

TREES

A Compare and Contrast Book
By Katharine Hall

TREES

A Compare and Contrast Book

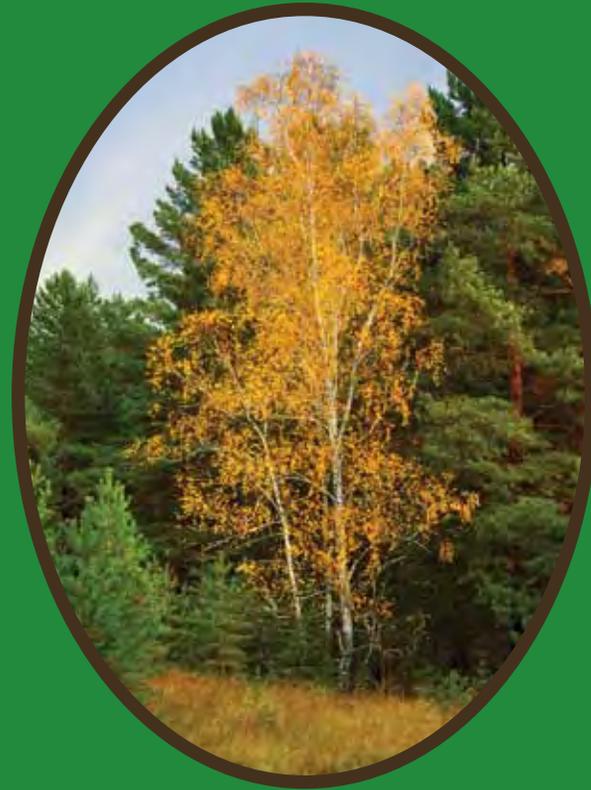
Trees grow in many habitats, all around the world. Some trees are short and some are tall. Some grow in hot deserts and others grow on cold mountains. Some have leaves that are broad and wide and others are short and narrow. Some trees stay green all year round while others have leaves that change color. Compare and contrast the different characteristics of trees through vibrant photographs.

It's so much more than a picture book . . . this book is specifically designed to be both a fun-to-read story and a launch pad for discussions and learning. We encourage adults to do the activities with the young children in their lives both at home and in the classroom. Free online resources and support at www.ArbordalePublishing.com include:

- For Creative Minds as seen in the book (in English & Spanish):
 - Trees Help Me Breathe!
 - What Else do Trees do for Me?
 - Tree Parts
 - Trees and Animals
- Teaching Activities (to do at home or school):
 - Reading Questions
 - Language Arts
 - Science
 - Math
 - Geography
- Interactive Quizzes: Reading Comprehension, For Creative Minds, and Math Word Problems
- English and Spanish Audiobooks
- Related Websites
- Aligned to State, Common Core & NGSS Standards
- Accelerated Reader and Reading Counts! Quizzes
- Lexile and Fountas & Pinnell Reading Levels

eBooks with Auto-Flip, Auto-Read, and selectable English and Spanish text and audio are available for purchase online.

Thanks to Jaclyn Stallard, Manager of Education Programs at Project Learning Tree (www.plt.org) for verifying the accuracy of the information in this book.



Katharine Hall is a life-long nature lover and avid reader. She hopes the *Compare and Contrast* series will help children use critical thinking skills to explore and learn about the natural world around them. In addition to *Trees*, Katharine has written *Polar Bears and Penguins* and *Clouds*. Katharine and her husband live in California with their dog, Tonks, and two mischievous cats.



Katharine Hall

TREES

A Compare and Contrast Book By Katharine Hall



Trees are plants with a woody stem, called a trunk.



Trees can plant their roots in water . . .



... on rocks ...



... or in soil. The soil near this tree has eroded so that the roots are exposed.

