

The Book Planter

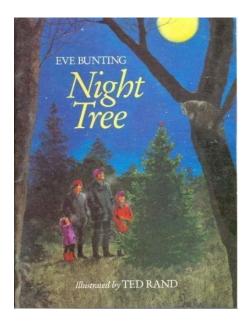


Ag in the Classroom

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December 2020: *Night Tree*Written by: Eve Bunting
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Night Tree is a heartwarming Christmas story about a family that takes an annual journey to a place called Luke's Forest to find a Christmas tree on Christmas Eve. They do not cut the tree down but instead bring supplies to decorate the tree for the animals of the forest. The supplies they use to decorate are not the typical ornaments and tinsel you might find on your tree. The family decorates the tree with fruits and nuts so that the forest animals can have a Christmas snack.



Fun Facts

- The North Carolina Forest Service operates a system of seven <u>Educational State</u> <u>Forests (ESFs)</u> designed to teach the public—especially school children—about the forest environment.¹
- North Carolina's timberlands (land covered with forest suitable or managed for timber) are growing 50% more softwood (conifers) and 100% more hardwood (deciduous, flowering, fruit, or nut-producing trees) than they are harvesting.²
- The Biltmore Estate was the site of the first forestry school in the United States, and the estate also helped establish the Pisgah National Forest.³
- Clearcutting often gets a bad reputation, but many of the myths have been debunked. See <u>Clearcutting...FACTS</u> and <u>MYTHs</u> in the **Links** section for more information.

Activity 1: Before, During, After Discussion Questions⁴

- 1. Call students to the reading area, or a central area in the classroom. Discuss:
 - a. What types of family traditions do you have around the holidays?
 - b. If your family decorates a tree at Christmas time, do you use an artificial tree or a real one?
 - c. Have you ever chopped down a tree before?
- 2. Tell the students that today they will be reading a story about one boy's family Christmas tree tradition.
- 3. Show your students the cover of *Night Tree*, and read the title and the authors; names.
- 4. Ask:
 - a. What do you think this story is going to be about?
 - b. What information does the cover of a book give us?
- 5. Begin reading the story. Pause after the family sees the deer. Discuss:

- a. What do you think they are going to do?
- b. Have you ever gone walking in a forest at night?
- c. What other types of animals might they see in the forest?
- 6. Finish reading the story.
- 7. Conclude with a summary discussion:
 - a. Why did the family hang those types of decorations on the tree?
 - b. Were you surprised by what the family did with the tree?
 - c. What do you think the author of this book is trying to tell us?
 - d. What are some other ways we can help wild animals?
 - e. Did you enjoy this book? Why?

Activity 2: Reading Questions Organizer⁵

Make a large class questioning chart on chart paper or the board. This will serve as an advanced organizer. Below is an example chart. Some sections are filled in to help guide the teacher for prompting the class, but only the section header should be provided to the students. The class completes the chart as a group after previewing the illustrations and reading the story. Complete the final column **What We Learned** after reading *Night Tree*.

Things to Consider	What We Noticed	Questions We Have	What We Learned
Setting: When Where	There are Christmas decorations on the house and in the town. It's night time?	Is it Christmas Day? Is it Christmas Eve?	
Characters: • Who	It looks like a mom and a dad and 2 kids. They look happy. There are also lots of animals.	Do they all get along very well? Do these animals know this family?	
Events: • What	The family is going into the woods at night. They are having a picnic. They decorate a tree and then leave the forest. There are lots of animals on the last page.	Why is the family going into the woods? What kind of picnic are they having and are they singing? Why would they decorate a tree in the middle of the forest? What are the animals doing at the end?	
Big Idea Author's Message: • Why	It seems like it's about Christmas.	What is the story mostly about? Why did the author write the story?	

Activity 3: What is a forest?⁶

- 1. Discuss:
 - a. What is a forest?
 - b. Who has visited a forest?
 - c. What did you see there? What did you do?
- 2. If no one has visited a forest, ask students to describe a forest they have heard or read about. If students have visited a forest, ask them to share specific

information about those they have visited. Encourage them to talk about all facets of a forest, not just the trees. Students may mention other plants, animals, or non-living forest elements, as well as spontaneous or planned activities they witnessed or participated in. (For example, A forest is...a place with a lot of trees; a habitat for many animals; somewhere you can go to get away from the city.)

