



APRIL 22, 2020

EARTH DAY 2020

2020 MARKS THE 50TH YEAR OF EARTH DAY!



WWW.KELLOGGARDEN.COM



EARTH DAY AT HOME

EVERY LITTLE BIT MAKES A DIFFERENCE!



LIVING THE EARTH DAY LIFE

You might be wondering, "What can I do for Earth Day from home this year?"

Every day is earth day and each day we can make an impact through what we purchase, throw away or don't throw away, and how we treat our outdoor spaces. This year we have an opportunity to take a closer look at home to see if there is more that we can be doing.

This is also a great year to make Earth Day an interactive yet fun teaching day for our young ones. We have filled our Earth Day Activities Guide with tons of useful information, quizzes, and activities.

Post images and videos of how you are celebrating Earth Day! Be sure to use the hashtag [#OrganicBuildsLife](#) and we will be following and resharing all things Earth Day the entire week, starting Monday, April 20th.



*"The creation
of a thousand
forests is in
one acorn."*

*~Ralph Waldo
Emerson*

<https://kids.kiddle.co/Tree>

<https://www.sciencekids.co.nz/sciencefacts/plants/trees.html>

<https://blog.pachamama.org/8-things-didnt-know-pine-trees>

THE FOREST FOR THE TREES

Why are trees important?

- Trees can live for thousands of years.
- The way a tree grows through different seasons can be seen by growth rings in the wood, they can even be used to determine the age of a tree.
- Planting trees can help prevent erosion.
- Trees improve water quality by slowing and filtering rainwater and protecting aquifers and watersheds.
- Trees are able to communicate and defend themselves against attacking insects. They can also signal danger to other trees so they can start their own defense.
- Conifers grow in 6 of the 7 continents on Earth. That only excludes Antarctica!
- Pine cones have genders. Male pine cones shed pollen and female pine cones make seeds. When the wind blows pollen into the female cones, you guessed it, the seeds become pollinated.
- Trees lower air temperature by evaporating water in their leaves.
- Trees produce oxygen and reduce the amount of carbon dioxide in the atmosphere.
- Tree roots usually grow underground, helping keep soil stable and providing it with water and important nutrients.

TREE TALK

TEST YOUR TREE KNOWLEDGE.

TAKE THE QUIZ

What percentage of all terrestrial plant and animal species in the world live in tropical rainforests?

- 10%
- 32%
- 50%
- 70%

How many trees does it take to provide a day's supply of oxygen for 4 people?

- 1
- 10
- 50
- 100

Approximately how many pounds of carbon dioxide can one mature tree absorb a year?

- 20
- 48
- 50
- 120



ACTIVITIES

1. **Count the number of trees in your yard.**
2. **Calculate the number of people your trees can provide oxygen for.**
3. **Calculate the approximate amount of carbon your trees are absorbing.**
4. **Plant a new tree.**

TREES

PEOPLE

CARBON

NEW TREES

RESOURCES

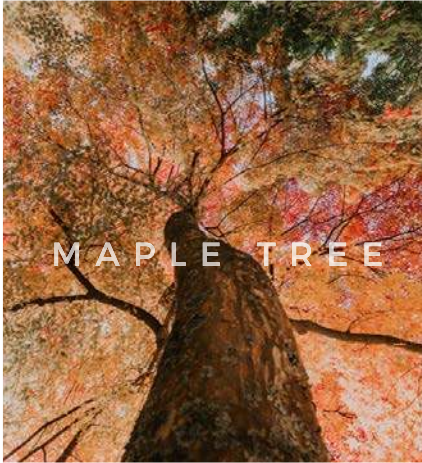
[Tree Planting Guide](#)

[6 Benefits of Planting Trees](#)

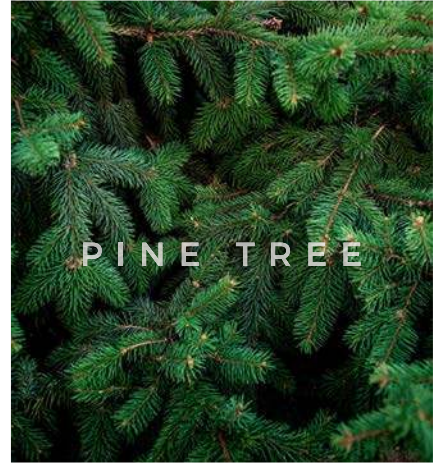
[Why Planting Trees Helps The Environment](#)

[Children's Books On Gardening](#)

