
The Magic and Mystery of Trees
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Parts of a Tree
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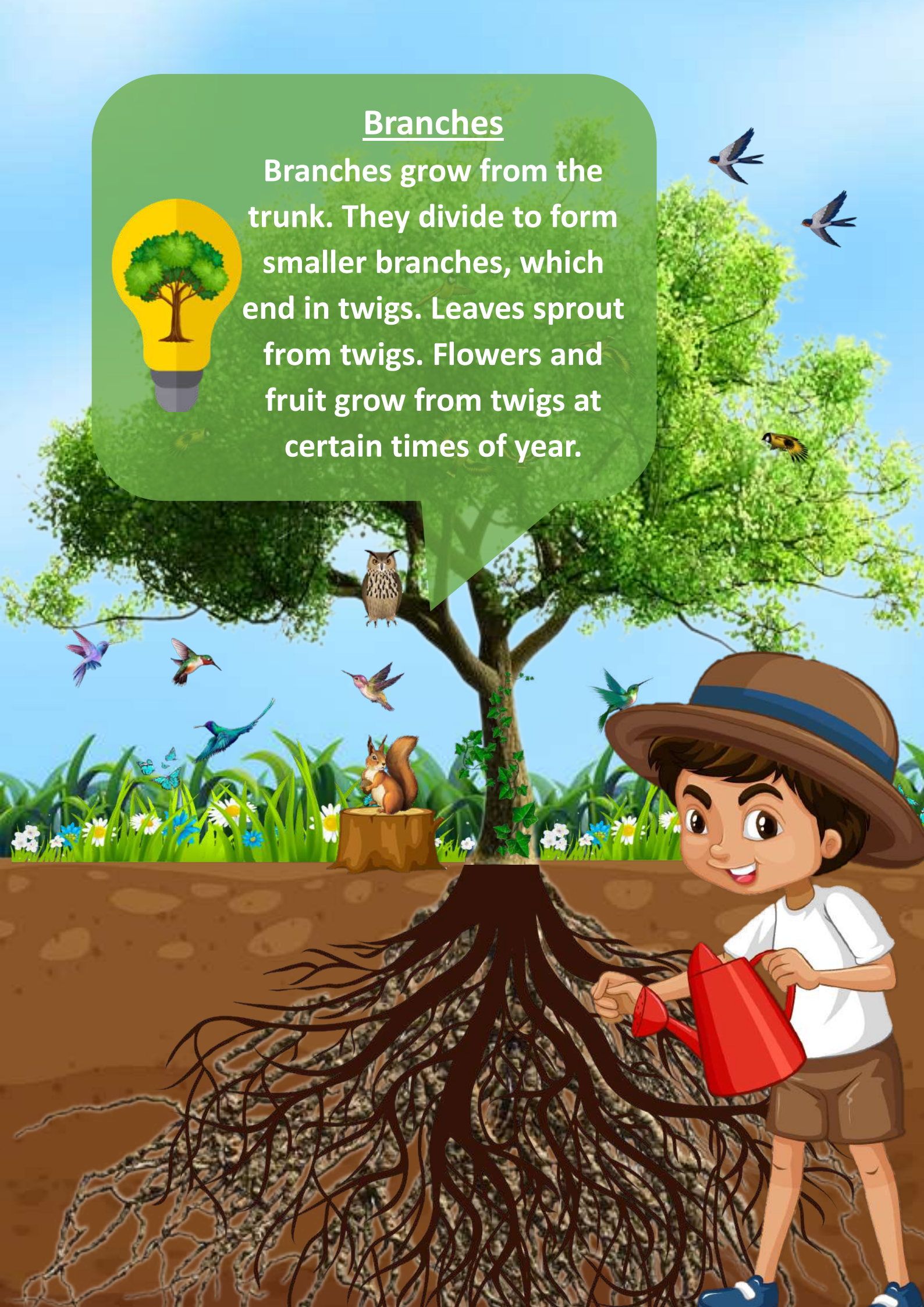
Wherever they grow, all trees have the same parts: roots, a trunk, branches and leaves.

Branches

Branches grow from the trunk. They divide to form smaller branches, which end in twigs. Leaves sprout from twigs. Flowers and fruit grow from twigs at certain times of year.




