



## Wisconsin Ag in the Classroom

# Freddy Fir Christmas Tree Lesson Plan Booklet

Updated April 2020

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[www.wisagclassroom.org](http://www.wisagclassroom.org)

Other great resources can be found at:

<https://www.christmastrees-wi.org/>

<https://realchristmastrees.org/>

# Christmas Tree Fast Facts

## Production Information

Coniferous trees have cones that are made of scales. The scales are specialized leaves. Most coniferous trees have both male and female cones. Male cones are soft, small and produce pollen. Female cones produce eggs, are larger and woody. Pollen is transported by the wind.

Producers must continue to plant trees in order to have an adequate supply for consumers and to make up for trees lost to disease, poor growth and competition from other plants. Growers will often plant one to three new seedlings for every tree they harvest. Seedlings are grown in nurseries and are often 3-5 years old when they are planted in the field on tree farms.

Almost all trees require shearing to attain the Christmas tree shape. Shearing must be done annually to give trees the more even shape and denser look people prefer to see in their natural Christmas trees. Mice and meadow voles can kill entire stands of young trees by eating the bark under the winter snow cover. This is called girdling.

Regular mowing and weed control help to keep a rodent population exposed to natural predators.

At six to seven feet, trees are ready for harvest. It takes six to ten years of fighting heavy rain, wind, hail and drought to get a mature tree.

## Facts on Wisconsin Production

USDA Census of Agriculture and Census of Horticultural Specialties:

<https://www.christmastrees-wi.org/content/info/links>

# \_\_\_\_\_ Christmas Tree farms

# \_\_\_\_\_ Acres of Christmas trees

# \_\_\_\_\_ Trees harvested

\$ \_\_\_\_\_ Annual Christmas tree sales

# \_\_\_\_\_ Wreaths made

## Career Information

Seasonal work includes tree planters in the spring, shearing crews to prune the branches, harvesting crews in the fall, and people to help in tree sales from Thanksgiving until Christmas. People also are needed to make wreaths and other decorations from trees. Crop consultants can help with soil and foliage tests, pest and animal control, and disease prevention and treatment. Growers may specialize in seedlings that are sold to tree producers.

## Trivia

- All 50 states grow Christmas trees.
- For every real Christmas tree harvested, 2 to 3 seedlings are planted to continue the cycle of growth.
- The top selling Christmas trees are: Balsam Fir, Douglas Fir, Fraser Fir, Noble Fir, Scotch Pine, Virginia Pine and White Pine.

## Other Information

To get trees ready for harvest, each tree is cut, shaken (if needed) to remove dead needles, and then baled using a machine which presses the branches against the trunk, holding them in place with netting or twine. This protects the tree, helps to retain moisture, and makes it easier to handle for shipping. As many as 800 baled trees can be loaded in a big tractor trailer heading for a retail location.

Some farmers plant small trees into pots. These are for people who want to buy a "living" tree which can be planted in their garden in the spring.

Real Christmas trees are renewable and help to stabilize soil, protect the water supply and provide refuge for wildlife. They are often grown on soils that won't support other crops.

# A Timeline History of Christmas Trees

## History of Christmas Trees

<https://realchristmastrees.org/dnn/Education/History-of-Christmas-Trees>

Source: National Christmas Tree Association

Review the timeline with students:

- **1510** – The first written record of a decorated Christmas Tree comes from Riga, Latvia. Men of the local merchants' guild decorated a tree with artificial roses, danced around it in the marketplace and then set fire to it. The rose was used for many years and is considered to be a symbol for the Virgin Mary.
- **1530** – There is record from Alsace, France (then Germany territory) that trees were sold in the marketplace and brought home and set up undecorated. Laws limited the size to "8 shoe lengths" (slightly over 4 feet).
- **1600s** – By the 17th century, it was common in Germany to decorate Christmas Trees with apples. This practice was a holdover from the 14th and 15th centuries when evergreen boughs hung with apples were the only prop used in the "miracle plays" that were performed at the churches on December 24. December 24 was Adam & Eve's Day in the early Christian calendar, and the plays were used as ways of teaching the Bible to a largely illiterate population.
- **1700s** – In parts of Austria and Germany, evergreen tips were brought into the home and hung top down from the ceiling. They were often decorated with apples, gilded nuts and red paper strips. Edible ornaments became so popular on Christmas Trees that they were often called "sugartrees." The first accounts of using lighted candles as decorations on Christmas Trees come from France in the 18th century.
- **1800s** – The Christmas Tree was introduced in the United States by German settlers. It rapidly grew from tabletop size to floor-to-ceiling.
- **1851** – Christmas Trees began to be sold commercially in the United States. They were taken at random from the forests.
- **1853** – Franklin Pierce is credited with bringing the first Christmas Tree to the White House.
- **Late 1800s** – The first glass ornaments were introduced into the United States, again from Germany. The first ones were mostly balls, but later chains of balls, toys and figures became more common.
- **Around 1883** – Sears, Roebuck & Company began offering the first artificial Christmas trees – 33 limbs for \$.50 and 55 limbs for \$1.00.
- **1900s** – Due to overharvesting, the natural supply of evergreens began to be decimated. Conservationists became alarmed, and many magazines began to encourage people to substitute an artificial "snow" covered tree, consisting of a branch of a deciduous tree wrapped in cotton.
- **1901** – The first Christmas Tree farm was started in 1901 when W.V. McGalliard planted 25,000 Norway spruce on his farm in New Jersey. Also in 1901, Theodore Roosevelt tried to stop the practice of having Christmas Trees out of concern about the destruction of forests. His two sons didn't agree and enlisted the help of conservationist Gifford Pinchot to persuade the president that, done properly, the practice was not harmful to the forests.
- **1930s** – President Franklin D. Roosevelt started a Christmas Tree farm on his estate in Hyde Park, New York.
- **1966** – The National Christmas Tree Association began its time-honored tradition of having the Grand Champion grower present a Christmas Tree to the First Lady for display in the Blue Room of the White House. That year, Howard Pierce of Black River Falls, Wisconsin, presented a tree to President Lyndon Johnson and First Lady Lady Bird Johnson.
- **Today** – Approximately 25-30 million Real Christmas Trees are sold each year in the United States. Almost all of these come from Christmas Tree plantations.