TREE ADVENTURES



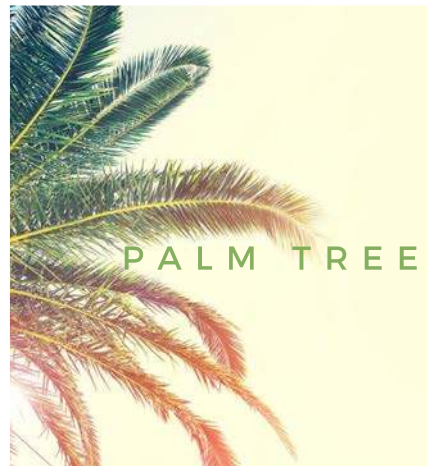
IDENTIFY THE
TREES IN
YOUR YARD:



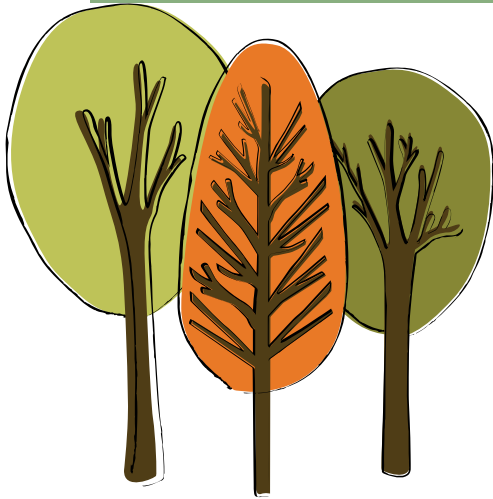
HOW DO YOUR
TREES
SUPPORT WILD
LIFE?



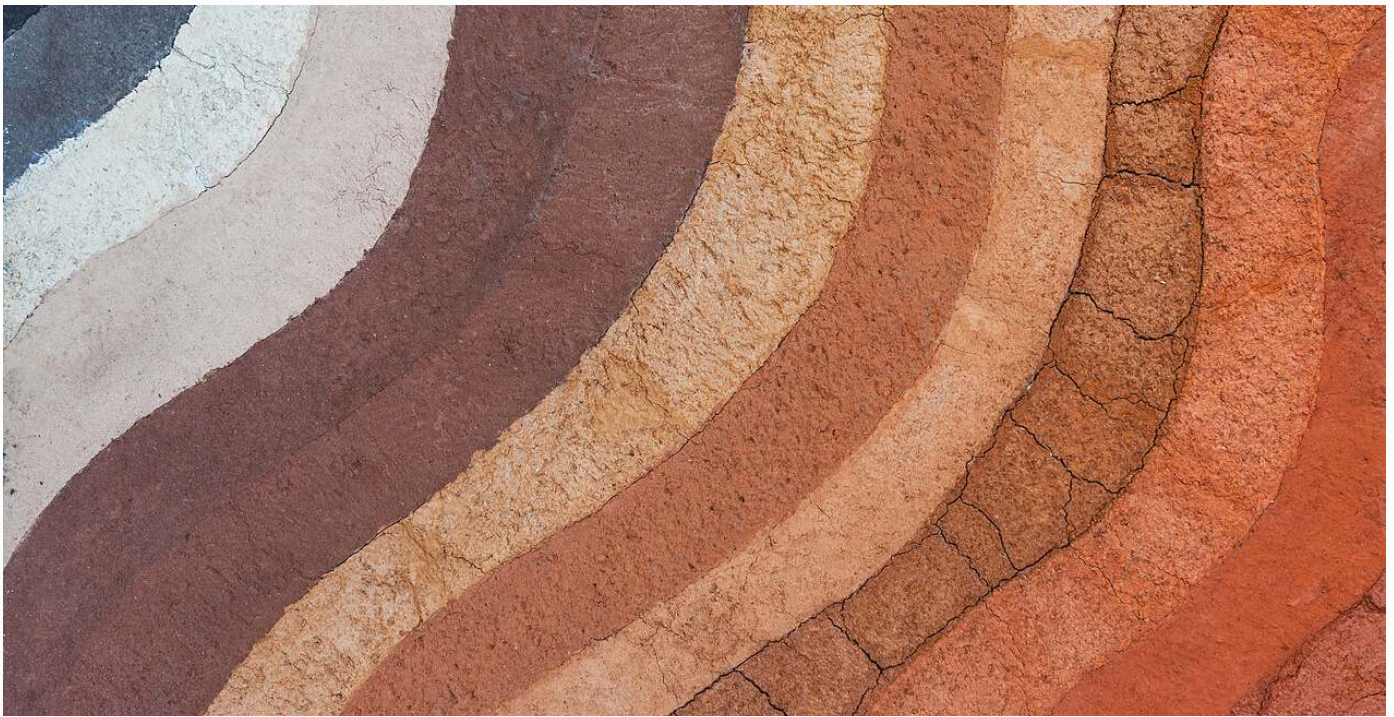
HOW DO YOUR
TREES
BENEFIT THE
EARTH?



