

11. TRUE or FALSE: There is more life underground than what we can see above ground _____

_____ 12. What do the trees feed to the microorganisms in the soil?

- A. Sugars B. Nitrogen C. Phosphorus D. Potassium

_____ 13. What are the dropped leaves & needles rich in?

- A. Sugars B. Nitrogen C. Phosphorus D. Potassium

14. TRUE or FALSE: When trees are cut, it doesn't degrade (harm) the soil _____

_____ 15. What gives the rich soil its brown/black color?

- A. Nitrogen B. Oxygen C. Carbon D. Selenium

16. TRUE or FALSE: Spongy soil helps to soak up the water _____

_____ 17. A benefit of tree roots on steep mountains and the edges of rivers is that they

- A. House chipmunks & squirrels B. Hold soil in place C. Provide shelter for beetles & grubs

18. FILL-IN-THE-BLANKS: Tree canopies are like a _____ over the soil, keeping it cool and protecting it from the _____.

_____ 19. What do you call trees that can thrive in dry and damaged soil?

- A. Pilgrim species B. Invasive species C. Conifer species D. Pioneer species

_____ 20. How long does it take to get from Moringa tree to a "food and resource rich forest garden?"

- A. 1 year B. 4 years C. 10 years D. 16 years

"How Trees Clean the Air" 5:14 (Help Plant Trees)

21. FILL-IN-THE-BLANKS: "Four things that trees do for our atmosphere"

- Trees create _____
- Trees _____ air pollution
- Trees remove humid _____
- Trees prevent _____ storms

_____ 22. Two states in the USA that struggle with dust storms are

- A. New York & Ohio B. Florida & Georgia C. California & Oregon D. Texas & Arizona

23. TRUE or FALSE: Trees have helped keep our air breathable and our atmosphere stable _____

_____ 24. Approximately how much of our original tree cover has been lost?

- A. 10% B. 25% C. 50% D. 75%

PART 2: READING - Read the following passage then answer the corresponding questions:

Trees are vital. As the biggest plants on the planet, they give us oxygen, store carbon, stabilize the soil and give life to the world's wildlife. They also provide us with the materials for shelter, furniture, and tools.

Trees benefit health

The canopies of trees act as a physical filter, trapping dust and absorbing pollutants from the air. Each individual tree removes up to 3.7 pounds every year. They also provide shade from solar radiation and reduce noise.

Many trees and shrubs are known to have medicinal properties. The oil from birch bark, for example, has antiseptic properties.

Research shows that within minutes of being surrounded by trees and green space, your blood pressure drops, your heart rate slows and your stress levels come down.

Trees benefit the environment

Trees absorb carbon dioxide as they grow and the carbon that they store in their wood helps slow the rate of global warming.

They reduce wind speeds and cool the air as they lose moisture and reflect heat upwards from their leaves. It's estimated that trees can reduce the temperature in a city by up to 40°F.

Trees also help prevent flooding and soil erosion, absorbing thousands of gallons of stormwater.

Trees boost wildlife

Trees host complex microhabitats. When young, they offer habitat and food to amazing communities of birds, insects, lichen and fungi. When ancient, their trunks also provide the hollow cover needed by species such as bats, chipmunks, tawny owls and woodpeckers. One mature oak can be home to as many as 500 different species.

Trees strengthen communities

Trees strengthen the distinctive character of a place and encourage local pride. Woodlands can be used as educational resources and to bring groups together for activities like hiking and bird-watching. Trees are also invaluable for children to play in and discover their sense of adventure.

Trees grow the economy

People are attracted to live, work and invest in green surroundings. Research shows that average house prices are 5-18% higher when properties are close to mature trees. Companies benefit from a healthier, happier workforce if there are parks and trees nearby.

1. Give any one product made from tree materials _____

_____ 2. About how many pounds of pollutants does a tree remove from the air each year?

- A. 1.7 B. 2.7 C. 3.7 D. 4.7

3. TRUE or FALSE: Being around trees lowers your blood pressure and stress _____

4. TRUE or FALSE: Trees increase global warming _____

5. TRUE or FALSE: Trees help prevent soil erosion _____

6. List any 3 animals that use trees for habitat:

7. It is estimated that one mature oak can be home to as many as how many different species?

- A. 100 B. 500 C. 1000 D. 10,000

8. What value might trees be to ADULTS?

9. What value might trees be to CHILDREN?

10. TRUE or FALSE: Property values increase that are close to mature trees _____



PART 3: COLORING - Color the **TREE** diagram and **FOREST LAYERS** according to the Key:

TREE

BRANCHES = Blue

CROWN = Orange

LATERAL ROOTS = Gray

SUCKER = Pink

TAPROOT = Purple

FOREST LAYERS

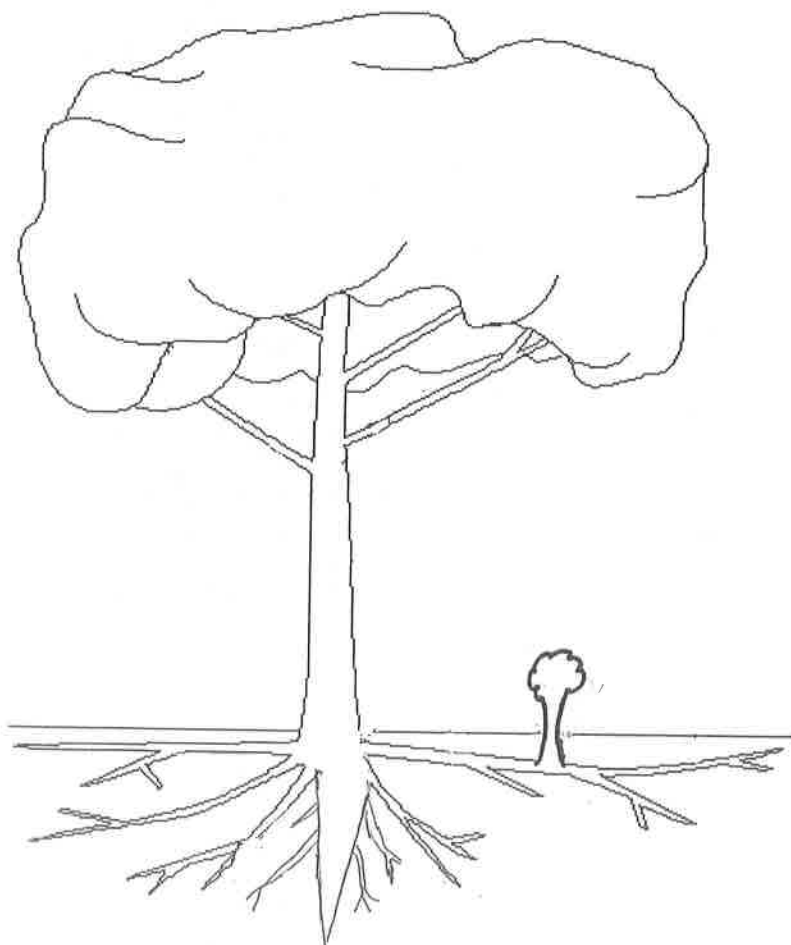
CANOPY = Green

FOREST FLOOR = Brown

SHRUB LAYER = Red

UNDERSTORY = Yellow

TREE



FOREST LAYERS