- 3. As a class discuss these typical qualities of forests. Together, create a class definition of a forest. This discussion will be a great springboard for exploring the concept of urban forests later in the lesson, as well.
- 4. Allow students to explore the <u>US Forest Service website</u> to discover National Forests in North Carolina and across the United States. In what regions are these forests located?
- 5. Next share some forests from this list that may not look as students expect:
 - a. The saguaros of the Colorado National Forest
 - b. The temperate rainforest of Olympic National Forest
 - c. The sand pine scrub forest of Ocala National Forest
 - d. Petrified Forest National Park
- 6. **Extended Discussion**. Encourage students to think more broadly about forests, either as part of a class discussion or individually through journaling.
- 7. Ask:
 - a. What does a forest look like?
 - b. What different forms can a forest take? (Examples: rainforest, mountain top, national forest, urban forest, local forest, your own backyard)
 - c. What or who lives in forests?
 - d. How do different parts of the forest work together?
 - e. How do forests help our planet and us?
 - f. What may harm forests?
 - g. Who takes care of forests, and why is it important to do so?

Activity 4: Where are forests? and "Forest Freeze" Game⁶

- 1. Share a map of your town or county, or have students create their own using the <u>Discover The Forest tool</u>. Ask them to locate your school and as many nearby forests as possible.
- Have students bring a journal outside to the schoolyard (or nearest area with one or more trees). Ask students to point in the direction of the nearest forest, using what they have learned from the map(s).
- 3. Explain to students that they are actually standing in a forest—an urban forest. An urban forest may not seem like a traditional forest because most parts of an urban forest do not have dense tree growth.
 - a. An urban forest is the ecosystem in any settled area—urban, suburban, or rural. It encompasses all of the green space, including street trees, parks, landscaped boulevards, public gardens, greenways, and more! Eighty percent of the nation's population resides in urban areas, so urban forests may sometimes be the only forests that people experience.
 - b. Urban forests enrich our lives by providing us with clean air and water, storm-water control, energy conservation, reduction of pollution and noise, and an increase in outdoor opportunities and economic development, not to mention tranquility and beauty

4. Explain to students that they will be environmental journalists, using their journal to record their research and writing a non-fiction story about their urban forest.

5. "Forest Freeze" Game

- a. Have students walk around the schoolyard/urban forest and write or draw what they experience in their Forest Journals. Remind them to use their senses of sight, touch, hearing, and smell. Then, call "Freeze."
- b. Students should stop, look and closely observe the small area immediately around them, recording (words or pictures) what they discover. Call "Unfreeze" and they will return to a larger area of exploration until you call "Freeze" again.
- c. Return to the classroom and have students discuss their urban forest and share their journals with each other.
- 6. Lastly, revisit and revise the classroom definition of a forest based on these experiences. Have students write a new definition in their journals. Students could also create a Venn diagram comparing a "traditional" forest and an urban forest.
- 7. **Extension Activity**: Students can choose forests in three different forms (examples: urban forest, rainforest, scrub forest) and research/write a paper exploring these forests' similarities and differences.

Activity 5: Collecting and entering data for the National Tree Benefits Calculator⁶

- 1. Go to www.treebenefits.com
- 2. Enter your zip code.
- 3. Record the tree species you have identified from your community, school, yard, etc.
- 4. To find the diameter of the tree, first find the circumference by wrapping a length of string round the trunk, approximately 4.5 feet up from the ground. Mark the string where both pieces meet, and measure the length (the length is the circumference). Calculate the diameter of the tree (diameter = circumference/ π [pi, or 3.14]).
- 5. Choose your land-use type for the tree, and click Calculate.
- 6. Students can complete a survey of the trees around their home and neighborhood.

Activity 6: Making edible tree decorations⁷

- 1. Peanut Butter Pinecones
 - a. Collect pine cones. Any shape or size will do, just make sure they're open.
 - b. Cut 12" string or wire and tie to the end of the pine cone.
 - c. Spread peanut butter over the pine cone, covering completely.
 - d. Roll the pine cone in a bowl full of birdseed.

e. Tie to tree branches.

2. Birdseed Orange Feeders

- a. Mix two envelopes of Knox
 Gelatin (approximately 4
 tablespoons) to 1 cup of water.
 Simmer on the stovetop, over low
 heat, until the gelatin has
 completely dissolved. Then stir in
 2 cups of birdseed.
- Prepare the citrus (any citrus) by cutting one end—just enough so you are able to get in and scrape the rind clean.
- c. Poke a small hole through the rind and thread a piece of string on each side for hanging. A large sewing needle can be used or even the end of a metal skewer.
- d. Pack the rind with the birdseed mixture and place in the fridge for 2 hours.
- e. Once the birdseed mixture sets it will be hard to the touch and ready to hang.