There are many ways that students can create a timeline using the dates above.

Group timeline:

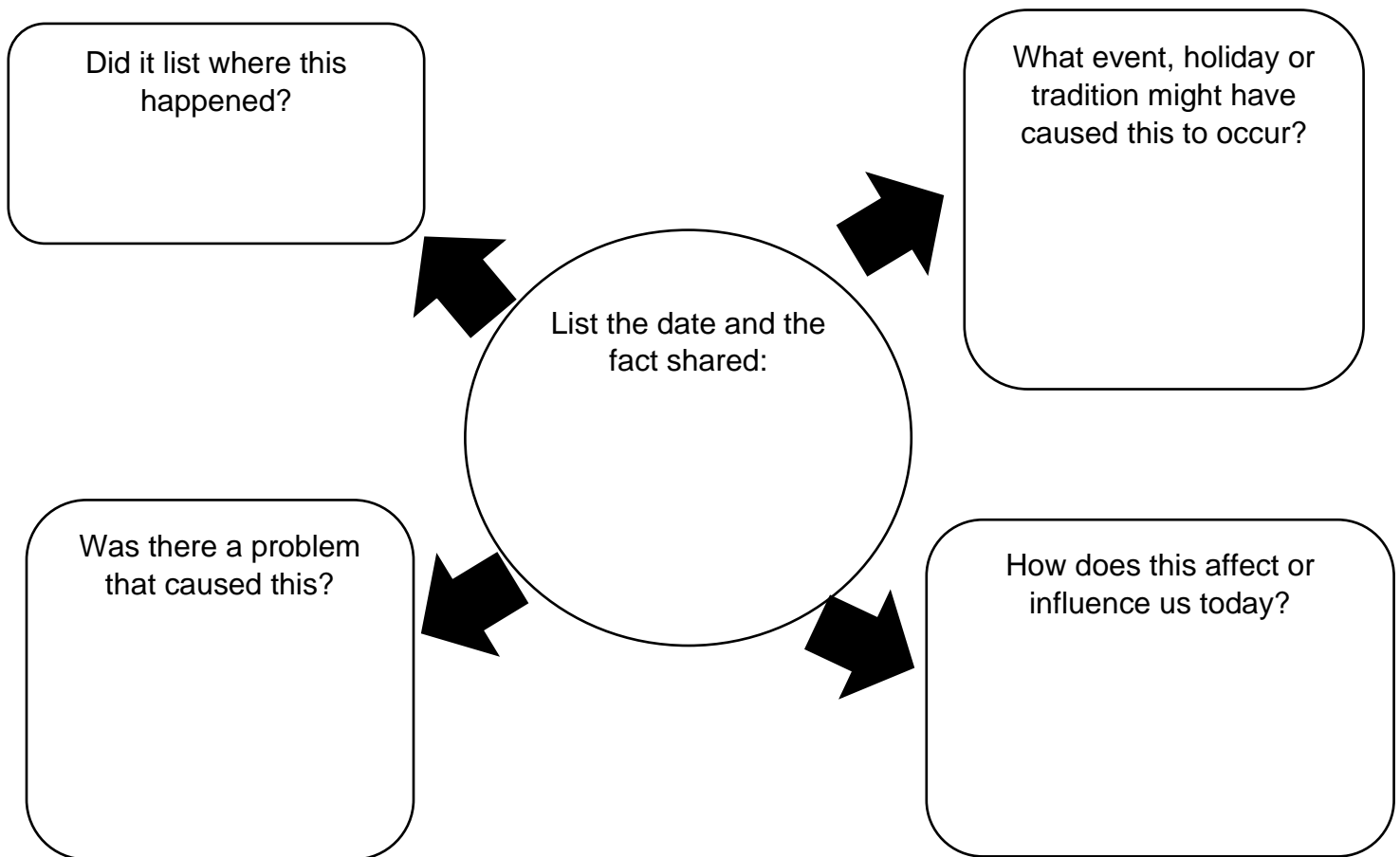
1. Assign one date to a student- have them create a visual on an 8 1/2 x 11" sheet of card stock. They will list the date on top, the information given above, and then they can add to the information. They might show on a map where that event happened (i.e. country, state), they could do further research on that date to add to the information given, or they could draw a picture depicting the information shared.
2. The card stock would then be assembled in order and put on a hall way wall, bulletin board, or displayed in other manners.

