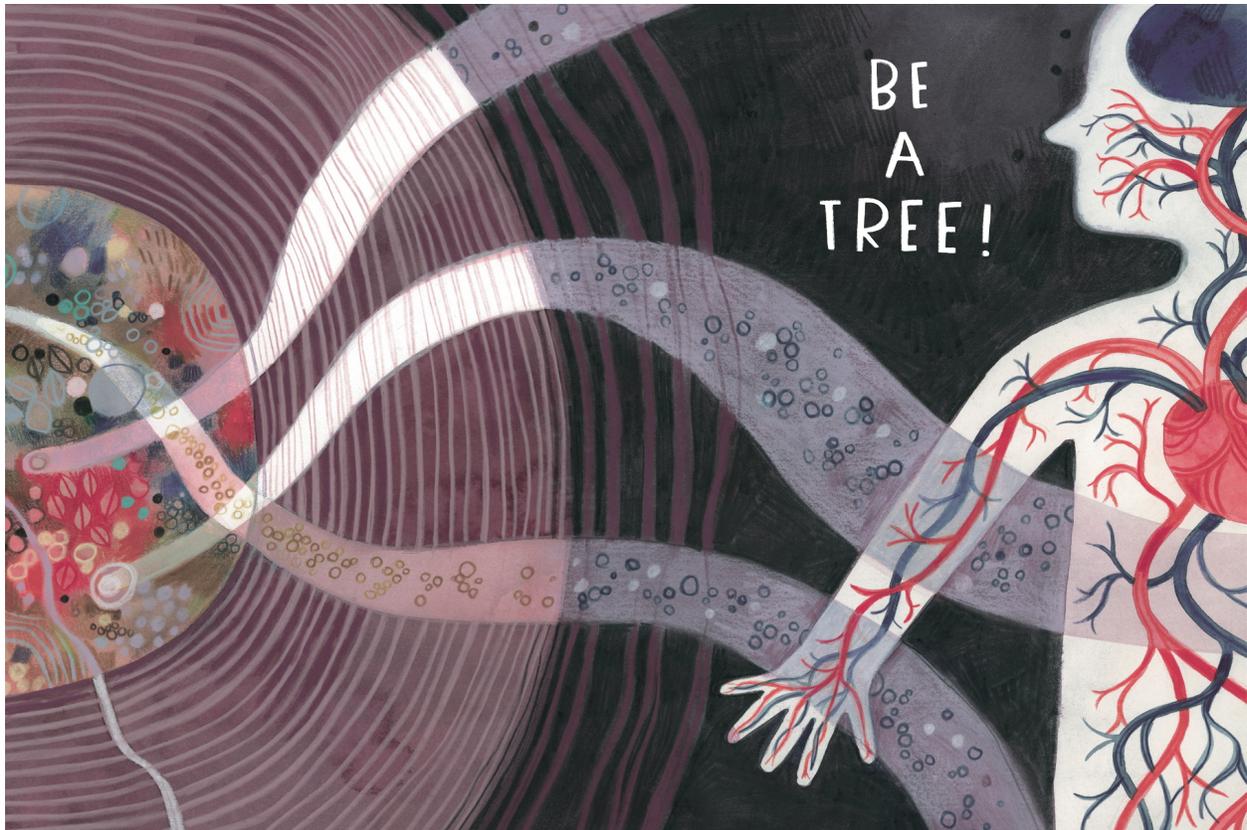


BE A TREE! : STEM Connections & Lesson Plans



ROOT YOUR READ ALOUD: Talking Points

The picture book **Be a Tree!** makes comparisons between trees and the human body and human behavior. Award-winning STEM educator and school librarian Suzanne Costner provides us with talking points on human anatomy with ideas for educators to make STEM curriculum connections. Each section leads with a **quote** from the book followed by *talking points* and **resources**.

"Stretch your branches to the sun." —BE A TREE!

The upper divisions of a tree's trunk and a human's arms and legs are referred to as limbs.

A tree's limbs stretch toward the sun searching for light to power the tree's growth. What do humans use their limbs to reach for?

A tree's limbs might hold leaves or bird nests or other objects. What do humans hold with their limbs?