NAME THE
TALLEST TREE
IN THE
WORLD:



TREE NOTES



Land, then, is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals.

~Aldo Leopold

RESOURCES

[Life In The Soil Video](#)

LIFE IN THE SOIL

Why is soil important?

- There are 70,000 different types of soil.
- 10% of the Earth is covered in soil.
- Soil is alive & filled with tiny bugs.
- A single gram of healthy soil contains millions of organisms including earthworms, nematodes, mites, insects, fungi, bacteria and actinomycetes.
- Soils provide habitat for animals that live in the soil (such as groundhogs and mice) to organisms (such as bacteria and fungi), that account for most of the living things on Earth.
- Soil needs to be covered with vegetative matter. Soil is being swept and washed away 10 to 40 times faster than it is being replenished. Soils act as a living filter to clean water before it moves into an aquifer.
- Soils modify the atmosphere by emitting and absorbing gases (carbon dioxide, methane, water vapor) and dust.
- Soils process recycled nutrients, including carbon, so that living things can use them over and over again.

<https://soilsolution.org/10-soil-facts/>
<https://www.soils4kids.org/about>

EARTHWORMS

Worms are cooler than you think!



EARTH MOVERS

- There are well over 6,000 different types of earthworms around the world.
- Earthworms have no ears or eyes and breathe through their skin.
- Worms love to eat both soil and fallen leaves. They eat their body weight in these materials each day.
- Worms can dig down over 6 feet underneath the surface of the soil.
- Most worms live between 1 and 2 years. However, they can live up to 8 years.
- Worms can crawl both backward and forward in the soil.

ENCOURAGE EARTHWORMS TO VISIT YOUR GARDEN:

Worms aerate the soil, allowing better circulation. They also eat organic material, so a big worm population means your soil is rich in nutrients.

Look for earthworm casts or burrows on the surface of damp soil.

- Dig up a chunk of soil 6 inches deep.
- Count the worms you find in the chunk.
- Five is the magic number, but three is still good.

Earthworm benefits go beyond aeration. These friendly critters leave behind secretions that improve tilth, as well as adding organic matter, bacteria, plant nutrients and enzymes via their casts.



SOILSAVVY

TEST YOUR SOIL KNOWLEDGE.

TAKE THE QUIZ

How much of the earth is covered in soil?

- 7%
- 10%
- 40%
- 70%

A single gram of soil contains how many organisms?

- Hundreds
- Thousands
- Millions
- Hundrends of millions

How far can earthworms dig down?

- 2 Feet
- 6 Feet
- 10 feet
- 30 Feet



ACTIVITY

ROOT IT OUT

Healthy root systems mean healthy plants and healthy soil.

- Pick a plant to dig up, such as a weed.
- Dig to root depth and pull up the plant.
- Look at the root development.
- White roots with fine strands are healthy, while brown, mushy roots are a sign of drainage issues.
- Short, stunted roots can mean disease or root-eating pests.

Roots depend on healthy soil, air and water to grow. Healthy root systems indicate healthy, well-aerated soil.

RESULTS

RESOURCES

[8 Simple Soil Tests](#)

[Why Garden Worms are Important](#)

[Worm Composting](#)

[Why Worm Poop Is Good](#)

ANSWERS: 10%, Millions, 6 Feet

SOIL SCIENCE

SOIL ORGANISMS

Healthy soil is full of animal life.

- Dig a hole at least 6 inches deep.
- Watch the interior of the hole for 4 minutes.
- Count the number and species of critters you see like spiders, ground beetles & centipedes.
- Anything less than 10 means your soil is low on animal life.

A strong population of critters keeps down pests and disease, so “the more, the merrier.”

ANALYSIS:



ANALYSIS:



COMPACTION

This is compressed, hard soil.

- Stick a wire into the soil.
- Mark the depth when the wire bends.
- Ideally, the wire will penetrate the soil by at least a foot or more before bending.

Compacted soil restricts water and nutrient availability. It also prevents beneficial critters like earthworms from moving around plant roots.



WATER INFILTRATION

Water infiltration is the process by which water reaches plant roots.