Small group work:

1. Run copies of the above timeline and cut them up so each date is on a slip of paper. Each group gets a set of slips.
2. The students work together to put them in the correct order from 1510 to current times.
3. As they work together, a student reads the information on the slip of paper and points out two facts from the sheet. A recorder for the group writes down all the facts.
4. At the end, the groups share their facts.

Why did these events occur?

As a group or in small groups, the students complete the following chart.



# Ring Around The Christmas Tree

## Important Terms:

- Tree ring: A growth ring produced annually which assists in giving an indication of the environment and growing conditions the tree has experienced.
- Dendrochronologist: Scientist who studies the growth of rings in trees
- Stem: Young stems are made of xylem, phloem and cambium layers. The stem gives support and is also called the trunk.
- Phloem: Carry dissolved food and nutrients throughout the plant. Conducting tissue for photosynthesis.
- Cambium: Place of growth in the tree stem located between the inner bark and the wood of the tree.
- Xylem: New cells are produced each year. Gives support and transports water and nutrients upward in the plant. As xylem clog up over time, they become heartwood and help make up the cells we see as rings.
- Conifer: A gymnosperm which bears cones.
- Gymnosperm: Identifies trees usually known as softwoods or evergreens. Christmas trees are normally gymnosperms.
- Cone: seed bearing structure of certain gymnosperms.
- Evergreen: Retains at least some leaves through the fall and winter.

## Materials for this activity:

- Several cross sections of cut trees for students to view. Ask students who may have parents that cut wood for samples.
- Tree Ring Example handout
- Tree Ring and Student's Timeline handout
- Paper or poster board and supplies to make their own tree ring example

## To see examples of how to read tree rings:

- Arbor Day website- <https://www.arborday.org/trees/ringslivingforest.cfm>
- International Paper Corporation- <http://www.internationalpaper.com/docs/default-source/english/sustainability/treerings.pdf?sfvrsn=2>

Students will explore the signs about tree growth that are shown in a tree ring

1. Review the parts of a tree's stems and rings. Discuss differences in a young tree cross-section to an older tree cross-section. Identify the stem, phloem, cambium, xylem and any other parts of the cross-section.
2. Ask how many students have seen the inside of a tree trunk. Show a picture or the actual tree trunk cross section to the class. Try to determine the age of a tree by counting them and discuss variation in the rings.
3. Reasons for larger rings: longer growing season year, adequate fertilizer, abundant rainfall, and other good growing conditions.
4. Reasons for smaller rings: little rain, poor care, lower springtime temperature, shorter growing season, crowding from neighboring trees, and other poor growing conditions.

5. Reasons for variation in rings: Different shaped rings may show when something was pressed against the tree, dips in the rings show when something was inserted into the tree (maple sap spigot), different species react differently to growing conditions, narrow on one side and wide on the other indicates crowding of the tree on the narrow side, narrow rings followed by large rings indicate that an encroaching tree died and then the affected tree had a growth spurt, and climate changes. Trees also can show fires and floods by changing the way that the rings grow.

