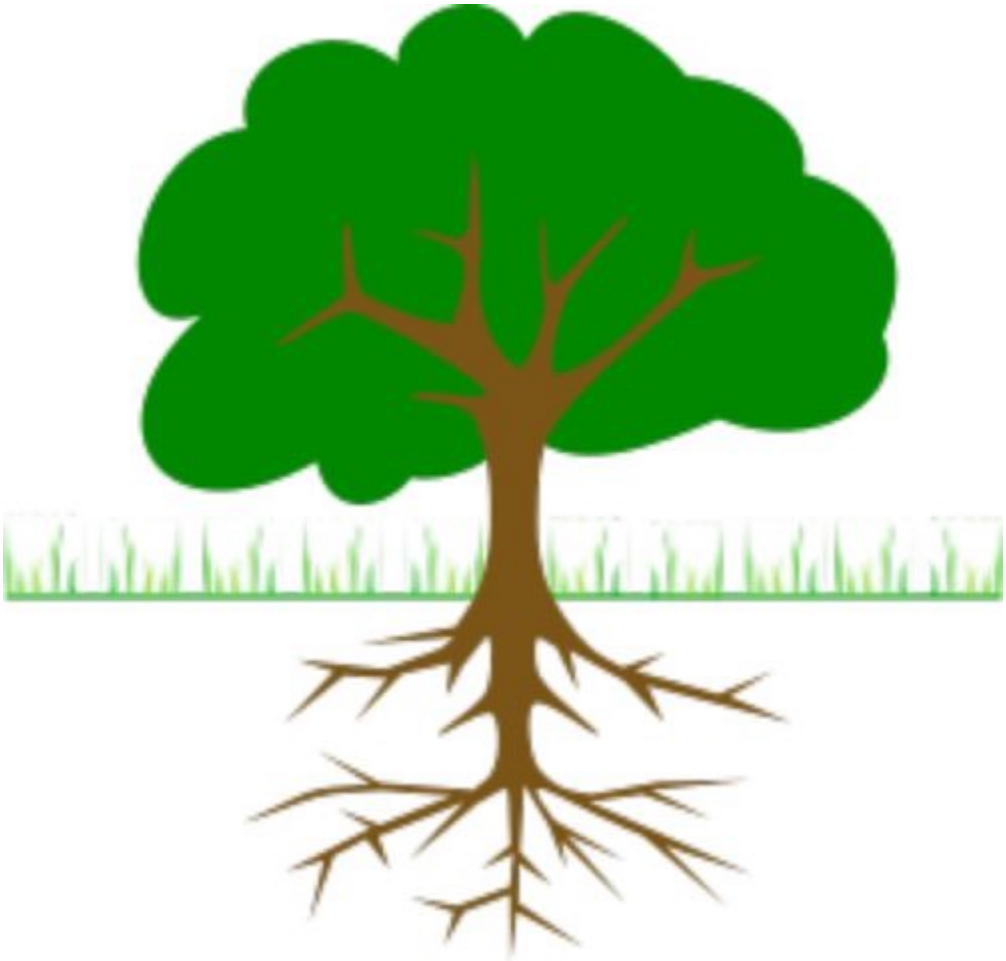
When Trees Get Thirsty

by Mimi Jorling



More than 60% of the human body is made of water. We have to drink every day to keep water in our bodies. Trees are similar. They are made of about 50% water, and, like us, they need to drink each day. But how do they do it?

Trees are plants and have roots, stems, branches, and leaves. The parts you can see are the stem (called a trunk), the branches, and the leaves. Trees also have roots below the ground that we can't see unless we dig up the soil. Even though we can't see them, the roots are very important.

Tree roots spread out all through the soil. They are busy doing two things down there. First of all, the roots hold onto the soil and keep the tree from falling over. Secondly, a tree's roots are like its mouth. They take in water, air, and nutrients from the soil to feed the entire tree, up to its very top. There are a few trees that can take water in through their leaves, but most trees cannot.

Scientists don't know exactly how trees pump water from below the ground up to their branches and leaves. They had a few different ideas, or hypotheses. These hypotheses were tested, and there was a lot of evidence that supported one of the hypotheses.

A tree trunk is made of tiny tubes, kind of like drinking straws. Water can actually move upward in these tubes if it is pulled. Scientists think that the sun pulls it up. When the sun shines on leaves, the leaves dry out. This process is called transpiration. It is water moving from the leaf to the air. The water moving out of the leaf needs to be replaced by more water, which comes from down farther in the trunk of the tree. This way, water is constantly going out of the leaves and coming in through the roots and up the trunk.

The next time you see a tree, think about the water that is inside of it and moving up toward its leaves. It's amazing!

Name: _____ **Date:** _____

1. What is about 50% of a tree made of?

A. air

B. water

C. soil

D. leaves

2. What does the author explain in the third paragraph?

A. why people have to drink every day

B. why a tree has leaves

C. what tree roots do

D. an hypothesis scientists have about trees

3. Read these sentences from the text.

"More than 60% of the human body is made of water. We have to drink every day to keep water in our bodies. Trees are similar. They are made of about 50% water, and, like us, they need to drink each day."

Based on this evidence, why might trees need to drink each day?

A. to keep water inside themselves

B. to become more similar to humans

C. to spread their roots through the soil

D. to get rid of their leaves

4. In what order does water probably move through the parts of a tree?

A. Water enters through the roots, then moves to the branches, then the trunk, and finally the leaves.

B. Water enters through the roots, then moves to the branches, then the leaves, and finally the trunk.

C. Water enters through the leaves, then moves to the roots, then the branches, and finally the trunk.

D. Water enters through the roots, then moves to the trunk, then the branches, and finally the leaves.

5. What is the main idea of this text?

A. About 50% of a tree is made of water, while more than 60% of the human body is made of water.

B. A tree's roots hold onto the soil and keep the tree from falling over.

C. Trees are plants that take in water through their roots and pump it up to their branches and leaves.

D. Scientists have different hypotheses about how trees pump water from below the ground and up to their branches and leaves.

6. Read these sentences from the text:

"More than 60% of the human body is made of water. We have to drink every day to keep water in our bodies. Trees are similar. They are made of about 50% water, and, like us, they need to drink each day. But how do they do it?"

Why might the author have asked the question, "But how do they do it?"

A. to prepare readers for an answer to the question later on

B. to express surprise that trees are made of about 50% water

C. to call attention to how similar trees and humans are

D. to contrast the amount of water in a tree with the amount of water in the human body

7. Choose the answer that best completes the sentence.

We can't see a tree's roots below the ground. _____, they are very important.

A. Therefore

B. Soon

C. Certainly

D. However

8. Some trees take in water through their leaves. What do all trees use to take in water?

9. There was a lot of evidence that supported one of the hypotheses about how a tree drinks. Summarize this hypothesis.

10. Explain whether a tree can live without its roots. Use evidence from the text to support your answer.