For Creative Minds

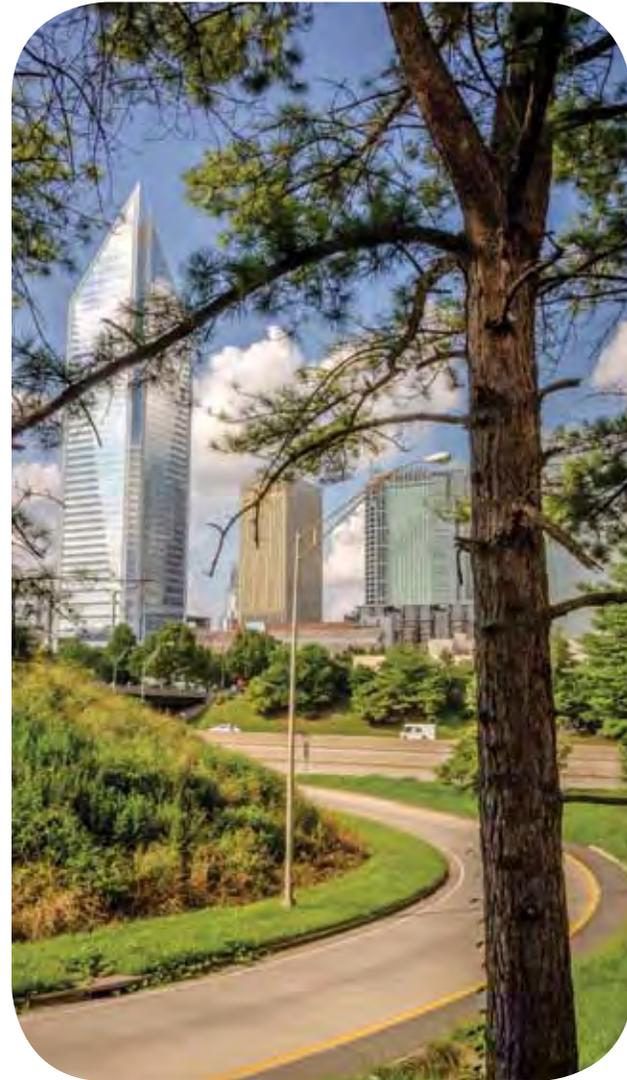
This For Creative Minds educational section contains activities to engage children in learning while making it fun at the same time. The activities build on the underlying subjects introduced in the story. While older children may be able to do these activities on their own, we encourage adults to work with the young children in their lives. Even if the adults have long forgotten or never learned this information, they can still work through the activities and be experts in their children's eyes! Exposure to these concepts at a young age helps to build a strong foundation for easier comprehension later in life. This section may be photocopied or printed from our website by the owner of this book for educational, non-commercial uses. Cross-curricular teaching activities for use at home or in the classroom, interactive quizzes, and more are available online. Go to www.ArbordalePublishing.com and click on the book's cover to explore all the links.

Trees Help Me Breathe!

Humans rely on trees and other plants for the air we need to live! Air is made of a mixture of different gases. Most of the air is nitrogen, oxygen and carbon dioxide. When humans breathe in air, we absorb oxygen into our lungs and then exhale carbon dioxide.

Unlike animals that must eat to get energy, plants make their own energy through a process called photosynthesis. To complete photosynthesis, plants need carbon dioxide, water, and sunlight. Plants take in carbon dioxide from the air and water from the ground, through their roots. Chlorophyll in the leaves absorbs energy from the sunlight. Plants use the sun's energy to create a sugary food made from water and carbon dioxide. After absorbing carbon dioxide, plants create oxygen and release it into the air for humans and other animals to breathe.

One adult tree can absorb as much as 48 pounds (21.7 kg) of carbon dioxide each year. Some trees can also help filter out pollution from the air. Trees in large cities have to be highly resistant to air pollution. Other trees cannot survive in heavily polluted areas.



What Else do Trees do for Me?