### Tree Ring and Student Timeline Comparison

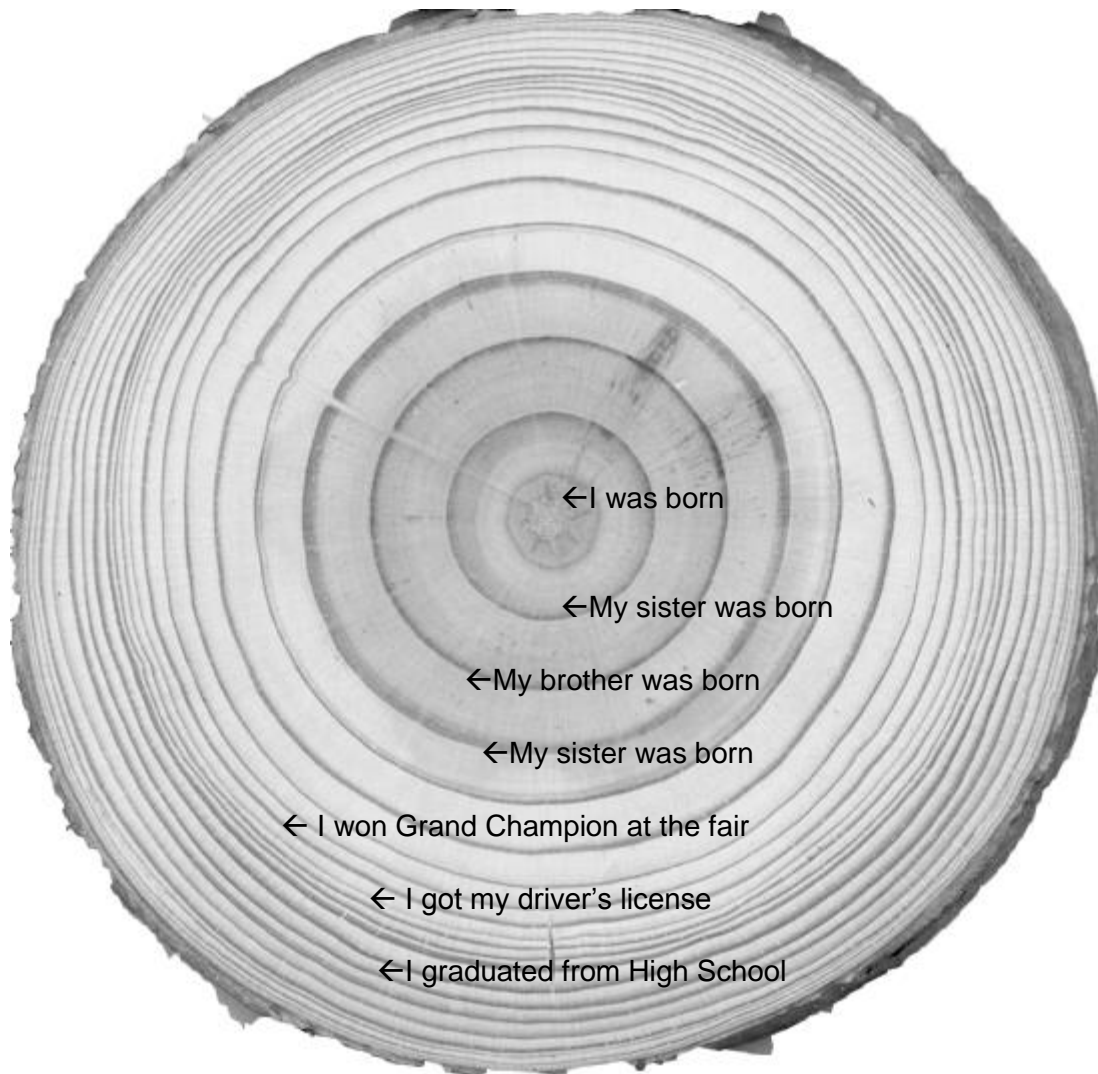
This activity will allow students to create their own version of a tree ring timeline compared to events in their lives.

1. Distribute large pieces of paper to students and instruct them to create their own tree ring timeline of their life.
2. Remind them that the counting starts at the middle ring when the tree was youngest. Encourage them to vary their rings on years when they grew the most or to have dips on years that they broke a bone...
3. Require that they mark at least five important events from their life (moving to a new house, birth of a sibling, fun family vacation...) on their tree ring and then encourage them to decorate it creatively (use real bark or ripped paper for the outside of the tree, put leaves on the paper to decorate...)
4. Share with a partner their tree-ring timeline and then display the class timelines around the room.

### **Tree Ring Example**



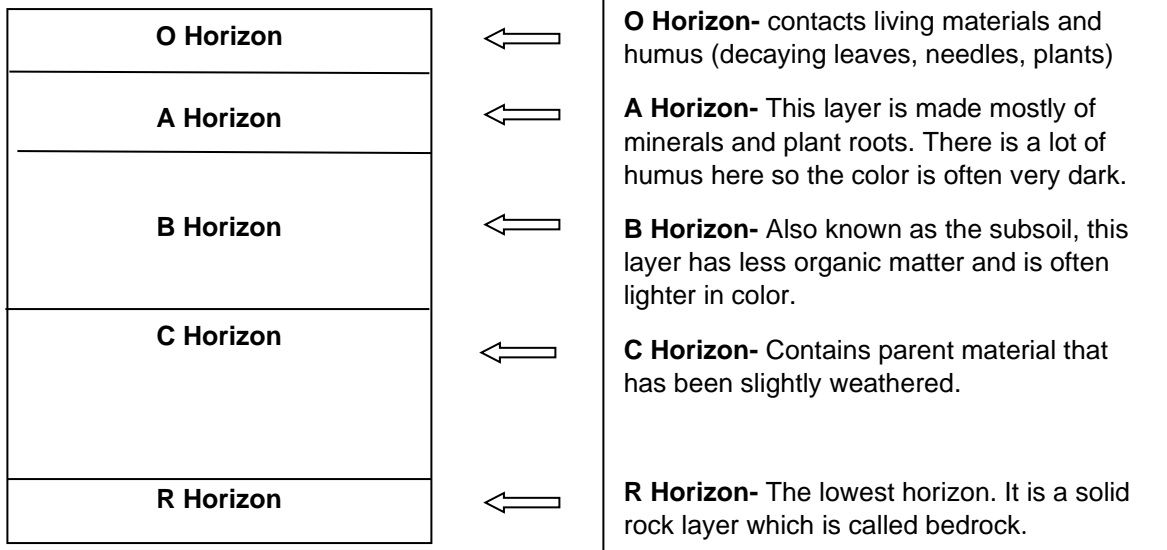
## Tree Ring and Student's Timeline Example



**Students can now design their own timeline using a tree ring for a base!**

# Christmas Trees and the Environment

## It starts with soil – Soil Profile and Horizons



**How it all happens:** Soil formation is a slow process! **It takes 100 years to form 1” of soil.** New soil starts from **parent material** which could be organic material, volcanic ash, sediment, or rock. The **weathering process** is caused by wind, rain, freezing and thawing, chemical activity and other factors. The **climate** of an area affects how much precipitation there is and the temperatures. The parent material is broken down into smaller particles over time which creates different layers (**horizons**). **Organic matter** (plants and animals) plays an important role in soil formation because of the **decomposition** and activity they create. **Plant roots** that move into the layers also affect the amount of **air** and **water** that mix with the layers. **Humans** cause changes in soil formation with buildings that are put up, agricultural practices, and movement of the soil. New soil is always being formed – it’s just a slow process!

