

LCCC Arboretum Connected Curriculum **SCHOOL AGE**

Jaime Jo Engle

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01

Research

Planning research and resources





Additional Field Trips

The following includes a collection of field trips and supplemental locations for students to visit to enhance and further their learning about native Pennsylvania trees, wildlife and nature.

Lehigh Carbon Community College Arboretum

LCCC Arboretum - Lehigh Carbon Community College is in the beginning stages of constructing an arboretum on campus. In December of 2021, phase one of the project was completed when 24 different species of trees were planted. The arboretum features twenty species of climate-change resistant trees, including native species of oak, maple, redbud, sycamore, cherry, aspen, pine, and gum trees.

Address

4525 Education Park Drive
Schnecksville, PA 18078

Phone Number

(610) 799-2121

Trexler Nature Preserve

Trexler Nature Preserve – Trexler Nature Preserve is an 1,108-acre public park that focuses on land conservation in Lehigh County. The Preserve manages and protects natural resources in addition to offering educational and recreational opportunities. It consists of more than 18 miles for various recreational activities including hiking, walking, and jogging. There are many unique landscapes to explore including hemlock forests and deep ravines. The Preserve is a local attraction and is the perfect place to explore trees native to Pennsylvania.

Address

5150 Game Preserve Road
Schnecksville, PA 18078

Phone Number

(610) 782-3000

Topic Experts

The following experts are valuable resources to support student learning of interest areas related to the Lehigh Carbon Community College Arboretum



Pat McKinney (aka Porcupine Pat)



Porcupine Pat - Environmental Education Coordinator for the Schuylkill Conservation District. He is a local expert in nature and wildlife. Authentic artifacts that he would be able to provide would be seeds, saplings, pictures of trees native to our area, pinecones, acorns, and leaves and bark samples of our local trees.

Phone Number

(570) 622-3742 ext. 3326

Email

porcupinepat@yahoo.com

Joshua Tree Experts

Joshua Tree Experts - Local tree service and lawn care company with expertise in caring for trees in our area. The company employs ISA certified arborists that would be able to share their knowledge of trees and how to take care of them with young students. Authentic materials that could be shown would be different tools that are used in the pruning and removal of trees.

Phone Number

(610) 365-2200

Email

info@joshuatreeexperts.com

WEBSITES

The following slides are a compilation of valuable web resources for students and teachers when planning for school age exploration on Pennsylvania tree and nature content.



List of Websites for Students

- [How Much Oxygen Does A Tree Produce?](#)
- [15 Astounding Facts About Trees](#)
- [14 Fun Facts About Trees](#)
- [7 Ways Kids Can Help Save Trees](#)

List of Websites for Teachers

- [Tree Education Hub](#)
- [Tree Ring Lesson for Kids](#)
- [Life Cycle of a Tree](#)
- [STEM - Tree Lifecycle](#)

WHOA!

This can be the part of the presentation where you introduce yourself, write your email...

BOOK LISTS

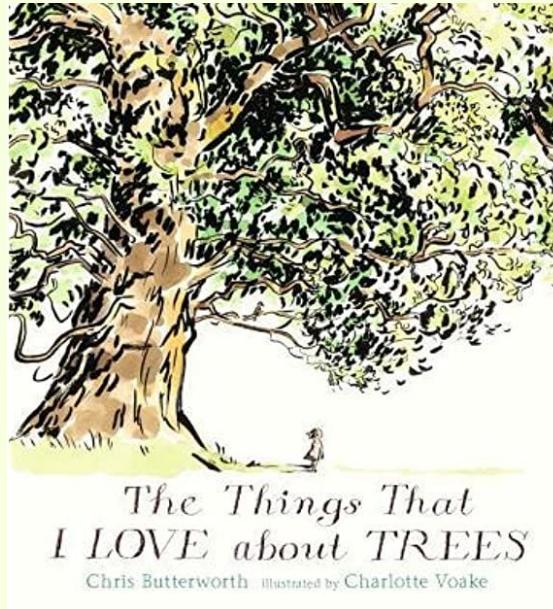
To support the inclusion of literacy and books in the classroom, the following slides will provide a variety of fiction and non-fiction books related to the Arboretum, Pennsylvania nature and wildlife

Non-Fiction Book List

The Things That I Love About Trees

By: Chris Butterworth

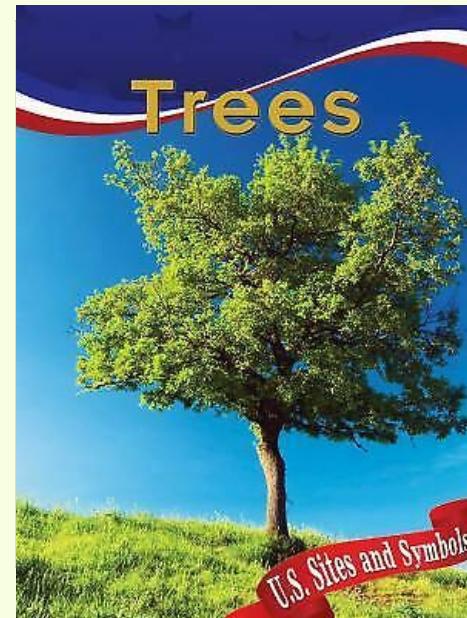
Allow this book to journey you through the experience of the transformation of trees throughout the seasons. It will remind you of the beauty of trees and all their is to love about them!