Resource: [What Kind of Tree Are You?](#) (Source: Enchanted Walkabouts)

This blog post opens with a discussion comparing the human body to a tree. The language might help you make further connections between human anatomy and trees.

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"Let your roots curl, coil in the soil to ground you." —BE A TREE!

Tree roots reach into the soil and collect water and nutrients, as well as anchoring the tree in place and helping the tree to balance. Legs and feet help humans to balance. What else affects that balance?

Resource: [Balance Practice for Kids](#) (The Inspired Treehouse)

This blog post explains the importance of balance, how balance works in the human body, and offers three short video clips of activities to explore balance.

"Your spine is a trunk, giving you shape, holding your crown, channeling your food." —BE A TREE!

The central portion of a tree and the center of the human body are called the trunk. In what ways do they work in the same way? How are they different?

Resource: [Me as a Tree](#) (Source: University of Wisconsin)

In this lesson, students learn how trees and humans are similar. Students use comparisons between humans and trees to understand a tree's functions, life stages, role in the forest community, and that they compete for basic needs.

"Your skin is bark: dead on the outside, protecting what's within."
—BE A TREE!

Run one hand over the skin on the other hand. Does it feel like bark? What other connections between skin and bark could the author be making?

Resources: [Tree Bark](#) (Source: Tree for Life) and [Your Skin](#) (Source: KidsHealth)

Use these two websites or books in the library to compare the functions of bark and skin.

"Beneath your bark are layers..." —BE A TREE!

What are the layers beneath the bark of a tree? Which layers carry nutrients? Which provide support?

What are the layers beneath human skin? Which layers carry nutrients? Which provide support?

Resources: [Trees](#) (Source: Kidzone) and [Your Skin](#) (Source: KidsHealth)

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"In your heart's center is your pith..." —BE A TREE!

Place your hand over your heart. If you were a tree, this would be your pith. If your heart is designed to send blood throughout your body, what role does the pith play in a tree's initial growth and development?

Resource: [Plant Plumbing Is More Human than Once Thought](#) (Source: University of Utah)
This background article covers the concept "that plants and animals have reached the same solution for moving fluid most efficiently despite their radically different vascular systems."

Resource: [Human Heart and Circulatory System](#) (Source: KidsHealth)

"And now, look around you— you are not alone." —BE A TREE!

Just like humans, trees often exist in communities. Like us, trees both communicate with their neighbors and help their neighbors. What way could one tree help another?

Resource: [Do Trees Talk to Each Other?](#) (Source: *Smithsonian Magazine*)
This article is about the work of Peter Wohlleben, author of **The Hidden Life of Trees**. Note there is a young reader's edition of his book that classes could use as a companion text.

Resource: [The Wood Wide Web](#) (Source: BBC)
This video demonstrates how trees "secretly talk to each other."

Other Helpful Resources

[How the Body Works](#) (Source: KidsHealth)
This resource includes quizzes, articles, videos, and activities.

[The Body and Medicines](#) (Source: The Children's University of Manchester)
This site requires Adobe Flash Player.

[Human Body](#) (Source: DK findout!)
This resource includes facts, photographs, diagrams, and videos.

[Human Body](#) (Source: Scholastic StudyJams!)
This resource includes videos, slideshows, and quizzes.

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TREE STEM(S): Recommended Lesson Plans

With its deeply engaging language and art, **Be a Tree!** invites us to dig into STEM curriculum. Award-winning STEM educator and school librarian Suzanne Costner shares her favorite pre-existing tree lesson plans and resources.

Elementary School

[Family Activity: Tree Lifecycle](#) (Grades K-2)

In this activity, children will discover that trees have a lifecycle that is similar to that of other living things. (Source: Project Learning Tree)

[Thank You, Trees!](#) (Grades K-2)

One way to start a discussion with your students about the importance of trees is to center the conversation on the importance of trees in their own lives. Use these [conversation starters](#) to help guide students through the Backyard Mission. (Source: PBS Kids)

[To Be a Tree](#) (Grades 2-3)

Students review the three main parts of a tree that are used in identification, and then play a game and act out how a tree meets its basic needs. (Source: University of Wisconsin)

[Learning About Biology](#) (Grades 3-5)

In this activity, children will discover that plants “breathe,” i.e. release oxygen as a byproduct of photosynthesis. (Source: Discover the Forest)