## Christmas trees and recycling

- **Air** - Photosynthesis is the synthesis of sugar from light, carbon dioxide and water, with oxygen as a waste product. In other words, trees absorb carbon dioxide and send out oxygen!
- **Soil** – Christmas trees help hold soil in place (by their roots), protect water supplies and provide shelter for wildlife.
- **Prevent artificial trees from going into landfills-** Artificial trees are usually made with petroleum-based products and will never break down. The average artificial Christmas tree is used for 6-9 years.
- **Re-use that live tree-** people use “live” trees in pots that can be planted after the holidays. Trees can also be chopped up for mulch, made into decorations or used for wildlife habitat.



## Trees and the environment

P G H R O M S R D W X C T D M  
B A D L R G T E U S L E E O E  
E T R D G F N O D I H C T S T  
D E A E A E T I M I O G E U S  
R T G C N B J A R M M L O M Y  
O U D W I T T S P E C E U U S  
C R Y J C E M O N I H O N H T  
K Y P H M I S A T A D T S T O  
Z I I Q A I T R T L M V A L O  
E Q X N T A A Q P E U U I E R  
O X C I T P N W U M R O H I W  
Q E O N E G Y X O D S I Z A G  
S N J Z R F L M I N E R A L S  
J M P Z C O N W Q W M W L L G  
E L I F O R P L I O S A E R X

**Find and circle the following terms:**

BEDROCK

HUMANS

ORGANICMATTER

PARTICLES

SOIL

CLIMATE

HUMUS

OXYGEN

ROOTSYSTEM

SOILPROFILE

DECOMPOSITION

MINERALS

PARENTMATERIAL

SEDIMENT

WEATHERING

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## **PHOTOSYNTHESIS**

How many different words can you form from the word "photosynthesis"? For example, "his"

# Tree Facts Infographic Exercise

Source: Quick Tree Facts from the National Christmas Tree Producers

<https://realchristmastrees.org/dnn/Education/Quick-Tree-Facts>

Check the website link to get the most current version- this is from April 2020

- There are approximately 25-30 million Real Christmas Trees sold in the U.S. every year.
- There are close to 350 million Real Christmas Trees currently growing on Christmas Tree farms in the U.S. alone, all planted by farmers.
- North American Real Christmas Trees are grown in all 50 states and Canada. Eighty percent (80%) of artificial trees worldwide are manufactured in China, according to the U.S. Commerce Department.
- Real Trees are a renewable, recyclable resource. Artificial trees contain non-biodegradable plastics and possible metal toxins such as lead.
- There are more than 4,000 local Christmas Tree recycling programs throughout the United States.
- For every Real Christmas Tree harvested, 1 to 3 seedlings are planted the following spring.
- There are about 350,000 acres in production for growing Christmas Trees in the U.S.; much of it preserving green space.
- There are close to 15,000 farms growing Christmas Trees in the U.S., and over 100,000 people are employed full or part-time in the industry.
- It can take as many as 15 years to grow a tree of typical height (6 - 7 feet) or as little as 4 years, but the average growing time is 7 years.
- The top Christmas Tree producing states are Oregon, North Carolina, Michigan, Pennsylvania, Wisconsin and Washington.

How to make an Infographic:

1. Identify what information you want to share
2. What audience are you targeting? Students, adults, general public
3. Collect data and facts
4. Visualize what you want the infographic to look like
5. Use MS PowerPoint or other methods to design your graphic.

**Use the information above to design your own infographic!**

# Christmas Tree Research Project

This activity will give students an opportunity to interview people, collect data, and use the data to calculate percentages and make various types of graphs.

1. Distribute copies of the Christmas Tree Research Worksheet to students.
2. They can survey other students, family members, school staff or friends. They should interview 20 people.
3. Another option is to use an online survey tool for conducting their research.
4. Review how to calculate percentages and the various types of graphs.
5. Students will analyze their data and complete the worksheet.
6. Students can give summaries of their data to the class.

## Procedure:

Students will interview 20 people and ask the following questions:

### Do you use a real or artificial Christmas tree?

Real                       Artificial

### What date do you normally put up your Christmas tree by?

December 1               December 5               December 10               December 15  
 December 20               December 24

### What date do you normally take down your Christmas tree by?

December 26               December 31               January 2  
 January 5               January 10               January 15

### If you use a real tree, what species of Christmas tree do you prefer?

Balsam Fir               Fraser Fir               Scotch Pine  
 White Pine               Spruce               Colorado Blue Spruce  
 Doesn't use a real tree               Not sure what species!