Trees

By: Galadriel Watson

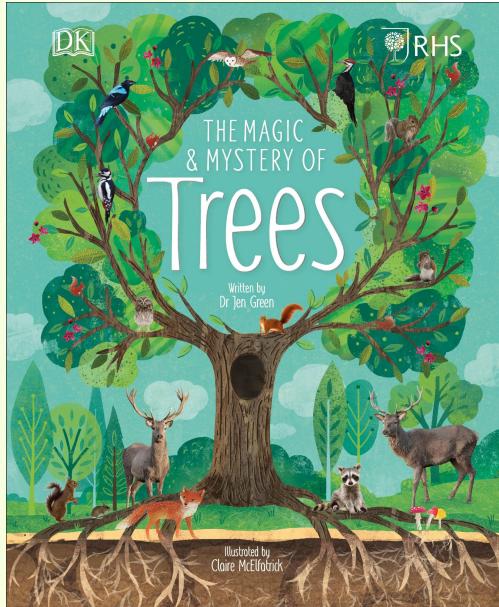
Explore trees from around our country and
learn fun facts along the way!



The Magic and Mystery of Trees

By: Jen Green

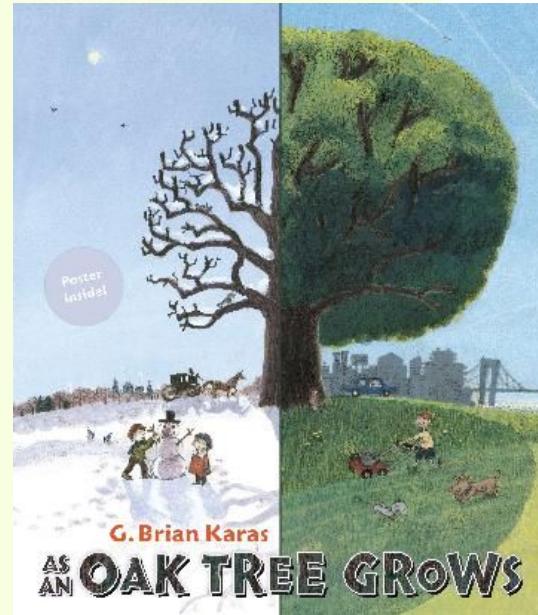
This breathtaking book about trees takes children on a captivating journey, showing them just how special these mighty organisms are. Discover how they communicate and warn each other of predators, how they nurture their networks, record the past, and anticipate the future to ensure their survival. There's so much more to trees than meets the eye. Learn about the amazing natural science of trees in this nature and science children's book. When you get to know these silent giants, you'll never look at trees the same way again. Through this book, you will discover that a tree is so much more than it seems.



As An Oak Tree Grows

By: G. Brian Karas

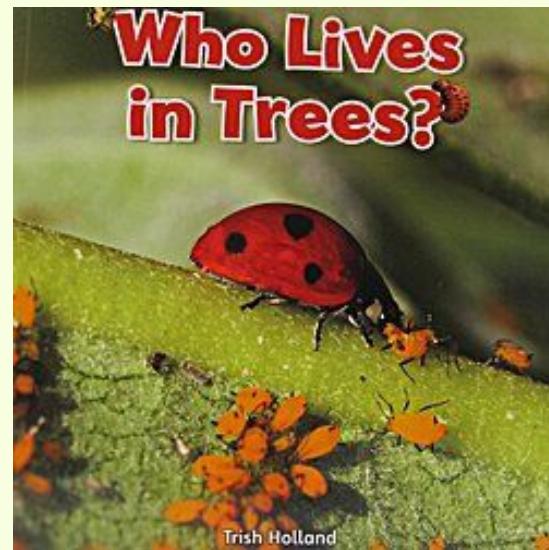
This book is a clever timeline of the history of America from the times of indigenous people inhabitation through today. Illustrations subtly portray the arrival of Europeans and the Industrial Revolution. This book is a marvelous tool for teaching both lower elementary concepts such as seasons and linear timelines through to upper elementary concepts such as the environmental changes incurred by America's history.



Who Lives in Trees?

By: Trish Holland

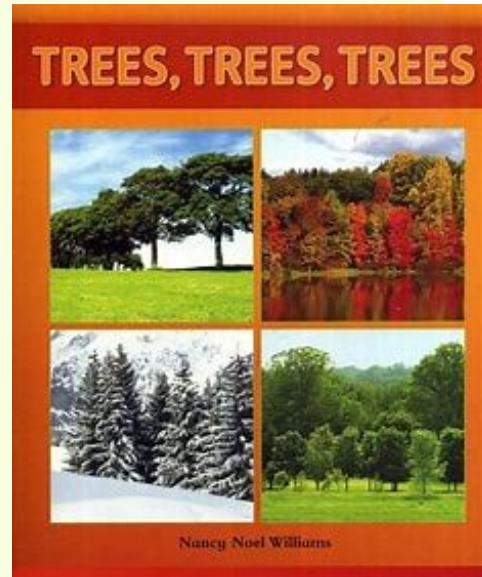
Using bright, colorful photographs and clever rhymes, this book discusses different animals that live in trees, how they live, and what they eat.



