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This colorful book shows the growth of a maple tree from a winged seed to small sapling. It encourages thought about growth and change over time and seasons.

Ages: 18 months to 7 years

ATOS Reading Level: 2.6

Lexile: AD530L

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Red Leaf, Yellow Leaf

How does a tree change throughout the years?

Topics: comparisons, time, classification, sequence, Science, Technology, Engineering, Art, and Math - (STEAM)

Math Connections:

The book *Red Leaf, Yellow Leaf* describes the growth and journey of a maple sapling. Use the book to explore how living things change over time and react to the seasons.

As you read the book with your child, take time to talk about the changes that take place in the story. Talk about what happened first, second, next, last. How did the tree begin? How often was the tree moved? How did the tree change with the seasons?

You may want to try some of these STEAM-inspired ideas:

- Make a collage showing how trees change throughout the year. Create spring, summer, fall, and winter trees. Talk about how you might be able to correctly predict the time of year by looking at the trees around you.
- Go on a leaf hunt. Look for and collect different types, shapes, and colors of leaves. Sort your collection of leaves in different ways. Small leaves, narrow leaves, wide leaves, red leaves...
- Create leaf patterns from your collection of leaves. Consider how the leaf's size, color, and shape can be used to make patterns. Start a pattern and ask somebody to continue it.
- Learn about different types of tree seeds. Talk about where you can find them. What types of tree seeds could you find at the park, in a kitchen, at the grocery store? Find out what types of trees produce edible seeds.
- Collect and grow seeds. Compare how they are the same and different. What differences do you notice in their size and shape? Grow different types of seeds and find out if there are differences in the time it takes them to sprout and their growth rate after sprouting.
- Visit a local nursery. Find out what types of trees grow well in the area where you live. Find out how the cost of a tree differs by variety and size.
- Explore leaf pigments through a leaf chromatography activity. Check out the activity from the Connecticut Science Center in the Online Resources section below.

- Find out why leaves change color in the fall. Find out why leaves are often green for long periods of the year.
- Find out whether all trees change color and lose their leaves in the fall.

Conversations During Daily Routines with Infants and Toddlers:

1. Tummy time - Explore safe red and yellow objects with your baby. Say, "See the red toy. It's next to your hand. It feels soft and furry. I put the yellow toy in front of you. It feels smooth." Talk about what happens when you touch the objects. Talk about the shape, color, and size of the objects. Count them too. "One red toy and one yellow toy. There are two toys."
2. Play time - Play with a group of stacking cups or containers. Encourage your baby to stack the containers, to see how they fit together, and to explore what will fit inside of them. Talk about their explorations. "There is a toy under the container. The cup fits inside of the other cup. You made a stack of two containers, one on the bottom and one on the top." Emphasize where the objects are in relationship to each other while talking about them. Talk about the attributes of the containers. Point out their sizes, shapes, and colors.
3. Snack time - Prepare a red and yellow snack of bananas and strawberries or other red and yellow foods your child enjoys. Count bites. Describe and compare how the foods taste. "The banana is sweet. The strawberry is tart."
4. Outside time - Talk about the trees you see around you. Notice their sizes and compare them. "That tree is short. This tree is much taller." Touch leaves together. Talk about their textures and colors.

Spanish Title: not available

Also Available in: Korean, Japanese

Related Books: *A House for Hermit Crab* by Eric Carle

Find this book at your local library: <https://www.worldcat.org/title/red-leaf-yellow-leaf/oclc/22661788>



Questions for Mathematical Thinking:

1. How old do you think the maple sapling was when it was planted by the family? Why do you think so?
2. What happened between the time that the wind blew seeds to the ground and the family purchased the maple sapling?
3. If you wanted to plant a tree, what would you do first, next, and last?
4. How was the maple tree similar to trees you've seen? How was it different?
5. What signs would you look for to see if a tree was growing?
6. Why do you think fall is many people's favorite time of year? Do you have a favorite time of year? Why?

Vocabulary for Building Math Concepts	among, before, big, in, into, little, measured, onto, tiny, up
Vocabulary for Extending Math Concepts	height, size
Vocabulary for Reading Comprehension	collect, crown, favorite, lowered, marked, nursery, roots, signs, soil, sprouted, sprouts, stems, tended, transplanted, twine, twirled, unfolded, uprooted, whirled, winged, woods, wrapped

Early Math Project Resources:

- [Hug a Tree](#) (English)
- [Leaf Sort](#) (English)
- [Leaf Match](#) (English)

**Spanish Versions coming soon!



Online Resources:

Scholastic Article on Exploring Nature with Your Baby: <https://www.scholastic.com/parents/family-life/creativity-and-critical-thinking/development-milestones/exploring-nature-your-baby.html>

NAEYC Article: Explore the Great Outdoors with Your Child: <https://www.naeyc.org/our-work/families/explore-great-outdoors>

Information about leaf identification and structures, for older children and adults - <https://courses.lumenlearning.com/boundless-biology/chapter/leaves/>

Connecticut Science Center - Science at Play: Leaf Chromatography - <https://ctsciencecenter.org/blog/science-at-play-leaf-chromatography/>

Sci Show YouTube Video - Why Do Leaves Change Colors in the Fall? - <https://www.youtube.com/watch?v=Xk4-611815Q>

Sci Show YouTube Video - Why do Leaves Change Color and Fall - <https://www.youtube.com/watch?v=rwaA1QVsbD6g>

Age Level	Related Preschool Foundations and CA State Standards
Infant/ Toddler	Infant Toddler Foundations https://bit.ly/3ozQios
Infant/ Toddler	Cause and Effect The developing understanding that one event brings about another Spatial Relationships The developing understanding of how things move and fit in space Classification The developing ability to group, sort, categorize, connect, and have expectations of objects and people according to their attributes
Preschool/ TK	Preschool Learning Foundations https://bit.ly/34vEeN3
Preschool/ TK	Algebra and Functions 1.0 Children begin to sort and classify objects in their everyday environment
Grades K-3	California Common Core State Math Standards K-12 https://bit.ly/31No7bP
Kindergarten	Measurement and Data K.MD. 1 Describe and compare measurable attributes
First Grade	Geometry 1.G.1. Distinguish between defining attributes versus non-defining attributes.