[Let’s Start Growing](#) (Grades 3-5)

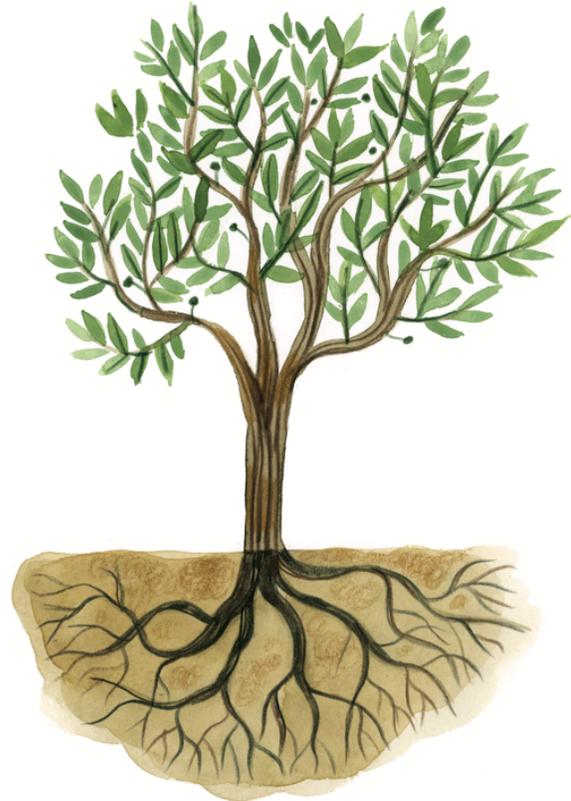
In this lesson, students will understand the growing requirements of a tree. The activity invites students to grow a tree from seed. (Source: Penn State College of Agricultural Sciences)

[Tree Detectives](#) (Grades 3-5)

Participants practice observation skills and apply them to identifying trees in their neighborhood. (Source: National Wildlife Federation)

[Tree Growth](#) (Grades 3-5)

In this lesson, students identify tree layers. The students will understand that a tree expands in height and diameter. The students will list conditions that affect tree growth. The students will apply their knowledge of tree growth to their own lives. (Source: Penn State College of Agricultural Sciences)



BE A TREE! : STEM Connections & Lesson Plans

[Me as a Tree](#) (Grades 5-6)

In this lesson, students learn how trees and humans are similar. Students use comparisons between humans and trees to understand a tree's functions, life stages, role in the forest community, and competition for basic needs. (Source: University of Wisconsin)

Middle School

[Made in the Shade](#) (Grades 5+)

This is a great activity to educate your students about the cooling effect of shade. The lesson plan measures the temperature difference between shaded and non-shaded areas.

(Source: Education.com)

[Tree Cookies](#) (Grades 5-8)

In this lesson, students will trace environmental and historical changes using a cross section of a tree, or "tree cookie." (Source: Project Learning Tree)

[Urban Trees](#) (Grades 6-8)

In this lesson, students will learn about how trees are an essential part of our lives with a focus on the role they play in urban areas, including energy considerations.

(Source: The Nature Conservancy)

High School

[Exploring Tree Rings](#) (Grades 9-12)

In this lesson, students discover they can learn about the history of a tree by examining its rings. (Source: KidsGrading.org)

[Focus on Forests](#) (Grades 9-12)

This collection of student activities provides an opportunity for hands-on study of forest resources while addressing concepts in biology, civics, ecology, economics, forest management, and other subject areas. (Source: Project Learning Tree)

Other Helpful Resources

[Carly's Kids Corner](#) (Source: Arbor Day Foundation)

This resource includes digital games and resources and printable activity sheets.