### Where do you get your real tree?

Pre-cut (from a tree lot, farm or other)               Doesn't use a real tree  
 Another person gave it to me               Cut a tree from your own property  
 Cut-your-own at a tree farm

**After compiling the data, complete the following:**

1. Calculate the percentage of people who buy an artificial tree and those buying real trees.
2. Create a bar graph comparing when people put up their Christmas trees.
3. Create a pie chart comparing when people take down their Christmas trees.
4. Calculate the percentage of people purchasing the various species of trees.
5. Create a pie chart comparing where people purchase their trees.

## Why buy a real tree?

Students will learn how to research, debate and share their ideas about a subject. This exercise will use the debate between using a real vs artificial Christmas trees.

Christmas tree industry sources to research:

- <https://www.christmastrees-wi.org/content/why-real>
- Go Green, Get Real- [https://www.christmastrees-wi.org/uploads/content\\_files/files/wctpa\\_brochure\\_GoGreenGetReal2012\\_lowres.pdf](https://www.christmastrees-wi.org/uploads/content_files/files/wctpa_brochure_GoGreenGetReal2012_lowres.pdf)
- <https://realchristmastrees.org/Education/Environmental-Benefits>
- <https://realchristmastrees.org/Education/Fake-Trees>

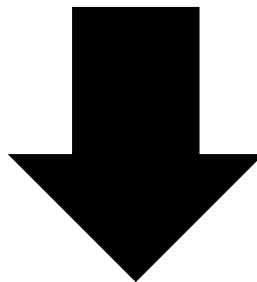
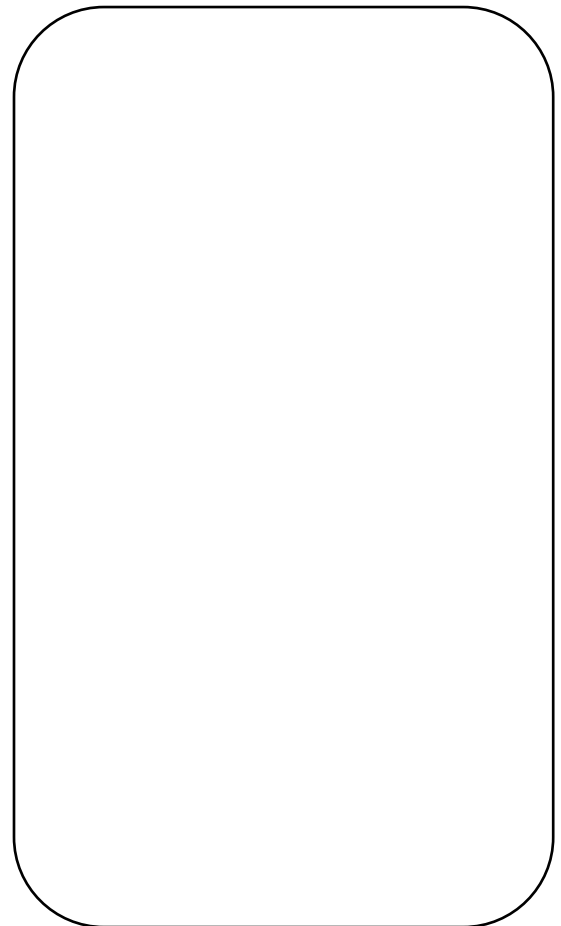
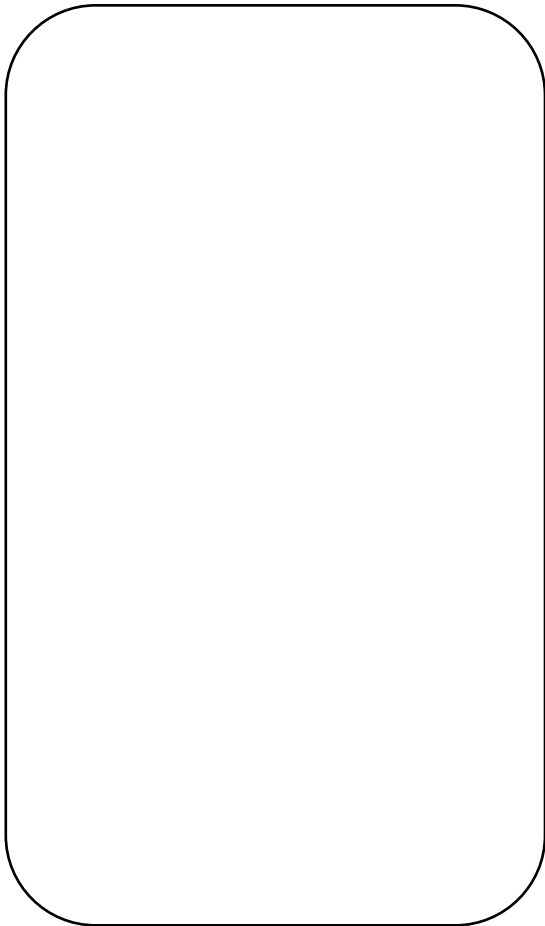
What sources can you find that support artificial trees?

Have the students think about their opinion on getting a real vs artificial Christmas tree.

