

Keep Texas Wild

LEAVE IT TO LEAVES

All living creatures depend on them.

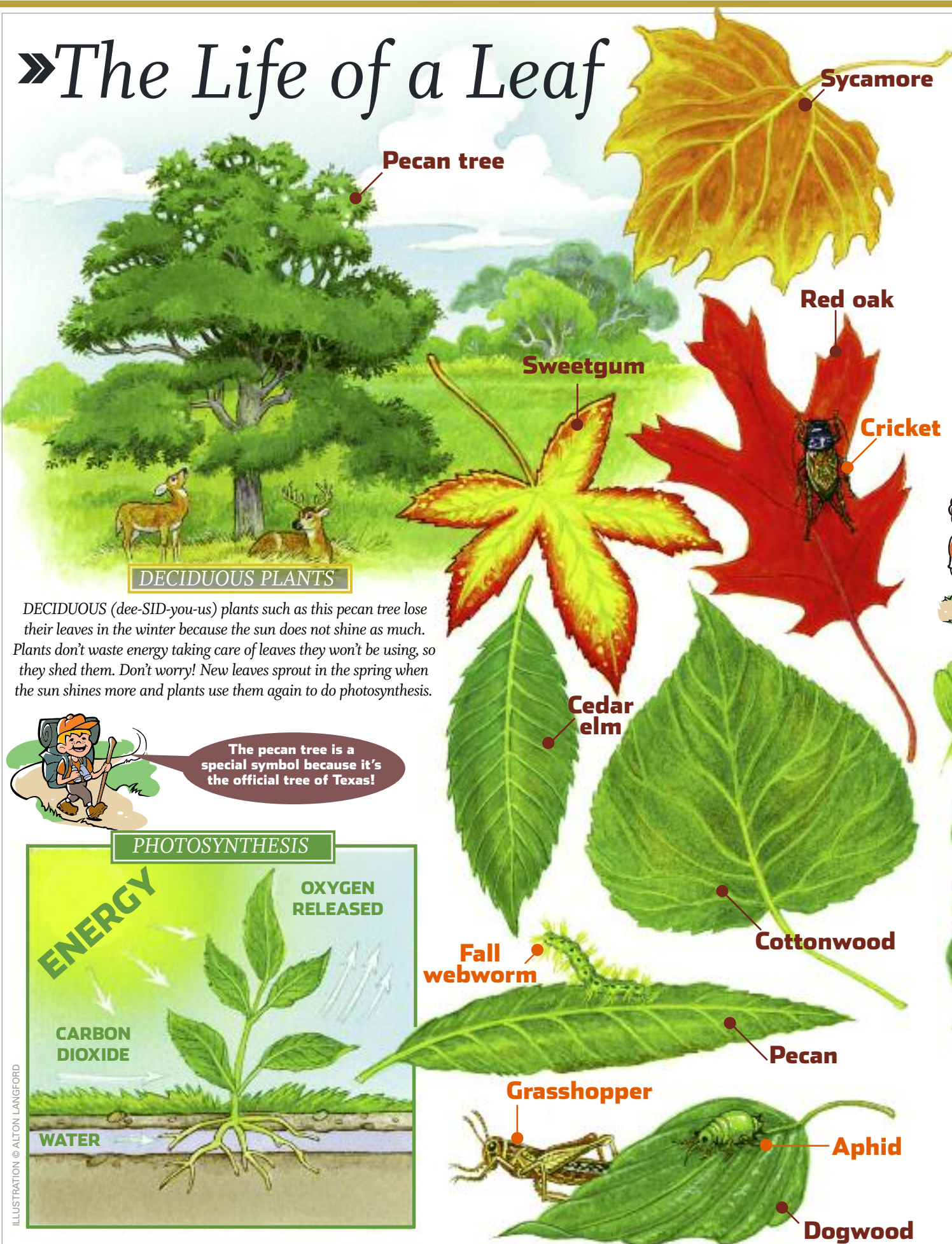
» FOOD & OXYGEN FACTORIES

LEAVES DO A LOT MORE THAN JUST PROVIDE SHADY PLACES to get out of the hot sun. Leaves come in all shapes and sizes, but no matter what they look like, their most important job is to make food for plants and oxygen for other living creatures (including us!). We call this job "photosynthesis" (foto-SIN-th-sis). Photosynthesis uses water, carbon dioxide from the air and energy from the sun to make a sugary food for the plant called "glucose." Hungry plants use some of the glucose right away, but they store most of it for later. No other living things except green plants can make their own food out of sunshine. And only green plants can make the oxygen we all need to survive!