Trees, Trees, Trees

By: Nancy Noel Williams

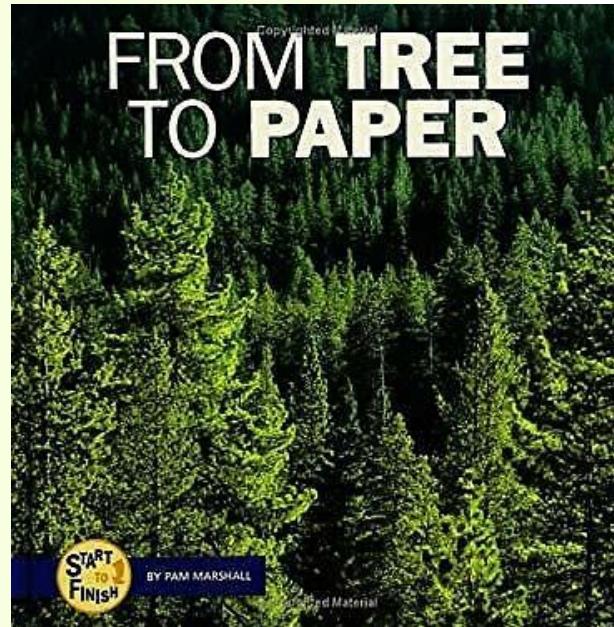
From the life cycle of a tree, to the parts of a tree, and different kinds of trees, this book has it all. It introduces “evergreen” and “deciduous” to young readers. It discusses how trees are useful to people, animals, and the Earth. It also teaches facts about trees, such as the name of world’s largest and oldest trees and how we can learn the age of a tree.



From Tree to Paper

By: Pam Marshall

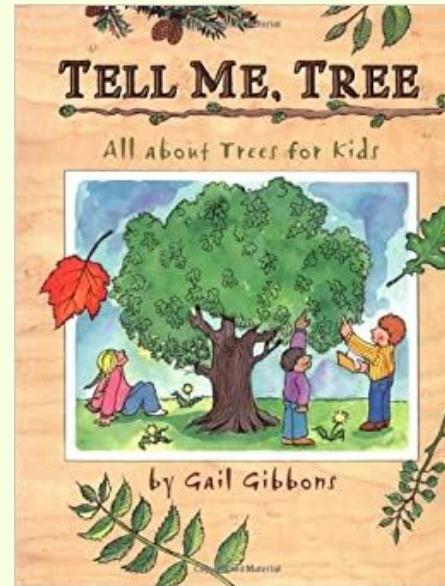
How does a tree turn into a comic book or a magazine? Follow each step in the production cycle—from planting a tree to reading or writing on paper—in this fascinating book!



Tell Me, Tree - All About Trees for Kids

By: Gail Gibbons

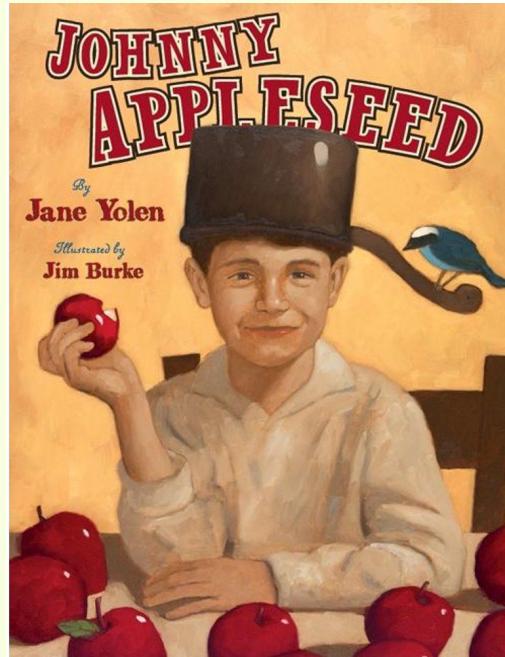
is a child's guide to the wide variety of trees that surround us, including how to identify them the structure of trees, with cutaway illustrations and labels. The book also includes an explanation of photosynthesis and a special section on how to make a tree identification book of your own. This book is a perfect read for Earth Day and Arbor Day, and for nature-lovers year-round.



Johnny Appleseed: The Legend and the Truth

By: Jane Yolen

Everyone knows the legend of Johnny Appleseed, the man from Massachusetts who planted apple trees all the way to California. But the true story of Johnny Appleseed, or John Chapman, is even greater than the legend. This book tells the whole story of an individual who forever changed the landscape of America with historical detail of this man's life while capturing all the magic and mystery of his legend.