- Clearcutting...FACTS and MYTHS (informational reader from the North Carolina Forest Service)
 - https://www.ncforestservice.gov/publications/FM0313.pdf
- What is Forestry? (video)
 <u>https://docs.google.com/presentation/d/1sWHKzHifyLhLZTkCAbUFDNuJ5iqx72V</u>

 lomQtZ1xRRql/edit#slide=id.p
- Forestry Educational Resources
- https://drive.google.com/drive/folders/1ERlzOdSm3GfqLYUj82L5OtvRpcG-rA14

Sources

- 1. https://www.ncesf.org/
- 2. https://content.ces.ncsu.edu/north-carolinas-forest-and-forest-products-industry-by-the-numbers
- 3. https://www.ncforestservice.gov/publications/FM0313.pdf
- 4. https://study.com/academy/lesson/the-night-tree-lesson-plan.html
- 5. https://can.gcisd.net/UserFiles/Servers/Server_96721/File/Activities/Book%20of%20the%20Month/Night_Tree ee 12.10.pdf
- 6. https://www.fs.usda.gov/Internet/FSE DOCUMENTS/stelprdb5201734.pdf
- 7. https://wilderchild.com/decorating-outdoor-edible-tree-for-the-animals/

K-5 Subject Areas

Reading, Writing, Speaking and Listening, Science, and Social Studies NC Standard Course of Study

Reading

- RL.K.1 With prompting and support, ask and answer questions about key details in a text.
- RL.K.2 With prompting and support, retell familiar stories, including key details.
- RL.K.3 With prompting and support, identify characters, settings, and major events in a story.
- RL.1.1 Ask and answer questions about key details in a text.
- RL.1.2 Retell stories, including key details, and demonstrate understanding of their central message or lesson.
- RL.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate
 understanding of key details in a text.
- RL.2.2 Recount stories, including fables and folktales from diverse cultures, and determine their central
 message, lesson, or moral.
- RL.2.3 Describe how characters in a story respond to major events and challenges.
- RL.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as
 the basis for the answers.
- **RL.4.1** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RL.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing
 inferences from the text
- RI.K.1 With prompting and support, ask and answer questions about key details in a text.
- RI.K.2 With prompting and support, identify the main topic and retell key details of a text.
- RI.1.1 Ask and answer questions about key details in a text.
- RI.1.2 Identify the main topic and retell key details of a text.
- RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate
 understanding of key details in a text.
- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.
- **RI.4.1** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing
 inferences from the text.

Writing

- W.K.6 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question
- **W.1.6** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- W.2.6 Recall information from experiences or gather information from provided sources to answer a
 question.
- **W.3.6** Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

Speaking and Listening

- **SL.K.1** Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- SL.K.2 Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
- SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
- **SL.K.4** Speak audibly and express thoughts, feelings, and ideas clearly.
- **SL.1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups. a. Follow agreed-upon rules for discussions. b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges. c. Ask questions to clear up any confusion about the topics and texts under discussion.
- SL.1.2 Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

- **SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups. a. Follow agreed-upon rules for discussions. b. Build on others' talk in conversations by linking their comments to the remarks of others. c. Ask for clarification and further explanation as needed about the topics and texts under discussion.
- SL.2.2 Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- SL.2.4 Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent and complete sentences.
- **SL.3.2** Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.3.4** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly in complete sentences at an understandable pace.
- **SL.4.2** Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using
 appropriate facts and relevant, descriptive details to support main ideas or themes; adjust speech as
 appropriate to formal and informal discourse.
- **SL.5.2** Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.5.4** Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; adapt speech to a variety of contexts and tasks

Science

- K.P.2 Understand how objects are described based on their physical properties and how they are used.
- 1.E.2 Understand the physical properties of Earth materials that make them useful in different ways.
- 1.L.1 Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.
- 1.L.2 Summarize the needs of living organisms for energy and growth.
- 3.L.2 Understand how plants survive in their environments.
- **4.L.1** Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats.
- 5.L.2 Understand the interdependence of plants and animals with their ecosystem.