Working in pairs, fill out this worksheet with each student researching one area:

### Facts about real trees

### Facts about artificial trees



<p>1. Each student shares facts they learned about real or artificial trees.</p> <p>Real:</p>          <p>Artificial:</p>	<p>2. What are the advantages of a real tree?</p>          <p>What are the advantages of an artificial tree?</p>
<p>3. Each student writes a persuasive statement about buying a real or artificial tree and presents it to each other.</p>	<p>4. What is the conclusion the students reach? Is one argument more persuasive? Did this exercise change their initial thoughts on real vs. artificial?</p>

# Real Christmas Trees are Recyclable

**Source: National Christmas Tree Association-** <https://realchristmastrees.org/All-About-Trees/How-to-Recycle>

After the holidays, don't throw your Real Christmas Tree in the trash or set it on the curb. **Real Christmas Trees are biodegradable, which means they can be easily reused or recycled** for mulch and other purposes. Here are some recycling options and tips on what to do with your tree after the holidays. Every community is different, but in general, you have these options:

**Curbside pick-up for recycling:** *Many providers will collect trees during regular pickup schedules on the two weeks following Christmas. There are often requirements for size, removing ornaments, flocking, etc.*

**Take your tree to a drop-off recycling center:** *Most counties have free drop-off locations. Usually, you may take up to two trees to a drop-off location at no charge.*

**Yard waste:** *Cut the tree to fit loosely into your yard waste container.*

**Tree recycling/mulching programs:** *Tree recycling and mulching programs are a fast-growing trend in communities throughout the nation. Check with your local department of public works for information. They chip and shred the trees, then make the mulch available for use in your garden. Your hauler will notify you of pick-up dates in your area. Be sure to check with your local hauler.*

**Nonprofit pickup:** *Call for an appointment to have a nonprofit organization in your area pickup your tree. Some Boy Scout troops offer a pickup service for a small donation (often \$5).*

**Soil erosion barriers:** *Some communities use Christmas trees to make effective sand and soil erosion barriers, especially for lake and river shoreline stabilization, trout stream restoration, and river delta sedimentation management.*

**Fish feeders:** *Sunk into private fish ponds, trees make an excellent refuge and feeding area for fish.*

**Bird feeders:** *Place the Christmas tree in the garden or backyard and use it as a bird feeder and sanctuary. Fresh orange slices or strung popcorn will attract the birds and they can sit in the branches for shelter. (Make sure all decorations, hooks, garland and tinsel strands are removed). Eventually (within a year) the branches will become brittle and you can break the tree apart by hand or chip it in a chipper.*

**Mulch:** *A Christmas tree is biodegradable; its branches may be removed, chipped, and used as mulch in the garden.*

**Paths for hiking trails:** *Some counties use shredded trees as a free, renewable and natural path material that fits both the environment and the needs of hikers.*

**Living, rooted trees:** *Get a rooted (ball and burlap or containerized) tree and plant it in your yard. (It's a good idea to dig the hole in the late fall while the soil is still soft, then plant the tree into that hole as soon as possible after Christmas.) Living trees have a better survival rate in mild climates.*

**Important:** *Never burn your Christmas tree in a fireplace or wood stove.*



## Recycle/Reuse Programs

Learn about the many ways that Real Christmas Trees are being recycled and reused in communities nationwide. Divide students into groups to explore these programs and report back to the class.

Website links:

- [Animal Treats in Zoos](#)
- [Salmon Spawning](#) - Northwest Oregon
- [Rebuilding an Island](#) - Easton, Maryland
- [Wildlife Habitat](#) - Porter County, Indiana
- [Mulch for Planting](#) - Georgia
- [Dune Restoration](#) - Gulf Shores, Alabama
- [Rebuilding the Louisiana Coastline](#) - Jefferson Parish, Louisiana
- [Home for the Herons, Bakers Lake](#) - Cook County, Illinois
- [Giving Back to the Community](#) - San Diego, California
- [Improving Fishing Areas](#) - Keene, New Hampshire
- [Building Better Parks](#) - Clarksville, Tennessee
- [Fueling Our Nation's Industry](#) - Tomahawk, Wisconsin
- [Turning Trees into Electricity](#) - Burlington, Vermont

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## Lesson- Exploring how to start a recycling program

For information on how to start and promote a recycling program in your area, please contact the National Christmas Tree Association at (800) 975-5920 or send an email to [info@realchristmastrees.org](mailto:info@realchristmastrees.org)

For those ready to begin right now, download the National Christmas Tree Association's [Recycling Manual](https://realchristmastrees.org/Portals/22/Files/Recycling%20Guide.pdf?ver=2016-07-31-180445-407) ( <https://realchristmastrees.org/Portals/22/Files/Recycling%20Guide.pdf?ver=2016-07-31-180445-407> ) which is full of ideas, information and resources for you to start a recycling program in your area. Use the Recycling manual to complete the following chart. You can expand this project to do an actual community assessment- it could be a great community service project!