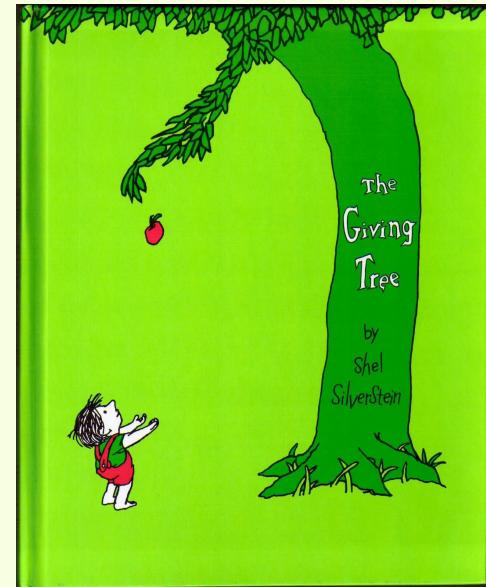


Fiction Book List

The Giving Tree

By: Shel Silverstein

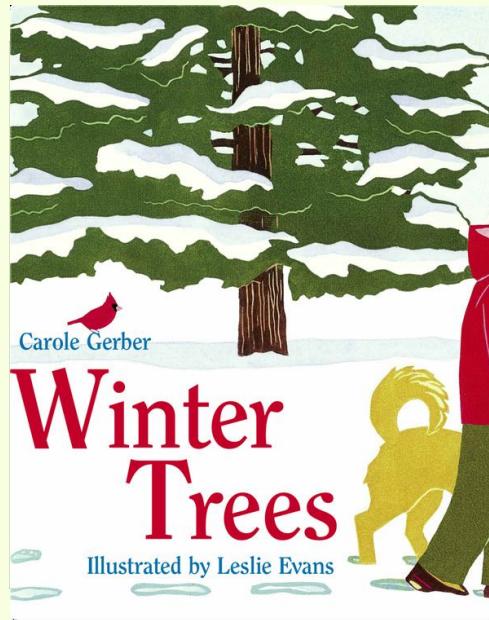
The Giving Tree is a wonderful story that teaches selflessness and what it means to love unconditionally. This story also teaches about the resources that trees have to offer us.



Winter Trees

By: Carole Gerber

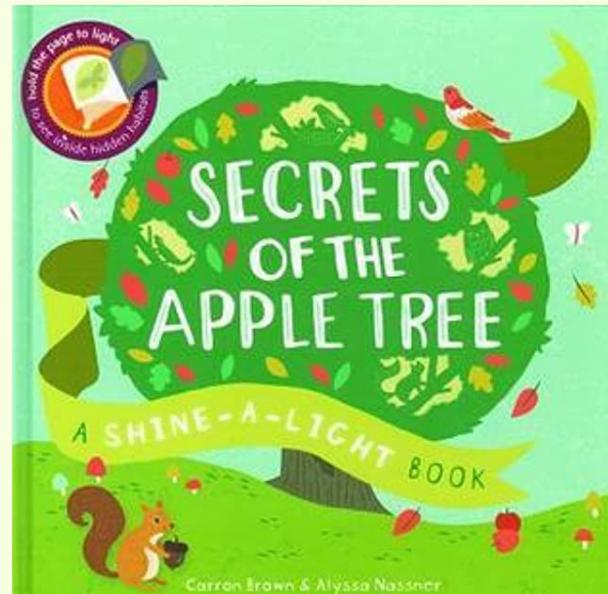
Join a boy and his dog as they use their senses of sight and touch to identify seven common trees in the snow-covered forest.



Secrets of the Apple Tree

By: Carron Brown

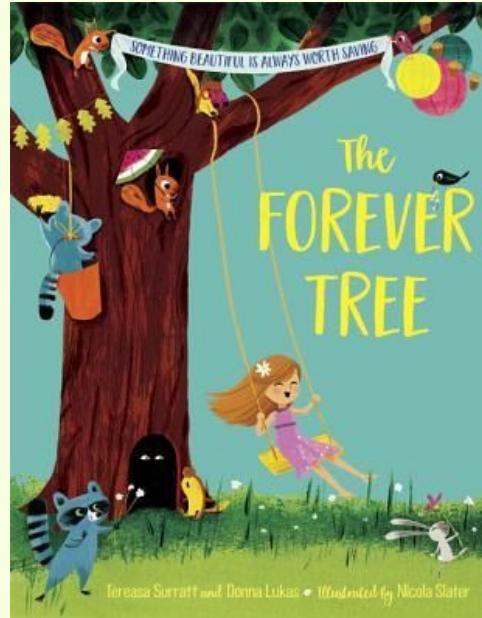
This is a fun book that turns the life cycle of an apple tree into an interactive adventure! Children will learn about animals that use trees and creatures that help trees grow!



The Forever Tree

By: Tereasa Surratt

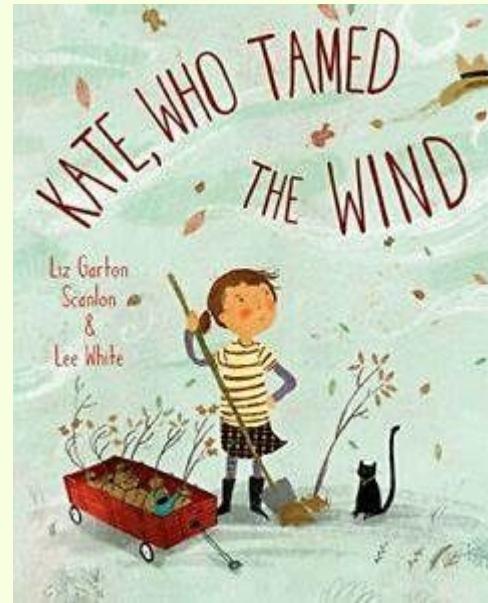
This is a timeless story about loss and renewal at home and in nature. This story is based on a real tree in Wisconsin that grew from something more than water and sunshine. It grew from love. The animals and humans always knew their tree was special.