Social Studies

- **K.G.1** Use geographic representations and terms to describe surroundings.
- **K.G.2** Understand the interaction between humans and the environment.
- 1.G.2 Understand how humans and the environment interact within the local community.
- **2.G.2** Understand the effects of humans interacting with their environment.
- **3.G.1** Understand the earth's patterns by using the 5 themes of geography: (location, place, human environment interaction, movement and regions).
- 4.G.1 Understand how human, environmental and technological factors affect the growth and development of North Carolina

History of the Christmas Tree

(from www.history.com)

Long before the advent of Christianity, plants and trees that remained green all year had a special meaning for people in the winter. Just as people today decorate their homes during the festive season with pine, spruce, and fir trees, ancient peoples hung evergreen boughs over their doors and windows. In many countries it was believed that evergreens would keep away witches, ghosts, evil spirits, and illness.

In the Northern hemisphere, the shortest day and longest night of the year falls on December 21 or December 22 and is called the winter solstice. Many ancient people

believed that the sun was a god and that winter came every year because the sun god had become sick and weak. They celebrated the solstice because it meant that at last the sun god would begin to get well. Evergreen boughs reminded them of all the green plants that would grow again when the sun god was strong and summer would return.

The ancient Egyptians worshipped a god called Ra, who had the head of a hawk and wore the sun as a blazing disk in his crown. At the solstice, when Ra began to recover from the illness, the Egyptians filled their homes with green palm rushes which symbolized for them the triumph of life over death.

Early Romans marked the solstice with a feast called the Saturnalia in honor of Saturn, the god of agriculture. The Romans knew that the solstice meant that soon farms and orchards would be green and fruitful. To mark the occasion, they decorated their homes and temples with evergreen boughs. In Northern Europe the mysterious Druids, the priests of the ancient Celts, also decorated their temples with evergreen boughs as a symbol of everlasting life. The fierce Vikings in Scandinavia thought that evergreens were the special plant of the sun god, Balder.

Germany is credited with starting the Christmas tree tradition as we now know it in the 16th century when devout Christians brought decorated trees into their homes. Some built Christmas pyramids of wood and decorated them with evergreens and candles. It is a widely held belief that Martin Luther, the 16th-century Protestant reformer, first added lighted candles to a tree. Walking toward his home one winter evening, composing a sermon, he was awed by the brilliance of stars twinkling amidst evergreens. To recapture the scene for his family, he erected a tree in the main room and wired its branches with lighted candles.



Most 19th-century Americans found Christmas trees an oddity. The first record of one being on display was in the 1830s by the German settlers of Pennsylvania, although trees had been a tradition in many German homes much earlier. The Pennsylvania German settlements had community trees as early as 1747. But, as late as the 1840s Christmas trees were seen as pagan symbols and not accepted by most Americans.

It is not surprising that, like many other festive Christmas customs, the tree was adopted so late in America. To the New England Puritans, Christmas was sacred. The pilgrims's

second governor, William Bradford, wrote that he tried hard to stamp out "pagan mockery" of the observance, penalizing any frivolity. The influential Oliver Cromwell preached against "the heathen traditions" of Christmas carols, decorated trees, and any joyful expression that desecrated "that sacred event." In 1659, the General Court of Massachusetts enacted a law making any observance of December 25 (other than a church service) a penal offense; people were fined for hanging decorations. That stern solemnity continued until the 19th century, when the influx of German and Irish immigrants undermined the Puritan legacy.

In 1846, the popular royals, Queen Victoria and her German Prince, Albert, were sketched in the Illustrated London News standing with their children around a Christmas tree. Unlike the previous royal family, Victoria was very popular with her subjects, and what was done at court immediately became fashionable—not only in Britain, but with fashion-conscious East Coast American Society. The Christmas tree had arrived.

By the 1890s Christmas ornaments were arriving from Germany and Christmas tree popularity was on the rise around the U.S. It was noted that Europeans used small trees about four feet in height, while Americans liked their Christmas trees to reach from floor to ceiling.

The early 20th century saw Americans decorating their trees mainly with homemade ornaments, while the German-American sect continued to use apples, nuts, and marzipan cookies. Popcorn joined in after being dyed bright colors and interlaced with berries and nuts. Electricity brought about Christmas lights, making it possible for Christmas trees to glow for days on end. With this, Christmas trees began to appear in town squares across the country and having a Christmas tree in the home became an American tradition

Real or Artificial?

Name

What are the impacts of buying a real Christmas tree versus an artificial tree? Filling out the chart below will help you weigh the pros and cons of each.

