

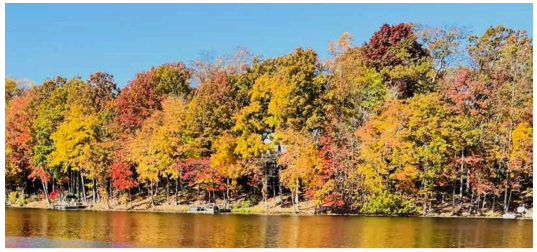
Trees

Amazing Earth - 1st

Quick-Start Notes for Parent Presenters:

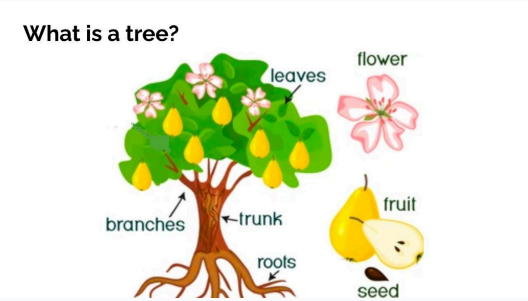
• **Visual Action Cues:** Highlighted in **[BOLD AMBER BRACKETS]** so you know exactly when to click to advance slides or play videos.

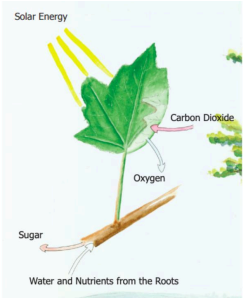
• **Student Participation:** Questions to ask the class are highlighted in **[BLUE CALLOUT BOXES]** along with answer keys and guidance.

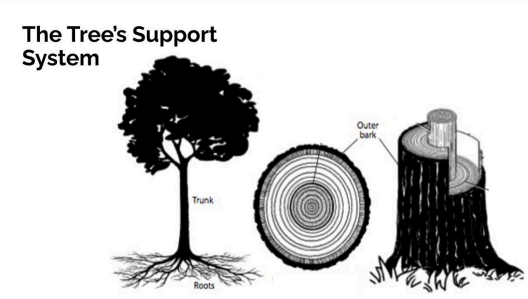
VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 01: Intro *(On-Screen: Autumn foliage reflected in lake photo)*  	Hi First Grade! Welcome to Amazing Earth. This year in science, you will be learning about what plants and animals need to survive, the relationship between the sun and the earth, how the weather changes with the seasons, and how we can use Earth's natural resources responsibly. Today, we get to bring all of those big ideas together to explore one of nature's super-giants: trees! **[CLICK: Advance to Slide 02]**

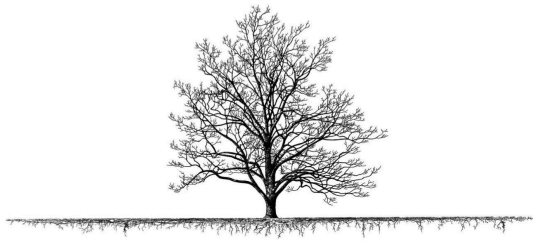
VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 02: Let's Think Like Dendrologists! *(On-Screen: Photo of Dr. John Seiler climbing a tree)* Let's think like *dendrologists*! 	As we talk about trees, we are going to think like scientists! We are going to: • Ask questions, • observe, • classify, and • conduct investigations. Today we are a specific type of scientist called a **dendrologist**! A dendrologist is a scientist who studies trees. This is **Dr. John Seiler** from Virginia Tech. **[STUDENT PARTICIPATION]** **"Who would like to climb and study trees for their job as adults?"** *Tip: Pause for hands raise* **[CLICK: Advance to Slide 03]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 03: Why We Need Trees *(On-Screen: Hikers on forest trail and black bear hibernating in tree hollow)*  	Dendrologists study trees because they are incredibly important to life on Earth. Trees can: • provide wildlife habitat • produce oxygen that we need to breathe • clean the water and the air, and • grow food to eat We also use trees every day! Rubber is made from tree sap and aspirin made from tree bark. In Virginia, trees contribute over $21 billion to our economy and support more than 100,000 jobs. **[CLICK: Advance to Slide 04]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 04: What is a tree? *(On-Screen: Pear tree diagram showing flower, fruit, seed, leaves, trunk, branches, roots)*  **[PAUSE FOR VIDEO: 60 SEC]**	Trees have specific parts that make it a tree. Trees have: • a single, thick woody stem called the trunk that is covered in bark • branches that extend out from the trunk of the tree • leaves • roots • seeds in cones or flowers with seeds in fruit The parts of the tree work together so the tree can grow, survive, and reproduce. Let's look at a few! **[CLICK: Advance to Slide 05]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 05: The Tree's Food Factory *(On-Screen: Photosynthesis diagram showing solar energy, carbon dioxide, oxygen, sugar, and roots)* **The Tree's Food Factory** ▪ Photosynthesis ▪ Sugar & Oxygen  	Welcome to the tree's food factory - the leaves! In order to grow, trees need food. And not just any food. They need sugar. But they can't get sugar by eating candy. Instead, they make their own sugar! Trees make their own food by **photosynthesis**: • The sun's energy powers this process. • Water and carbon dioxide are combined to make sugar and oxygen. • The tree releases the oxygen into the air. • The tree uses the sugar to produce all of its parts and grow larger. **[CLICK: Advance to Slide 06]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 06: The Tree's Support System *(On-Screen: Tree structure diagrams showing trunk cross-section, outer bark, and roots)* 	In order to survive, the tree needs support and protection. This is the tree's support system: • The trunk supports the weight of the tree's branches and transports food and water. • The trunk is covered in bark that protects trees from injuries, weather, and critters that can hurt the tree. • The roots anchor the tree to the ground, and take in water and nutrients from the soil. **[CLICK: Advance to Slide 07]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 07: Fun Facts About Roots *(On-Screen: Illustration of an open-grown tree showing wide underground root network)* 	Three fun facts about roots: 1. This is what an open grown tree really looks like. Observe that its root network is wide, but not very deep. 2. Roots absorb water very fast. A big tree's roots can suck in more than 100 gallons of water from the soil every day! 3. Nutrients and water can transfer from one tree to another tree through their roots. **[CLICK: Advance to Slide 08]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 08: Are All Trees Tall? *(On-Screen: Title slide 'Are all trees tall?')*  	Now let’s see what you know about trees! **[STUDENT PARTICIPATION]** **"Raise your hand if you think all trees are tall."** *Tip: Pause for hands raise.* Trees are tall plants. But trees come in very different sizes. And tall often depends on what you are comparing it to. **[CLICK: Advance to Slide 09]**