- Remove the bottom of a coffee can.
- Push it into the soil, leaving 3 inches above ground.
- Fill the visible portion with water. Mark the water height.
- Time how long it takes the soil to absorb the water.
- Repeat until the absorption rate slows and the time to absorption is consistent.
- If slower than ½ - 1 inch per hour your soil is likely compacted.

Good water infiltration not only gets water to your plant's roots, it helps prevent erosion and runoff. It also improves aeration.

ANALYSIS:





THE BUZZ ABOUT BEES

Why are bees important?

- There are 9 different families of bees and approximately 20,000 known species.
- There are over 250 known species of bumble bee.
- Bees have two pairs of wings, the larger fore wings and the smaller hind wings.
- Honeybees are important pollinators for flowers, fruits and vegetables.
- Honeybees fly at a speed of around 25km or 15.5 miles per hour and beat their wings 200 times per second.
- A bee's buzz comes from rapid wingbeats which creates wind vibrations.
- Bumblebees are capable of vibrating their wing muscles and thorax (the middle segment of their body) while visiting flowers.
- Honeybees produce honey from pollen and nectar of the plants they pollinate. Honey is stored in honeycomb as a food source for the colony.
- Each bee has 170 odorant receptors. They use this to communicate within the hive and to recognize different types of flowers when looking for food.
- Carpenter bees are solitary bees. They build nests just for themselves. They get their name from their ability to drill through wood.
- A queen bee can live up to five years. In summer months she can lay up to 2,500 eggs a day.

Bee Water Wise:

BEES NEED WATER

Create a bee watering hole. Bees can't swim, so they must be able to stand where it's dry and drink.

Good systems include small fountains, shallow bird baths, or pot bottoms filled with water and pebbles or corks. These allow the bees to stand and drink.

RESOURCES

[Attracting Bees & Butterflies to the Garden](#)

[Hummingbird feeders 101](#)



The Power of Pollinators



TAKE THE QUIZ

What percentage of crops are dependent on bee pollination in the United States?

- 10%
- 20%
- 65%
- 90%

How many species of bees are there?

- 100
- 900
- 1,200
- 20,000

What plants do bees and other pollinators help grow?

- Lettuce, Spinach, Kale
- Oranges, Strawberries, Apples
- Carrots, Radish, Parsnip
- Wheat, Corn, Rice

What are the names of the three members of a bee colony?

ACTIVITY

DIY BEE HOUSE

What you need:

- **Deep blocks**, tubes, and reeds. For bees that nest in holes that are a ¼” or wider, the tube or reed needs to be about 6” long.
- **Breathable materials**.
- Material for an **overhanging roof** to keep water from entering the nest opening.
- **Backing** to keep parasites and pests out.
- **Screws**. Do not glue parts, they need to be cleaned.
- Situate it to get **morning sun**, and to be approximately 5 feet off the ground.

<https://www.kelloggarden.com/blog/honey-bees-and-butterflies/mason-bee-houses/>





*No garden truly
blooms until
butterflies have
danced upon it.*

~ K D'Angelo

RESOURCES

[Plants that Entice Pollinators](#)

[How to Make Your Yard a Certified Wildlife Habitat](#)

BEAUTIFUL BUTTERFLIES

Why are butterflies important?

- Scientists estimate that there are between 15,000 and 20,000 different species of butterflies.
- Butterflies are insects.
- A butterfly's lifecycle is made up of four parts, egg, larva (caterpillars), pupa (chrysalis) and adult.
- Butterflies attach their eggs to leaves with a special glue.
- Most caterpillars are plant eaters (herbivores).
- Butterflies have four wings.
- Butterflies have taste receptors on their feet.
- Butterflies can live in the adult stage from anywhere between a week and a year, depending on the species.
- Butterflies often have brightly colored wings with unique patterns made up of tiny scales.
- Most butterflies feed on nectar from flowers.
- Every year monarch butterflies will travel a great distance (sometimes over 4000 km), females will lay eggs and a new generation of monarchs will travel back, completing the cycle.

<https://www.sciencekids.co.nz/sciencefacts/animals/butterfly.html>

The Power of Pollinators



TAKE THE QUIZ

What is a butterfly?

- Animal
- Bird
- Insect
- Mammal

How many wings do butterflies have?

- 2
- 3
- 4
- 6

What are butterfly wings made of?