How might the choice of purchasing a real or artificial tree affect the following parts of your life, your environment, and your community?	purchasing a real Christmas tree (grown at a local Christmas tree farm)	purchasing an artificial Christmas tree (purchased at a store)
Local wildlife (Red-tailed hawk, red crossbill, song sparrow, garter snake, meadow vole, and much more)		
Healthy soil		
Clean water (local streams, ponds, etc)		
Clean air		
Local farmers		
My community		
My family		
My wallet		

Real or Artificial?

How might the choice of purchasing a real or artificial tree affect the following parts of your life, your environment, and your community?	purchasing a real Christmas tree (grown at a local Christmas tree farm)	purchasing an artificial Christmas tree (purchased at a store)
Local wildlife (Red-tailed hawk, red crossbill, song sparrow, garter snake, meadow vole, and much more)	The habitat at a Christmas tree farm supports many wildlife species that thrive in open, 'early successional" habitat (habitat dominated by young trees and shrubs). Animals will feed, rest, hide, and nest in the conifers. After Christmas, the tree can continue to benefit wildlife—if ground into mulch, it provides habitat for insects and nurtures new plant growth; if placed in a stream, it can create protective habitat for fish, etc.	No benefit to local wildlife.
Healthy soil	A real Christmas tree benefits soil in several ways. At the tree farm, tree roots anchor the soil in place and fallen needles add organic material to the soil. Often, Christmas trees are grown on soils that could not support other crops. When chipped, the real tree can be used as mulch or composted, stabilizing soil to prevent erosion and producing new soil & nutrients.	No benefit to soil health. Artificial trees are not biodegradable. When they break or get old and worn, they linger indefinitely in landfills or produce air pollution when incinerated.
Clean water (local streams, ponds, etc)	Trees absorb carbon dioxide from the atmosphere to produce sugar, through the process of photosynthesis. In this process, they also produce oxygen. So not only do they reduce greenhouse gases responsible for climate change, but they also produce oxygen that we and all other animals need to breathe. Young trees are particularly vigorous photosynthesizers. One acre of Christmas trees produces the daily oxygen requirement for 18 people. Trees also remove dust and pollen from the air (their leaves catch particulates, somewhat like your furnace filter). Trees with year-round leaves, like Christmas trees, do this throughout the year.	Fossil fuels are used to produce the plastic used to make most artificial trees. PVC is the most common material used in modern artificial trees, and the production of PVC releases dioxin, a cancer-causing pollutant. Fossil fuels are burned to manufacture other materials (like metal) used in making artificial trees. Fossil fuels are also burned to transport the artificial trees (some are made in the USA; most are made in Asia—more than 7,000 miles away from New York State).
Clean air	Two key causes of water pollution are soil erosion and urban run-off. Well-managed farms conserve fertile soil and clean water in our communities. On a well-managed farm, vegetated buffers separate farm fields from streams, ponds, and other surface water, which helps filter out pollutants. On Christmas tree farms, soil is particularly stable as compared with annual farm crops, so soil disturbance is minimized. Also, by keeping land in agricultural use, rather than development, Christmas tree farms help reduce the addition of impervious surfaces (driveways, roofs, sidewalks, etc) that add to urban run-off. Some Christmas tree farms use synthetic insecticides and herbicides when growing trees; others do not."	No benefit to clean water. Air pollution caused by production and transportation of artificial trees contributes to water pollution through acid precipitation.
Local farmers	Christmas trees provide a winter cash crop for farmers, and help to diversity their source of income. When farmers get paid more for their products by selling locally, they are less likely to sell their farmland for development. When you buy locally grown products, you help preserve the agricultural landscape.	No benefit to local farmers.
My community	Buying locally keeps money circulating locally. There are about 15,000 commercial Christmas tree growers in the U.S. (more than 850 in NY alone), and over 100,000 people employed full or part-time in the industry.	If the artificial tree is purchased at a local store, then there is a benefit to the local store owner. If the tree is purchased on-line, there is no benefit to the local community.
My family	Going out to buy or cut down a Christmas tree at a local tree farm with friends or family builds relationships and is fun. A real tree makes the home smell great (many conifer species). Fallen needles can be swept up to make scented pillows (and after Christmas, the tree's needles can be removed to make scented pillows).	No fallen needles to clean up. No watering needed. The plastic material used to make many Christmas trees, typically PVC, can be a potential source of lead contamination, particularly as the tree ages.
My wallet	Encourage students to compare the financial costs of real versus artificial trees, both up-front and long-term.	High up-front cost. Maintenance or replacement cost depends on quality of initial product. Many website sources estimate that artificial trees last 5-10 years.