SLIDE 09: Flowering Dogwood

(On-Screen: Photo of Flowering Dogwood tree in bloom))



Our state tree, the Flowering Dogwood, grows to about 20 feet tall.

[STUDENT PARTICIPATION #1]

"If you think this is tall, raise your hands."

Tip: Pause for hands to raise.

What if we compared a Dogwood to a 1st grader. Is a Dogwood tall?

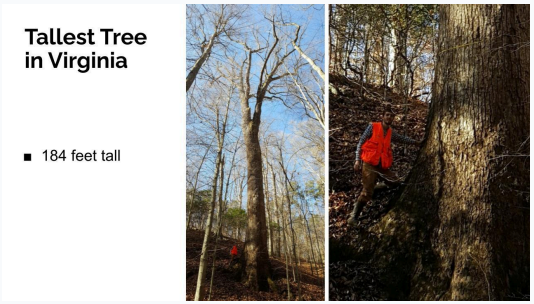
[STUDENT PARTICIPATION #2]

"Raise your hands if you think a Dogwood is tall compared to a 1st grader."

Tip: Pause for hands to raise.

Let's see how the Dogwood compares to other trees!

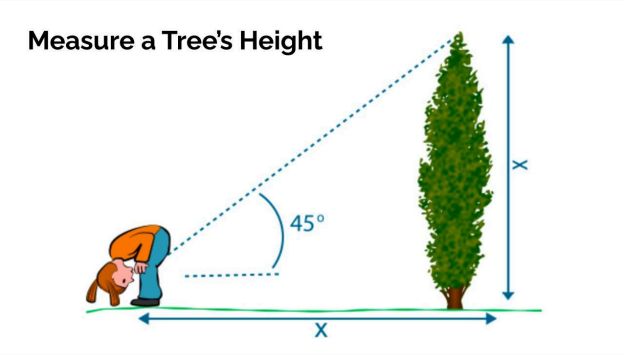
[CLICK: Advance to Slide 10]

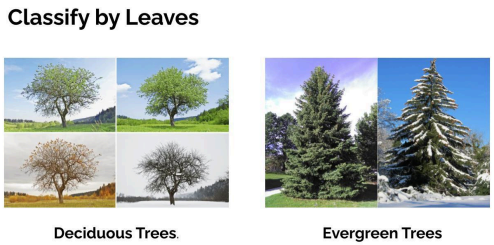
VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 10: Tallest Tree in Virginia *(On-Screen: Photo of 184 ft Tulip Poplar in Caroline County)* 	The tallest measured tree in Virginia is a 184 foot tall Tulip Poplar in Caroline County. But our trees in Virginia can't compare to the tallest in the world! **[STUDENT PARTICIPATION]** **"Does anyone know the tallest tree in the world"** *Tip: Let 1 or 2 students answer. Do not give away the answer and instead say "Maybe" or "Interesting idea".* Let's see! **[CLICK: Advance to Slide 11]**