Kate, Who Tamed the Wind

By: Liz Garton Scanlon

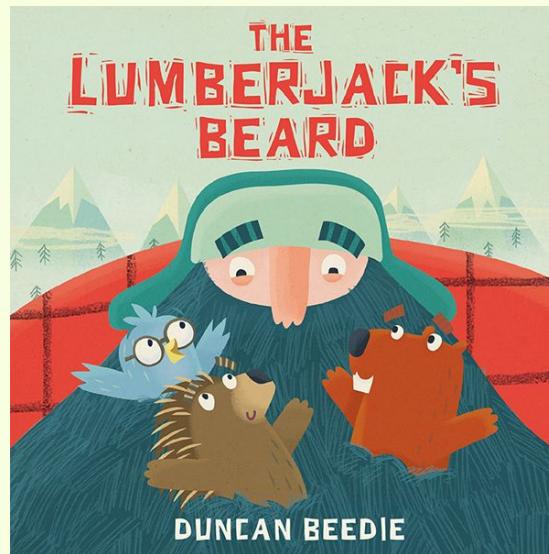
This story is about a little girl who devises a plan to tame the wind. With an old wheelbarrow full of young trees, she ventures up the hill to plant them. This story demonstrates one of the important role trees play in our lives, and how we can care for the world in which we live.



The Lumberjack's Beard

By: Duncan Beedie

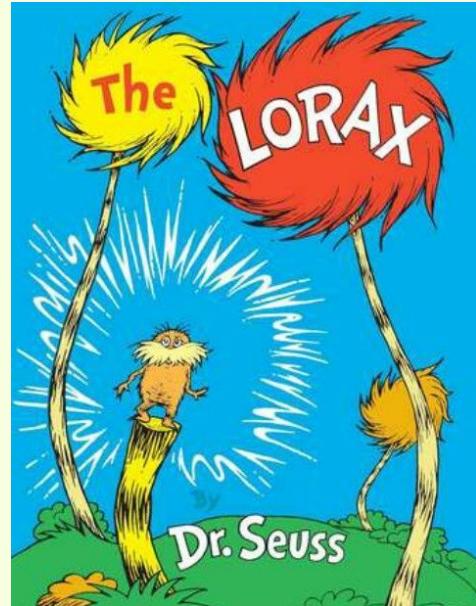
Lumberjack Jim Hickory heads to the woods with his ax and begins to cut down trees. In the process, he inadvertently takes away the home of several animals. He allows the animals to take up residence in his beard, but soon realizes this solution is not working. He decides to plant trees to replace the ones he has cut down.



The Lorax

By: Dr. Seuss

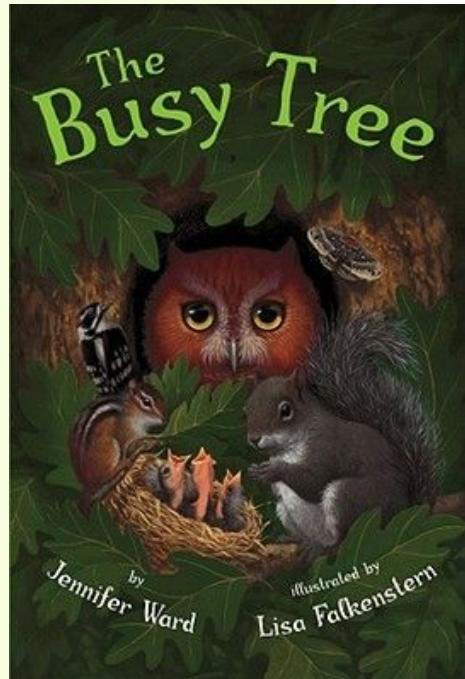
This powerful story teaches children how to be an advocate for trees and demonstrates what could happen if we take the Earth and her resources for granted.



The Busy Tree

By: Jennifer Ward

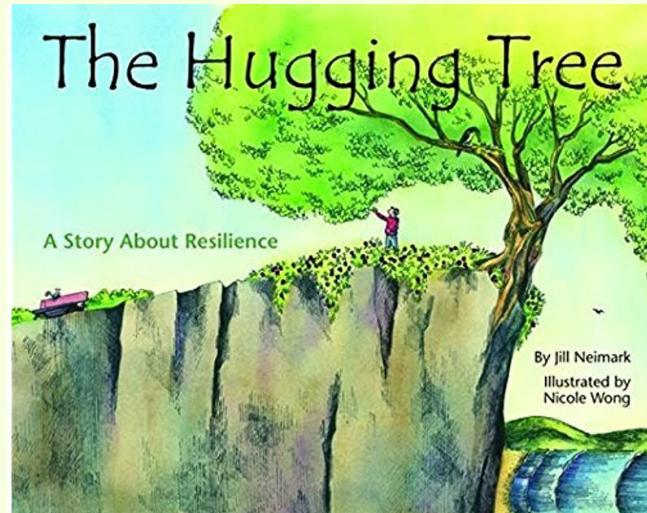
A story to that will introduce young readers to the amazing activities that go on in a tree. Acorns nibbled by chipmunks, ants scurrying across a trunk, a spider spinning a web, leaves "breathing out air for all to breathe in"--everything adds up to a "busy tree" for all to "come and see."