Canopy
High above the ground, twigs and leaves weave together to form a dense, dark blanket called the canopy.

Trunk

The sturdy trunk grows from the ground. It is very strong and supports the weight of the tree's branches.

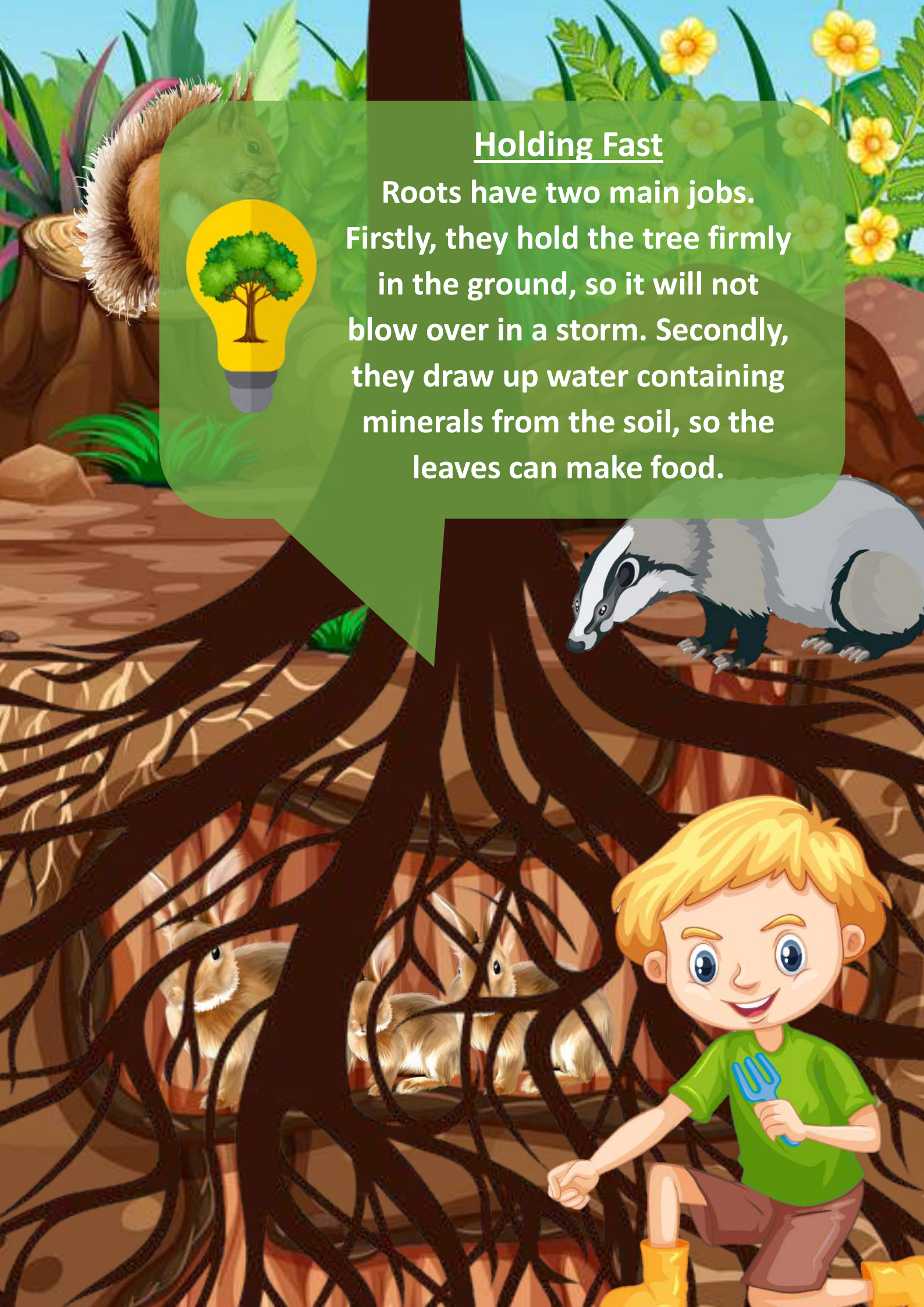

Roots
Underground roots hold the tree steady in the ground.