**Is a Christmas Tree recycling program feasible for your community?**

<b>Steps for success</b>	<b>How can this be done?</b>	<b>Results you found</b>
Evaluate the need in your community, as well as the available resources.		
Create an Outline for Your Program		
Create a Budget		
Spread the Word		
Implement Your Program		
Evaluate Your Program		

## It Starts as a Tree

N I T S T E L A O C R A H C A C R T S A  
E S A T R R E E P R O D U C T S A W E G  
D E T F R U O M T R E E S B B L F N K T  
O Q A D E T S A P H T O O T M Y C H O B  
O I R H Z I Z S K E N I T N E P R U T E  
W J B A D N P A D D L E S P L Y W O O D  
H Y R J F R T T B V P Z Z W B M D Q H R  
I D W Y P U G Z L L W H N Z B O L F M D  
I D O Z Z F S M A J P Z R G Z B X G B U  
C S H E B K A C C E G V N N U R B B Z A  
N N I B A S E B A L L Z V D B M O I P T  
L X K X J M H A Z M D G F N Q H O K L G  
H V A J A K Y D E O D O R A N T S M N S  
S C I T E M S O C S E L G N I H S I E B  
B R S F K G C B T N T X Y X S H W L R L  
W L A K L Q U A X T H W Y X I E I E V Y  
H M O T R O B M F G K N E H H T A X S V  
Z P C C I R O X R O E U V C V P C R L R  
N S K O K U P R I G C C S O L V E N T S  
Z E X Y T S G N K F B M I O U Y C U X G

**Find these words of products that originate from a tree**

BATS	GUM
PADDLES	PLACEMATS
PLYWOOD	SHINGLES
SOLVENTS	TILES
TURPENTINE	WOODEN
TOOTHPASTE	BLOCKS
CANOE	CHARCOAL
CHEWING	COSMETICS
DEODORANTS	FLOOR
FURNITURE	GUITARS

# Papermaking

## Materials for this activity:

- Sponge
- Paper mold (made by tightly stapling window screen over an old picture frame)
- Plastic Basin or tub (big enough to immerse the frame)
- Paper, toilet paper, newspaper or paper related products (not glossy)
- Blender or food processor to be used to make the paper pulp
- White felt or flannel fabric the size of the paper mold

There are also many YouTube videos and how-to's online to learn how to make paper. Here's one option!

1. Select the pieces of paper to be recycled. Mixing different paper types will create a unique end result. You can use newspaper, scrap paper or even dryer lint!
2. Rip the paper into small bits and fill the blender half full with paper and then fill with warm water. Blend slowly and increase speed as the pulp looks smooth and blended (for about 30 seconds). If large pieces remain, blend longer.
3. Fill basin half full with water, then add three blender loads of pulp to the basin. The more pulp you add, the thicker the paper will be. Stir the mixture in the basin. (If the paper is to be used for writing on, stir two teaspoons of liquid starch into the mixture to prevent the ink from bleeding through the paper)
4. Place the mold into the pulp mixture and level it out by wiggling it side-to side to even the pulp on top of the screen.
5. Slowly lift the mold up until it is above the water level and wait until most of the water has drained from the new sheet of paper. If it appears too thick, remove some pulp from the tub, if it is thin, add more and mix.
6. When the mold stops dripping, gently place one edge of the new paper on the edge of a fabric square. With the new paper directly on the fabric, gently ease the mold down. Use a sponge to press out as much water as possible and wring the sponge into the tub.
7. Hold the fabric square and slowly lift the edge of the mold, being careful to insure that the wet sheet of paper remains on the fabric. If it sticks to the mold, you may have pulled too fast or not removed enough water. It takes a little practice, but the paper can always be put back in the tub and tried again.
8. When multiple papers are finished, stack them one on top of the other and squeeze the excess water out one last time. Gently separate the sheets and place them individually to dry. When dry, remove from the fabric.

# Standards

## **NALOS- National Agricultural Literacy Outcomes**

- T1.3-5.b
- T2.3-5.e
- T2.6-8.d
- T5.6-8.a

## **Science**

- SCI.SEP7
- SCI.SEP8
- SCI.LS2

## **ELA- English Language Arts**

- CCSS.ELA-LITERACY.R.F.4.4
- CCSS.ELA-LITERACY.S.L.5.1
- CCSS.ELA-LITERACY.S.L.4.1
- CCSS.ELA-LITERACY.W.4.1
- CCSS.ELA-LITERACY.W.4.2
- CCSS.ELA-LITERACY.W.4.7
- CCSS.ELA-LITERACY.W.5.1
- CCSS.ELA-LITERACY.W.5.4
- CCSS.ELA-LITERACY.W.5.7
- CCSS.ELA-LITERACY.RI.5.1
- CCSS.ELA-LITERACY.RI.5.7
- CCSS.ELA-LITERACY.RI.4.1
- CCSS.ELA-LITERACY.RI.4.7

## **Environmental Literacy & Sustainability**

- ELS.EX4
- ELS.EX5
- ELS.EN6
- ELS.EN7

## **Social Studies**

- SS.Hist1
- SS.Hist3

## **Career Technical**

- IMT1

## **WCCTS- Wisconsin Common Career Technical Standards**

- MME.MC2
- MME.MC3
- MME.MC7

## **Agriculture, Food and Natural Resources**

- PS1
- PS2