The Hugging Tree

By: Jill Neimark

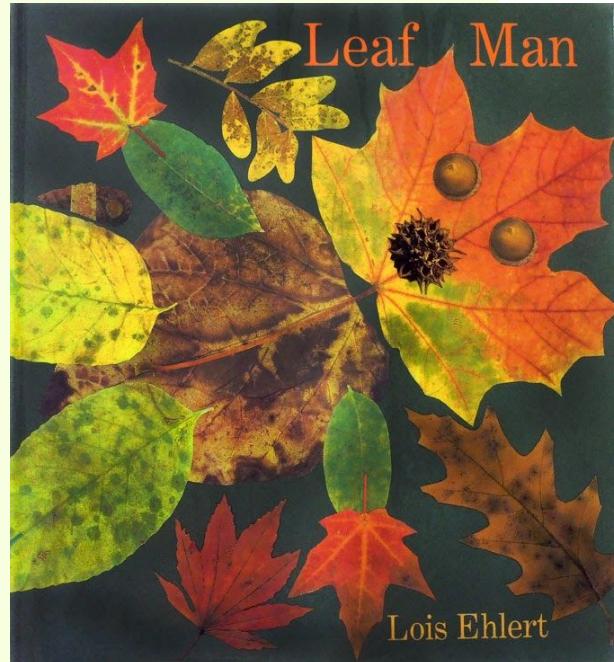
A little tree ends up on a cliff and must grow there. She finds comfort in the sea and the moon, support from loons, and connection and warmth from the people sitting in her shade. The Hugging Tree is a poetic and peaceful story that aims to teach children about hope and resilience. Rather than a lonely tree on a lonely cliff, the tree represents community and a place to get in touch with inner hopes and dreams.



Leaf Man

By: Lois Ehlert

A whimsical story about a man made of leaves who goes on an adventure with the wind. This book is fun and engaging for little ones. Fun images are depicted throughout the story using actual leaves!

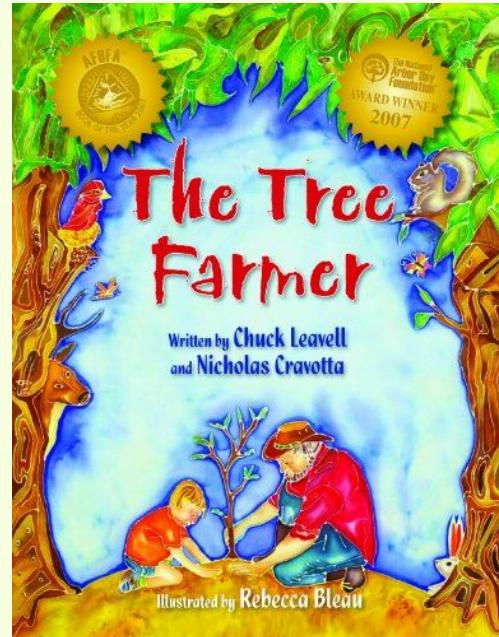


The Tree Farmer

By: Chuck Leavell and Nicholas Cravotta

A grandfather who owns a tree farm takes his grandson on a magical journey through the forest, where trees become musical instruments, books, a baby's crib

and more. The story explains the vital role that trees play in our lives, providing us with the wood for our homes, furniture and other products--and mankind's responsibility to protect and care for them.



VIDEOS

The following videos are suitable for student and classroom viewing



List of Online Videos for Students

- [Life as a tree! - SciShow Kids](#)
- [Can We Live Without Trees?](#)
- [Tree Song](#)
- [7 Fun Facts About Trees](#) (watch up to 3:57 for tree facts)
- [Types of Leaves](#)
- [How Do Trees Grow?](#)
- [Trees Can Talk To Each Other. Seriously.](#)
- [How Trees Talk](#)
- [Arbor Day For Kids](#)
- [Life Cycle of an Apple Tree](#)



02

Lessons

Ideas and Instructions

Investigating Tree Rings

Link to purchase tree slices: [Tree Slices: Amazon](#)

Materials:

- Computer
- Magnifying glasses
(optional)

One of the following:

- Tree slices OR
- A tree stump near your school that you are able to investigate OR
- Picture/image of a tree stump

PA Learning Standard

4.1 1.E Describe the seasons and describe how the change of the season affects living things.

Vocabulary

Dendrochronology, increment borer, coring

Objective

Determine what information can be collected from investigating tree rings.