Short horned grasshopper on a leaf

PHOTO © CLIVE VARLACK

»The Life of a Leaf



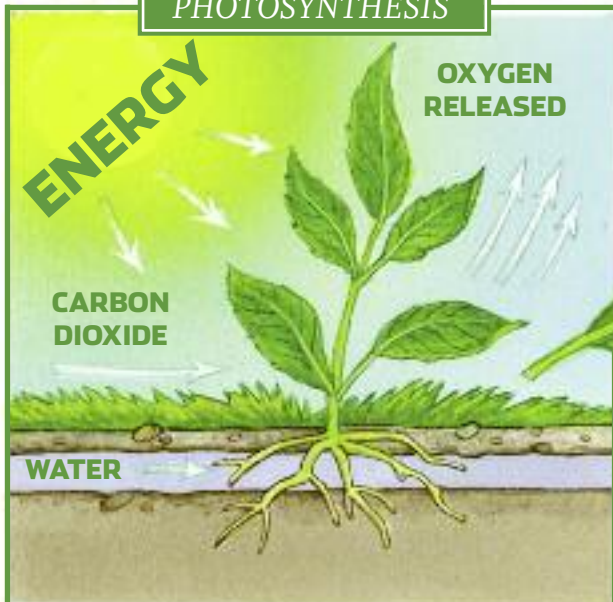
DECIDUOUS PLANTS

DECIDUOUS (dee-SID-you-us) plants such as this pecan tree lose their leaves in the winter because the sun does not shine as much. Plants don't waste energy taking care of leaves they won't be using, so they shed them. Don't worry! New leaves sprout in the spring when the sun shines more and plants use them again to do photosynthesis.



The pecan tree is a special symbol because it's the official tree of Texas!

PHOTOSYNTHESIS



Big-toothed maple

Black webspinner fly

Loblolly pine

LEAF COLORS

LEAF COLORS come from “pigments.” The green color in leaves comes from the pigment chlorophyll. Other pigments make leaves orange, yellow, red and purplish.

Leaves always have orange and yellow pigments in them, but we can't see these colors until the fall, when leaves stop making green chlorophyll. Leaves can also turn other colors once nights cool down and they start making other pigments.

WHY LEAVES CHANGE COLOR

AS WE GET CLOSER to winter, days get shorter and nights get longer. When this happens, leaves get the message to stop making chlorophyll. Why? Because when winter comes they will not have as much sunshine for photosynthesis and will not need chlorophyll. Without chlorophyll, leaves are not green.

Want to see some spectacular leaf colors? Check out Lost Maples State Natural Area in autumn!

Sawfly

Mesquite

Post oak

American elm

ANATOMY OF A LEAF

A

B

C

A EPIDERMIS - This see-through skin protects the leaf on top and on bottom and helps it breathe.

B VEINS - Veins carry water and the food the leaf makes (called “glucose”) to other parts of the plant.

C MESOPHYLL - This is where green chlorophyll changes sunlight into food for the plant.

Evergreen bagworm

EVERGREEN PLANTS

EVERGREENS like this loblolly pine do not lose their leaves in the winter because a waxy coating protects them. They also have a special liquid inside that helps keep their leaves from freezing. That means the tree does not have to use a lot of food to take care of these leaves.

Did you know that what we call a “pine needle” is really a leaf? And all those brown pine needles under evergreens didn't fall off because of winter. They fell off so new, healthier leaves could take their place.

Walking stick

LEAVES WORK TO...

PROVIDE OXYGEN

Leaves give off oxygen. That gives us and other living things oxygen to inhale. This is why we call forests “the lungs of the earth.”

CLEAN THE AIR

Leaves absorb carbon dioxide, which is what people, animals and cars exhale. It's bad to have too much carbon dioxide in the air. Plants get rid of some of it for us.

MAKE NEW SOIL

When leaves fall, they decompose into tiny pieces. These pieces add stuff to the dirt that makes plants grow better.

PROVIDE FOOD

Many animals and insects eat leaves. See how many Texas insects you can find on these pages.



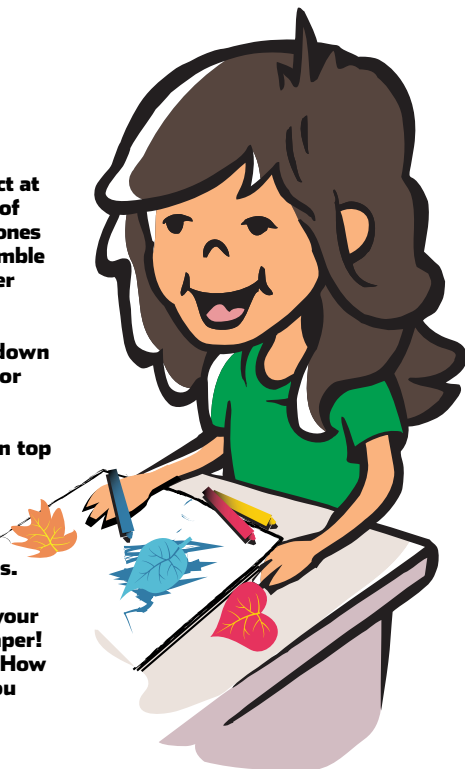
Spike's Activity Page



>> WILD ART

RUB A LEAFY LIKENESS!