[Tree Toolkit: Lessons and Educator Resources for Teaching About Trees](#)

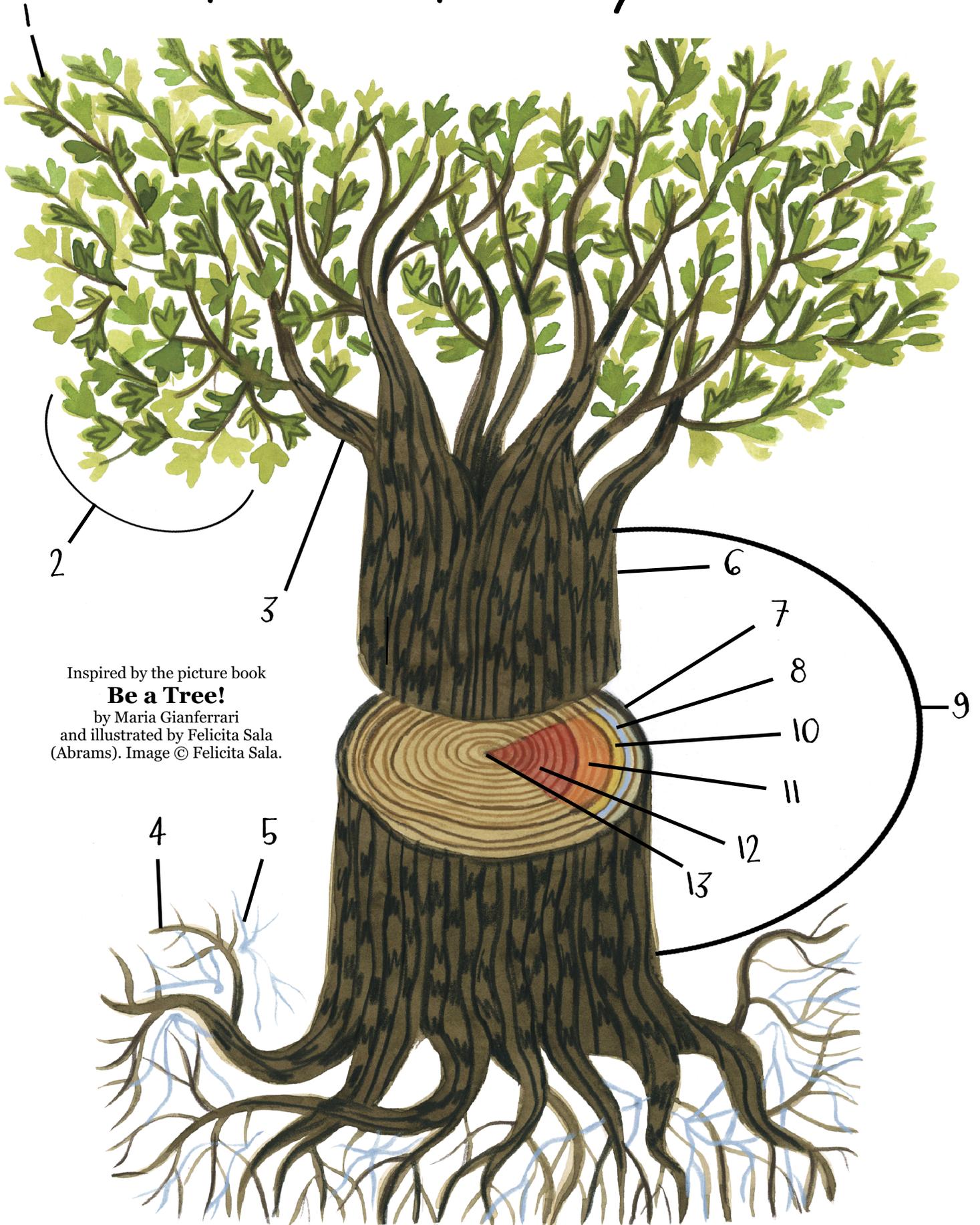
(Source: The National Environmental Education Foundation)

These extensive resources demonstrate how trees are vital to the health of not only all forest ecosystems, but the health of the entire planet.

[Project Learning Tree](#)

This resource offers curriculum you can purchase, but also offers some strong free activities.

BE A TREE!: Anatomy of a Tree



Inspired by the picture book
Be a Tree!
by Maria Gianferrari
and illustrated by Felicita Sala
(Abrams). Image © Felicita Sala.

BE A TREE!: Anatomy of a Tree

Can you name the parts of a tree marked by numbers on the previous page? Check your STEM memory in the back of the picture book **Be a Tree!**.

Flip the paper over and write about the part of the tree you find the most interesting!

1		8	
2		9	
3		10	
4		11	
5		12	
6		13	
7		We're rooting for you!	