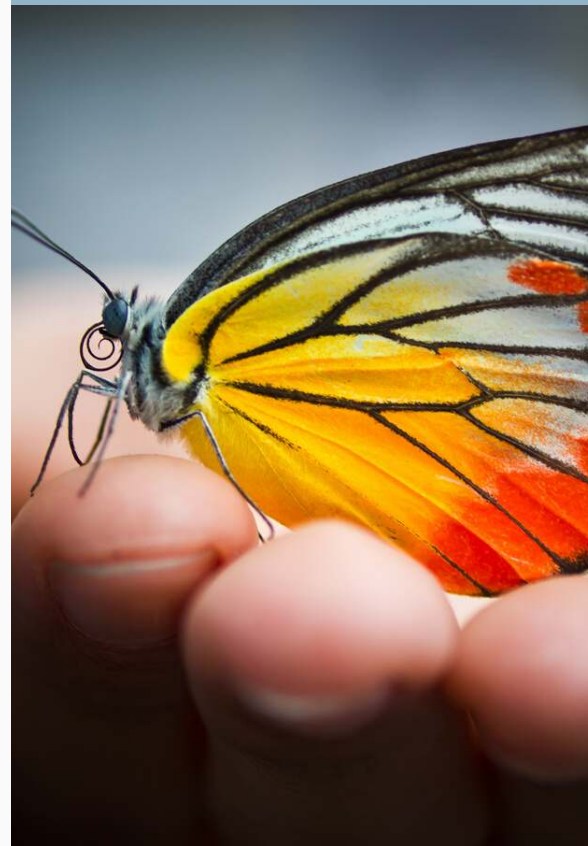
- Chiton
- Hair
- Scales
- All of the above

What do butterflies feed on?

- Vegetables
- Nectar
- Leaves
- Flower Stems

“Butterflies
are self
propelled
flowers.”

ROBERT A. HEINLEIN



FLYING FLOWERS



HOW MANY
BUTTERFLIES
CAN YOU
FIND?



FIND A
CATERPILLER



FIND NECTAR
PLANTS FOR
BUTTERFLIES.



FIND HOST
PLANTS FOR
BUTTERFLIES.

BUTTERFLY HOST PLANTS: Milkweed, Dill, Fennel, Ornamental Grasses, Daisy, Sunflowers, Snapdragons, Aspen Trees.

BUTTERFLY NECTAR FLOWERS: Yarrow, Beebalm, Phlox, Daisy, Sunflowers, Purple Coneflowers, Pentas.

[*Download the plantnet app to help you identify plants.](#)





“Even the tiniest of flowers can have the toughest roots.”

~ Shannon Mullen

RESOURCES

[Hummingbird Feeders 101](#)
[Feeding Hummingbirds](#)

BIRD BUDDIES

Why are birds important?

- When pollination is carried out by birds, it is called "Ornithophily." Hummingbirds, spiderhunters, sunbirds, honeycreepers and honeyeaters are the most common species of birds who pollinate.
- The smallest birds in the world, hummingbirds weigh as little as 2.5 grams, the weight of a penny.
- Hummingbirds can fly forward, backward and hover.
- The chicken is the most common species of bird found in the world.
- An average hummingbird's heart rate is more than 1,200 beats per minute. In comparison, a human's average heart rate is only 60 to 100 beats per minute at rest.
- Birds have hollow bones which helps them to fly.
- Birds have feathers, wings, lay eggs and are warm blooded.
- There are around 10000 different species of birds worldwide.
- The Ostrich is the largest living species of bird in the world, typically weighing 140 – 290 lbs

<https://www.scienceforkidsclub.com/bird-facts.html>

https://ucanr.edu/sites/PollenNation/Meet_The_Pollinators/Birds/



SO FLY

IDENTIFY THE BIRDS IN YOUR AREA.

MAKE A LIST OF THE FOOD, WATER, AND SHELTER THEY HAVE AND WHAT YOU CAN DO TO PROVIDE WHAT THEY NEED.

WHY ARE THE BIRDS IMPORTANT FOR YOUR HOME & COMMUNITY?

FOOD

WATER

SHELTER

PURPOSE

BIRDS



FULL RESOURCE LIST

[Hummingbird feeders 101](#)
[6 Benefits of Planting Trees](#)
[Why Planting Trees Helps The Environment](#)
[Children's Books On Gardening](#)
[How to Make Your Yard a Certified Wildlife Habitat](#)
[Mason Bee Houses](#)
[Creating a Pollinator Friendly Garden](#)
[Top Plants That Attract Pollinators](#)
[Types of Pollinators](#)

[8 Simple Soil Tests](#)
[Why Garden Worms are Important](#)
[Worm Composting](#)
[Why Worm Poop Is Good](#)
[Tree Planting Guide](#)

[Life In The Soil Video](#)

APPS

Plantnet * iNaturalist * eBird
* iRecord Butterflies *
Flowerchecker



OTHER GUIDES