Share fact: Not all trees have tree rings. Only trees that experience a “growing season” have tree rings. Therefore, some trees that grow in tropical climates where the weather stays warm will not have tree rings. These trees grow all year round.

Investigating Tree Rings

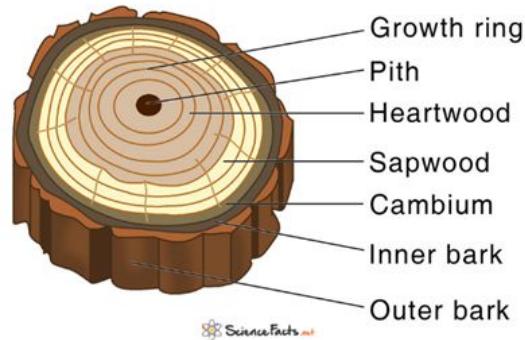
Video: [Life As A Tree!](#)

Instructions: Watch the linked video above with students. This video explains tree rings and how they provide information to us. Provide children with tree ring cookies or investigate a tree stump close to your school. (Optional: If you cannot investigate actual tree slices/stumps, you can substitute with pictures.) Use magnifying glasses to investigate the rings found in the tree. Have children count the rings. (*Remember, only count the dark rings to tell a tree's age.) Discuss the seasons and how they affect how a tree grows. Can you tell how wet or dry the weather was during each year of growth? (*Hint – the thicker the light tan ring, the warmer and wetter the growth year.)

Additional Activity: Have the children record their findings in their “Tree Journal”. Younger children can draw their findings. Older children should be encouraged to write about their findings in addition to their drawing.



Parts of a Trunk



Tree Life Cycle

Materials:

- Supplies to create life cycle craft – suggestions: poster board, paper plate, construction paper, play dough, yarn, pipe cleaners, pencil, scissors, glue, tape, tree seeds (example: pine nuts, apple seeds, acorns, pinecones, etc.), any other materials available to create life cycle
- Computer

PA Learning Standard

4.4 1.C Describe the life cycles of different plants and animals in a terrestrial habitat.

Vocabulary

Seedling, sapling, sprout

Objective

Describe the life cycle of a tree.

Share fact: Trees can live to be thousands of years old.

Tree Life Cycle

Instructions:

PART 1: Watch the video [Life Cycle of an Apple Tree](#) and the time-lapse video [Life Cycle of a Tree](#).

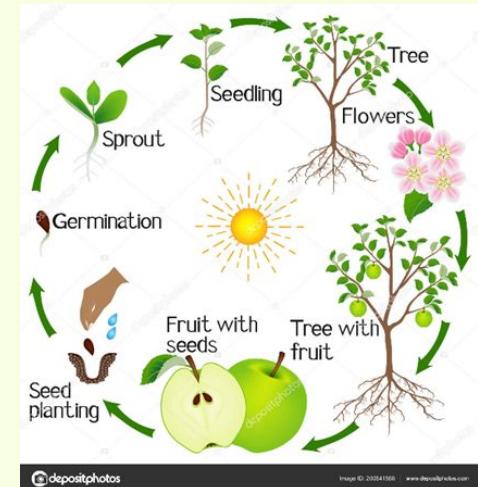
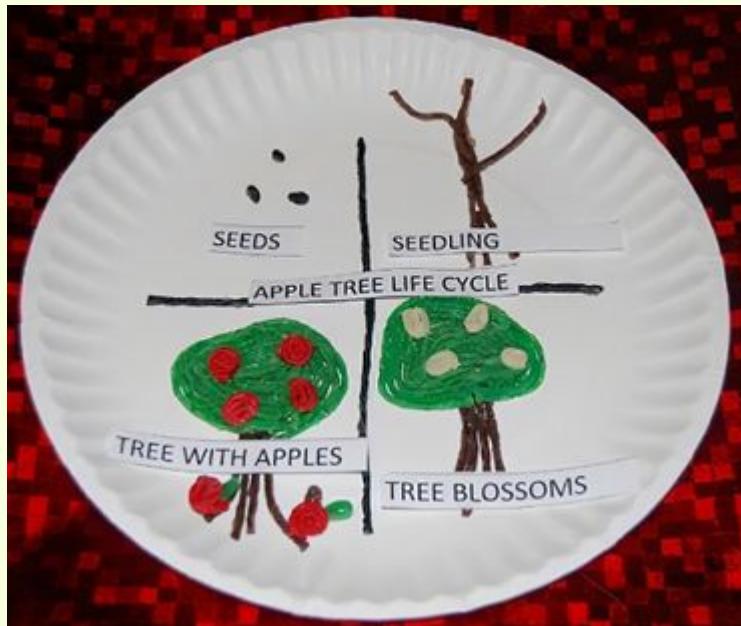
PART 2: Take a walk to look for trees in the different stages of the life cycle. Investigate the trees you find and look for any signs of seeds from each tree. Use a tree identification book of your choice to try to identify what trees you are investigating. After your walk, discuss what you have learned about how trees grow. Discuss the different types of trees you found on your walk and what kind of seeds each of the trees had. How are they different? How are they the same?

