



## The Secret Lives of Trees

Grades K-4

### What to Expect

This program is designed to provide elementary students with a first-hand opportunity to learn about the life cycles, structures, and human uses of one of our most amazing and valuable northern forest organisms: trees. Guided by a professional Teacher/Naturalist, your students will be led on a hike through the Green Mountain Audubon Center's forests, stopping to "meet-a-tree," look for evidence of the many ways in which wildlife use trees as habitat, and observe tree structures up close. We will practice our identification skills by comparing leaves, buds, or seeds of different species, with a focus on four common species: American beech, sugar maple, eastern hemlock, and white ash. Throughout, we will consider how humans rely on trees for resources from food to shelter to clean water. Depending on what we see and your students' interests and questions, each trip will be a little different, but every program delivers plenty of age-appropriate activities that connect to the essential questions and understandings listed below.

### Essential Questions

- How do trees survive, grow, and reproduce?
- How do trees provide habitat for other organisms?
- How do we use trees in our lives?



### Enduring Understandings

- Trees are made up of parts that enable survival.
- Trees undergo stages of development that include "being born," developing into adulthood, reproducing, and dying.
- Trees provide habitat for other organisms.
- Trees are a natural resource for people.

### Vermont Grade Expectations

**S1: Scientific Questioning** – Students work with the Teacher/Naturalist to observe and ask questions about trees (i.e. "I wonder why some tree bark is rough and some is smooth?")

**S30: Structure and Function – Survival Requirements** – Students learn about and observe different structures trees have that allow them to survive, grow, and reproduce.

**S31: Life Cycles and Reproduction** – Students collect, observe, and compare tree seeds and/or flowers, then discuss their role in tree reproduction.

**S35: Food Webs** – Students look for evidence of trees as central parts of forest food webs and being used as habitat by other organisms.

**S49: Natural Resources** – Students observe and identify everyday items that are made from Vermont tree species (i.e. maple syrup, paper, flooring, wooden furniture).

### Key Words

- |             |          |                |                 |
|-------------|----------|----------------|-----------------|
| 1. Seed     | 6. Leaf  | 11. Tree ring  | 16. Simple leaf |
| 2. Seedling | 7. Bud   | 12. Heartwood  | 17. Compound    |
| 3. Sapling  | 8. Trunk | 13. Sapwood    | leaf            |
| 4. Sang     | 9. Root  | 14. Deciduous  | 18. Alternate   |
| 5. Soil     | 10. Bark | 15. Coniferous | 19. Opposite    |



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## Recommended Resources for Trees

### Children's Books

- Arnold, Caroline. *A Walk in the Woods*. Englewood Cliffs, NJ: Silver Press, 1990.
- Arnosky, Jim. *Crinkleroot's Guide to Knowing the Trees*. New York: Simon & Schuster, 1992.
- Arnosky, Jim. *I Was Born in a Tree and Raised by Bees*. New York: Bradbury Press, 1988.
- Beame, Rona. *Backyard Explorer Kit*. New York: Workman, 1989.
- Burnie, David and Peter Chadwick. *Eyewitness: Tree*. New York: Alfred A. Knopf, 1988.
- Burns, Diane L. *Trees, Leaves and Bark*. Minnetonka, MN: NorthWord Press, 1995.
- Carle, Eric. *The Tiny Seed*. New York: Crowell, 1970.
- Cherry, Lynne. *The Great Kapok Tree*. New York: Harcourt Brace Javanovich, 1990.
- Dowden, Anne Ophelia. *The Blossom on the Bough: A Book of Trees*. New York: Thomas Y. Crowell, 1975.
- Florian, Douglas. *Poetrees*. Beach Lane Books, 2010.
- Formento, Alison. *This Tree Counts!* Albert Whitman, 2010.
- Gerber, Carole. *Winter Trees*. Charlesbridge, 2008.
- Gile, John. *The First Forest*. Stevens Point, WI: Worzalla, 1989.
- Jaspersohn, William. *How the Forest Grew*. New York: Greenwillow Books, 1992.
- Karpin, Florence Baker. *Tree Spirits*. Woodstock, VT: Countryman Press, 1992.
- Lauber, Patricia, and Holly Keller. *Be a Friend to Trees* (Let's Read and Find Out). New York: HarperCollins, 1994.
- Lavies, Bianca. *Tree Trunk Traffic*. New York: E.P. Dutton, 1989.
- Locker, Thomas. *Sky Tree*. New York: HarperCollins, 1995.
- Marzollo, Jean and Judith Moffat. *I am a Leaf* (Hello Reader! Science Level 1). New York: Cartwheel Books, 1999.
- Muldrow, Diane. *We Planted a Tree*. Golden Books, 2010.
- Pfeffer, Wendy. *A Log's Life*. New York: Simon & Schuster, 1997.
- Romanova, Natalia. *Once There Was a Tree*. New York: Dial Books, 1985.
- Ross, Wilda. *Who Lives in This Log?* New York: Coward, McCann, 1971.
- Ryder, Joanne. *Hello Tree!* New York: Lodestar Books, 1991.
- Selsam, Millicent E. *Maple Tree*. New York: Morrow Jr. Books, 1968.
- Seuss, Dr. *The Lorax*. New York: Random House, 1971.
- Silverstein, Shel. *The Giving Tree*. New York: Harper & Row, 1964.
- Singh, Rina. *A Forest of Stories: Magical Tree Tales from Around the World*. Barefoot Books, 2003.
- Thornhill, Jan. *A Tree in the Forest*. New York: Simon & Schuster, 1992.
- Tresselt, Alvin. *The Gift of the Tree*. New York: Lothrop, Lee & Shepard, 1992.

### Teacher's Resource and Activity Books

- Parella, Deborah. *Project Seasons: Hands-on activities for discovering the wonders of the world*. Shelburne, VT: Shelburne Farms, 1995.
- Lingelbach, Jenepher and Lisa Purcell. *Hands-on Nature: Information and Activities for Exploring the Environment with Children*. Woodstock, VT: Vermont Institute of Natural Sciences, 2000.