Living trees are necessary for humans to live and breathe. But after a tree dies, it becomes a natural resource that can be used by humans in many different ways! Look at the items below and see if you can tell which are made using parts of old trees.

cork



book



violin



chair



railroad crossties



pencils



picnic tables



notebook



playground woodchips



Answer: All of them!

Tree Parts

Trees have many different parts that allow the plant to grow, live, and reproduce. Match the description to the image.



A.



B.



C.



D.

1. Like all living things, trees must reproduce. Trees grow **flowers** that create pollen. Pollen is carried from one flower to another by wind, water, and insects. After the flower has been pollinated, it produces a seed. Many tree seeds grow inside fruits, nuts, or cones. A seed can be planted and grow into a whole new tree.
2. Trees absorb energy from sunlight through their **leaves**. Flat and wide leaves take in more energy from the sun. Small and scaly leaves are better at surviving harsh weather conditions.
3. The **trunk** supports the weight of the tree and holds the branches, flowers, and leaves up off the ground. Many animals find or build their homes in trees. Some animals find or burrow holes in the trunk to make a nest inside the tree. Other animals build nests supported by the tree's branches.
4. Trees absorb water and nutrients through their **roots**. The roots are usually below the ground and anchor the plant in place so it doesn't fall over or blow away. Some trees have roots that extend deep into the soil. Other trees have shallow root systems that branch out to all sides just at or under the surface.

Answers: 1-A, 2-C, 3-D, 4-B

Trees and Animals



Trees are an important part of the habitat for many kinds of animals. Many animals, including humans, eat food that comes from trees. Some animals eat bark or leaves. Others eat the fruits and nuts that trees produce.



Trees provide shade that keeps an area cool. Humans and other animals often rest under a tree to escape from the hot sun. In the heat of summer, shade from trees can mean a difference of 20°F (11°C)!

Many animals build their homes in and around trees. Spiders spin their webs from tree to tree. Rodents like gophers and mice dig holes near the tree's roots. This bird, a weaver finch, is building a nest in the branches of a tree.



Predators like this jaguar can wait in a tree for their prey and then pounce on them from above!

Prey animals like this squirrel can scurry up into a tree to escape from a predator on the ground.



To my sisters, Rachel and Helen, and all the friends who have climbed trees with me through the years.—KH
 Thanks to Jaclyn Stallard, Manager of Education Programs at Project Learning Tree (www.plt.org) for verifying the accuracy of the information in this book.

Library of Congress Cataloging-in-Publication Data

Hall, Katharine, 1989-
 Trees : a compare and contrast book / by Katharine Hall.
 pages cm. -- (Compare and contrast books)
 ISBN 978-1-62855-453-3 (english hardcover) -- ISBN 978-1-62855-461-8 (english pbk.) -- ISBN 978-1-62855-477-9 (english downloadable ebook) -- ISBN 978-1-62855-493-9 (english interactive dual-language ebook) -- ISBN 978-1-62855-469-4 (spanish pbk.) -- ISBN 978-1-62855-485-4 (spanish downloadable ebook) -- ISBN 978-1-62855-501-1 (spanish interactive dual-language ebook) 1. Trees--Juvenile literature. I. Title.
 QK475.8.H35 2014
 582.16--dc23

2014011129

Translated into Spanish: Árboles: un libro de comparación y contraste Lexile® Level: 690
 key phrases for educators: antonyms/synonyms, compare/contrast, EE (Environmental Education), habitat, plants, weather/climate

Bibliography:

Kuhns, Michael. "What is a Tree?." Utah State University. Accessed December 2013. <<http://forestry.usu.edu/htm/treeid/what-is-a-tree-youth>>.
 "Trees and Vegetation." United States Environmental Protection Agency. Accessed January 2014. <<http://www.epa.gov/heatiland/mitigation/trees.htm>>.

Thanks to Terry Hall for the use of his photographs for this book, to Andrew F. Kazmierski for allowing the purchase of his photograph through shutterstock, and to the remaining photographers and organizations for releasing their images into the public domain.