- 1) Go for a walk and collect at least four different kinds of leaves. Find the freshest ones you can so they don't crumble when you rub crayons over them.
- 2) Put your leaves face down on a piece of cardboard or paper.
- 3) Put a piece of paper on top of them.
- 4) Rub over the area where the leaves lie with different colors of crayons.
- 5) Watch as imprints of your leaves appear on your paper! How are they the same? How are they different? Do you see the veins?



>> WILD MATH

IF THE VEINS from one elm leaf were put end to end, they would measure 700 feet long!

Round this number to the nearest thousandth:

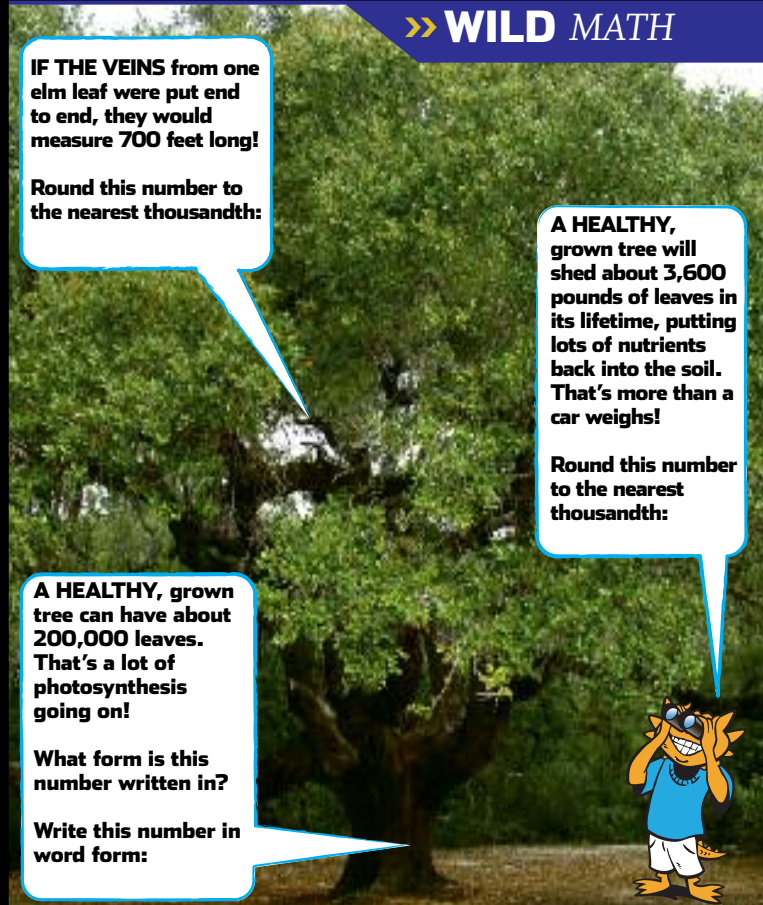
A HEALTHY, grown tree will shed about 3,600 pounds of leaves in its lifetime, putting lots of nutrients back into the soil. That's more than a car weighs!

Round this number to the nearest thousandth:

A HEALTHY, grown tree can have about 200,000 leaves. That's a lot of photosynthesis going on!

What form is this number written in?

Write this number in word form:

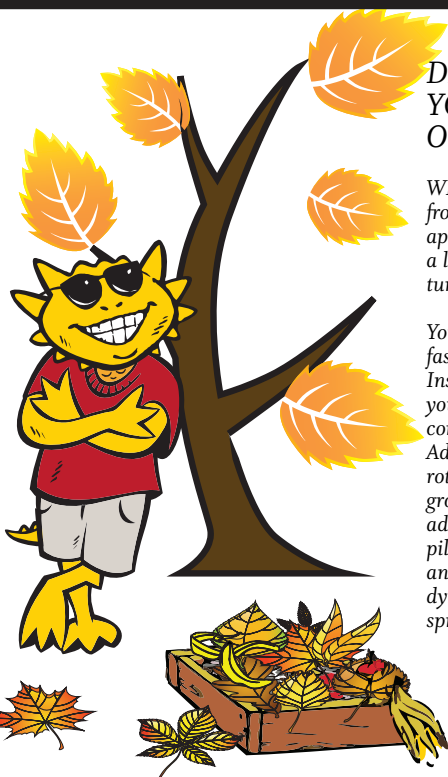


>> KEEPING IT WILD

DID YOU KNOW THAT YOU CAN MAKE DIRT OUT OF LEAVES?!

WHEN LEAVES and other stuff from plants decompose, they fall apart into teeny-tiny pieces. It takes a long time, but eventually they'll turn into soil.

You can help them do this a lot faster by creating a "compost pile." Instead of throwing the leaves from your yard into the trash, start a compost pile and put them there. Add other plant materials like rotten fruit, vegetables and coffee grounds from your kitchen. Keep adding things and mixing up your pile (that's important!). Start now and you just might have some dynamite dirt in time for your spring garden!



>> NEXT MONTH: Wetlands

TEACHER RESOURCE

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