PART 3: Provide supplies for children to create a 3-D model of the life cycle of a tree. Instruct them to plan and design their model before assembling it. Assure students that there is no right or wrong way to create their model. If they need guidance, show them images of a tree's life cycle like the one here: [Life Cycle of an Oak Tree](#)

Alternate Activity: Have students draw the life cycle of a tree in their "Tree Journal".

Additional Optional Activity: Read one of the following books to children: [Trees, Trees, Trees](#) written by Nancy Noel Williams (for ages 3-6) or [The Magic and Mystery of Trees](#) written by Jen Green (for ages 7-9). Each of these books mentions the life cycle of a tree.

Tree Life Cycle: Diagrams



Seed Graphing

Materials:

- Large piece of paper to create graph
- Marker

PA Learning Standard

2.4 1.A.4 Represent and interpret data using tables/charts.

Vocabulary

Germination

Objective

Learn about different types of trees, what their seeds look like, and how they are spread. Evaluate data using a bar graph.

Share fact: Plants rely on wind, water, animals, and even people to help spread their seeds.

Seed Graphing

Instructions: Explore different types of tree seeds from a variety of trees that surround your school or are located in your neighborhood. Investigate what type of tree each seed may have come from. Create a seed graph with students. Together, add the seeds you find to the appropriate block on your graph. Evaluate the data that has been collected. What can we learn from our graph? What type of trees are there more of? How can you tell? How do each of these trees spread their seeds?



(Photo represents different types of seeds.)

Giving Tree Yoga

Materials:

- Computer

Optional:

- Yoga mats
- The Giving Tree by Shel Silverstein

PA Learning Standard

10.4 1.A Demonstrate coordination of purposeful body movements.

Vocabulary

Yoga, life cycle

Objective

Use our body to create yoga poses related to trees.

Giving Tree Yoga

Yoga video link: [Kids Yoga Story - The Giving Tree](#)

Instructions: Use the linked video above to practice yoga with tree inspired poses. This yoga practice is based on the story [The Giving Tree](#). Have students follow along with the story and try to perform the yoga poses. When the video is over, invite students to make up their own yoga poses to represent the life cycle of a tree.

Leaf Man

Materials:

- The book Leaf Man written by Lois Ehlert
- Leaves and other found tree parts gathered by teacher or students (*prior to lesson*)
- Glue
- Construction paper
- Drawing materials (markers, crayons, and/or colored pencils)

PA Learning Standard

1.3 1.B Ask and answer questions about key details in a text.

Vocabulary

Photosynthesis

Objective

Recall detail from a story. Create a character and setting using information from the book.

Share Fact: A tree's leaves provide food and air to keep it healthy and help it grow.

Leaf Man

Instructions: Read the story. Ask children questions about text. (Examples: Who was the story about? What things did Leaf Man see on his travels? What helped Leaf Man travel?) Invite the students to create their own version of Leaf Man using the leaves and natural materials provided. Invite them to draw a “setting” (or place) on the construction paper where their Leaf Man would like to go. Ask students if they are able to identify the tree their leaves came from. (Optional – use a tree identification book or app, such as “LeafSnap”, to try to identify the trees where your leaves are from.)

Squirrel Tag

Materials:

- Enough ribbons to allow one per player

PA Learning Standard

10.4 1.A Demonstrate coordination of purposeful body movements.

Vocabulary

Eastern Gray Squirrel, den

Objective

Follow rules of a game.

Share Fact: Squirrels construct their dens in high branches of trees or within the tree's trunk. These squirrels seem to prefer deciduous trees for their homes as opposed to coniferous trees.

Squirrel Tag

Instructions: Each child will receive one ribbon or flag to be tucked into their pocket or waistband which represent their “tail”. A designated area with boundaries should be established. Safety rules should be reviewed before play begins. (Examples: Stay in bounds, no pushing or tripping peers, etc.) Teacher/adult should demonstrate the proper way to grab a flag from other players. Teacher/adult informs children when the game is over.

Rules for play: Each player tries to grab the “tail” (flag) from the other players and collect them for themselves. Children will duck and dodge each other, trying not to let the other players grab their tail. If a player’s tail is taken, they may stay in the game and try to get their tail back/collect more tails. Tails must be visible at all times. Players should not hide or hold onto their tails when other players are trying to grab them. The player with the most tails at the end of the game is declared the winner. The game ends when the time runs out or when the teacher/adult declares the game to be over.

Going On A Wood Hunt

Materials:

- Paper
- Pencil

PA Learning Standard

6.2 1.A Identify goods, consumers, and producers.

Vocabulary

Consumer, producer, goods

Objective

Recognize how trees and products made from trees impact our everyday lives.

Share fact: Ninety percent of American homes are made of wood.

Going On A Wood Hunt

Instructions: Have children walk around the classroom/hallway/building and find items that are made of wood. Create a list together of every item you find that is made of wood. Discuss the impact wood has on our everyday life. Invite children to think about what we would do if we didn't have wood. What substitute could we use to make the products that are made of wood? How would that impact us?



This presentation was made by Lehigh
Carbon Community College, ECE 210
Students to serve as a resource to school
age professionals researching units on
native Pennsylvania trees and for those
looking for connecting education activities
for school agers in conjunction with a visit
to the LCCC Arboretum!

ENJOY!