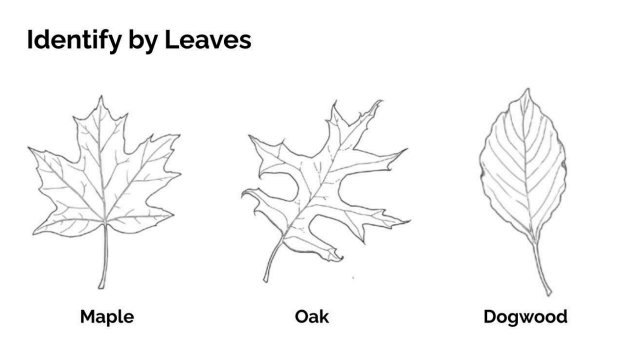
VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 11: Hyperion *(On-Screen: Height comparison graphic and Coast Redwoods forest view)* 	The tallest tree in the world is named “Hyperion.” It is 380.8 feet tall. It is a Coast Redwood in California. *[PRESENTER BACKGROUND NOTE: Just in case you are asked. This is a photo of Coast Redwoods, but not of the specific tree, Hyperion, because the National Park Service has not issued an official photo in order to protect the tree from the environmental damage caused by overcrowding and illegal tourism. The exact location of the tree was kept secret and it is illegal to visit.]* **[CLICK: Advance to Slide 12]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 12: Let's experiment! *(On-Screen: Title 'Let's experiment!')* 	We learned a lot about trees, now let's experiment to learn more! We are going to investigate how roots transfer nutrients. We are going to see if we can measure the height of a tree. And we are going to identify the trees living right here in the Sunrise Valley Schoolyard ecosystem! Let's get to work! **[CLICK: Advance to Slide 13]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 13: Root Nutrient Transfer Demonstration *(On-Screen: Photo of 3 glasses with blue and yellow dye paper towel bridge)* 	Let's start with the roots. We learned that roots soak up water and nutrients that the tree uses to grow and that can be transferred from one tree to another. Let's see if we can demonstrate how it works. These two paper towels are like our roots. Similar to roots: • The paper towel is made from fibers. • The water is able to travel through the gaps in the fibers. If we put one paper towel in a cup with blue food dye and the other in a cup with yellow food dye and then we twist and connect the two together in a third empty cup, what will happen? **[STUDENT PARTICIPATION]** **"Does anyone have a hypothesis or prediction? We make a hypothesis by saying "I think this will happen…because…""** *Tip: Let 1 or 2 students answer.* We are going to let this sit here for a bit and check back at the end of the day! **[CLICK: Advance to Slide 14]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 14: Measure a Tree's Height *(On-Screen: Diagram of measuring a tree's height upside down at a 45° angle)* 	For our second experiment, we are going to go outside to measure a tree - UPSIDE DOWN! Using math, we can measure the height of the tree without touching the top of it! We will cover how this math works in a later grade… But today we will spend some time upside down! Notice how we will be able to measure the distance from your feet to the tree to know the height! **[CLICK: Advance to Slide 15]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 15: Classify by Leaves *(On-Screen: Photos of deciduous vs. evergreen trees)* 	After we measure a tree, we are going to see if we can identify the trees at school! There are more than 400 identified native trees and shrubs in Virginia! Trees have a lot in common, but they also have a lot of differences that we can observe! We can classify trees by what they do with their leaves. **Deciduous** trees have broad and flat leaves. They shed all of their leaves in the fall to protect the tree in the winter. These leaves change colors by seasons. **Evergreen** trees have leaves that are needle or scale like. They shed their leaves throughout the year, a few at a time, while also growing new ones. These leaves can handle cold temperatures and the leaves stay green. **[CLICK: Advance to Slide 16]**

VISUALS	SPOKEN SCRIPT + CLASS INTERACTION + ACTION
SLIDE 16: Identify by Leaves *(On-Screen: Leaf outlines for Maple, Oak, and Dogwood)* 	We can also identify trees by the unique leaf design - each species of tree has its own! When we look at their shape, size, and features on the leaves, we can determine which kind of tree it came from. In a moment, you will each be given three examples of leaves from common trees in Fairfax County. When you get them, go ahead and touch them and observe their physical characteristics. You can ask yourself, “What do the leaves have in common?” and “What is different about the leaves?” You will also be given a worksheet to do a leaf rubbing of each leaf. We will bring this with us when we go outside to help us identify three trees growing at Sunrise Valley! There are three steps to do a leaf rubbing: 1. Place your leaf under your paper. 2. Hold your crayon on its side, and rub on the paper, over the leaf. 3. Make sure to rub over the entire leaf. *[PRESENTER NOTE: Have the students go back to their seats and leave this slide up as they do the activity.]*