Photo	Photographer or Organization
Cover	Terry Hall
Title Page	Terry Hall
September in the Forest	Larisa Koshkina
Mangrove	Steve Hillebrand, USFWS
Rocks and Roots	Lilla Frerichs
Tree Roots	Larisa Koshkina
Forest, Spanish Moss	Steve Hillebrand, USFWS
Umbrella Thorn Acacia Tree	Gary M. Stolz, USFWS
Joshua tree & stone landscape	Andrew F. Kazmierski, Shutterstock
Denali trees in winter	Tim Rains, National Park Service
Bonsai	Michael Drummond
Redwood	National Park Service
Autumn Landscape	Larisa Koshkina
Evergreens in Winter	Terry Hall
Maple Leaves	Ryan Hagerty, USFWS
Conifer and Snow	Terry Hall
Forest background	George Gentry, USFWS
Skyline and City Streets	Alex Grichenko
Book	George Hodan
Wooden Chair	Petr Kratochvil
Cork	Kajoch Adras
Spiral Notepad	Karen Arnold
Colored Pencils	Petr Kratochvil
Picnic table	Darren Lewis
Playground	Peter Griffin
Tracks to nowhere	Scott Meltzer
Violin	Katrina Joyner
Flowering Tree	Jeanette ONeil
Various Fruits	Petr Kratochvil
Nuts	Petr Kratochvil
Jaguar on Tree Trunk	Lilla Frerichs
Squirrel	George Hodan
Picnic Table Under Tree	Lilla Frerichs
Weaver Bird Weaving Nest	Lilla Frerichs



Manufactured in China, June 2014
 This product conforms to CPSIA 2008
 First Printing

Arbordale Publishing
 Mt. Pleasant, SC 29464
www.ArbordalePublishing.com



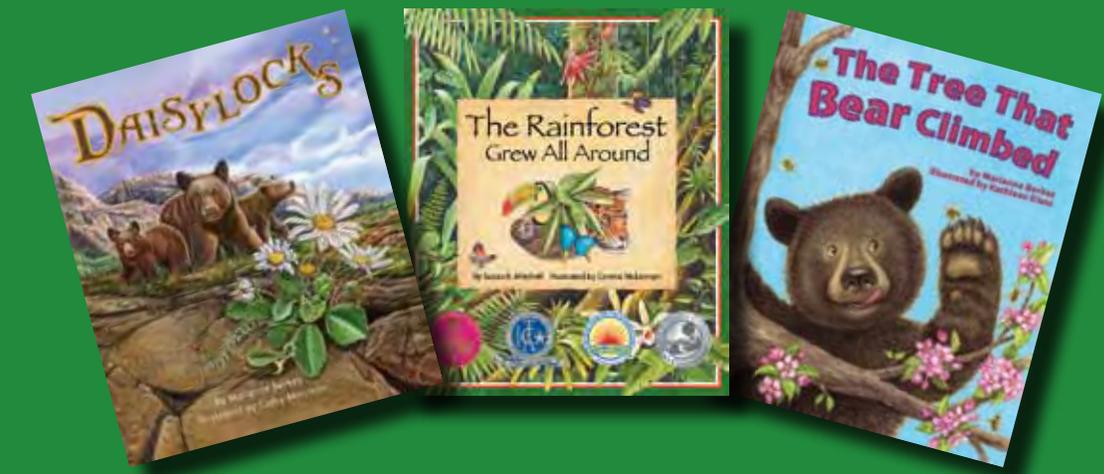
Text Copyright 2014 © by Katharine Hall

The "For Creative Minds" educational section may be copied by the owner for personal use or by educators using copies in classroom settings

If you enjoy this book,
 look for other books in this series:



and other Arbordale books about plants:



Includes 4 pages of
 learning activities.
 Look for more free activities
 online at
ArbordalePublishing.com