Bark
Bark is a thin, tough layer that covers the trunk.


Stump
When a tree is cut down or its trunk breaks, it leaves behind a stump.

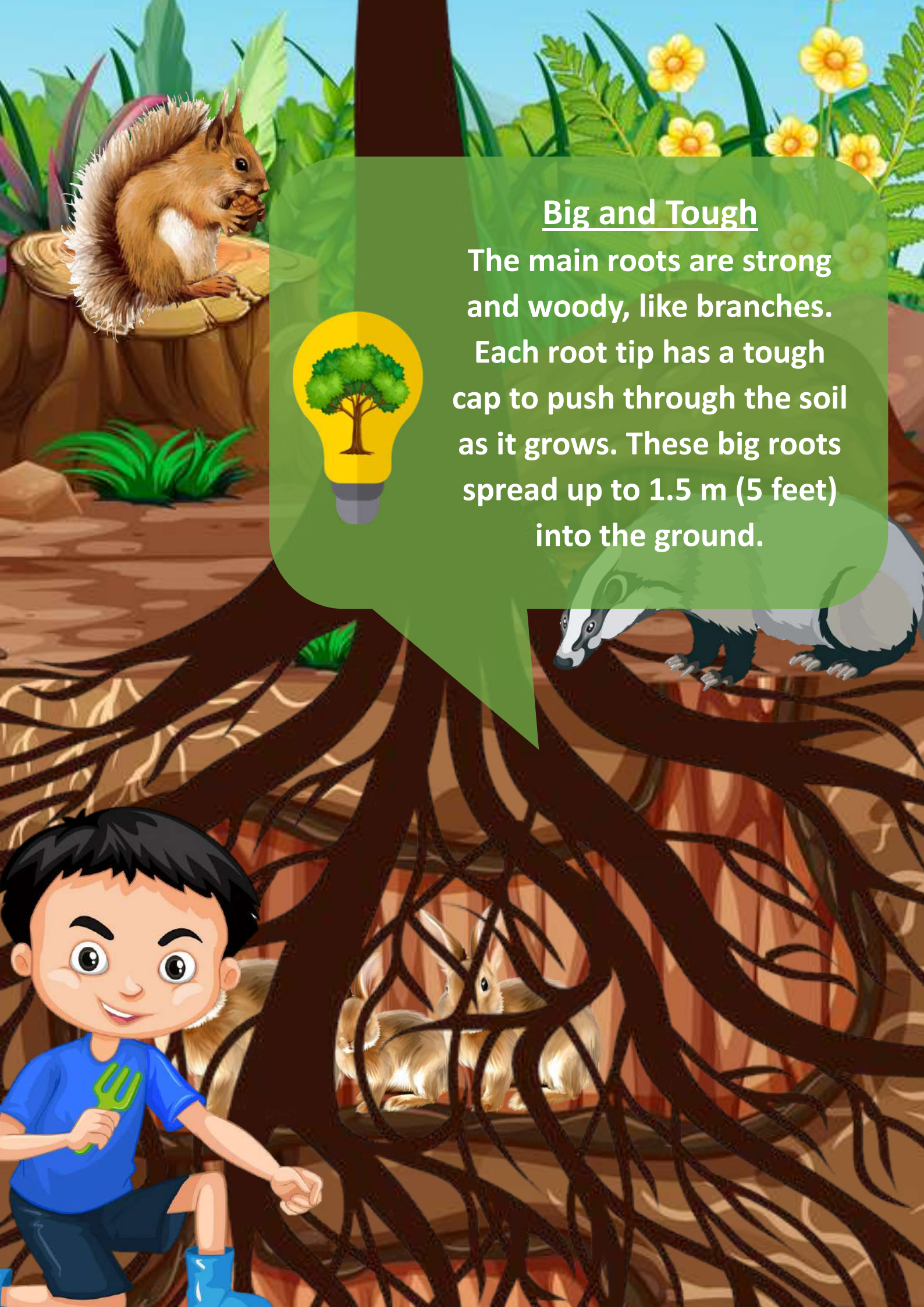
Secret Roots

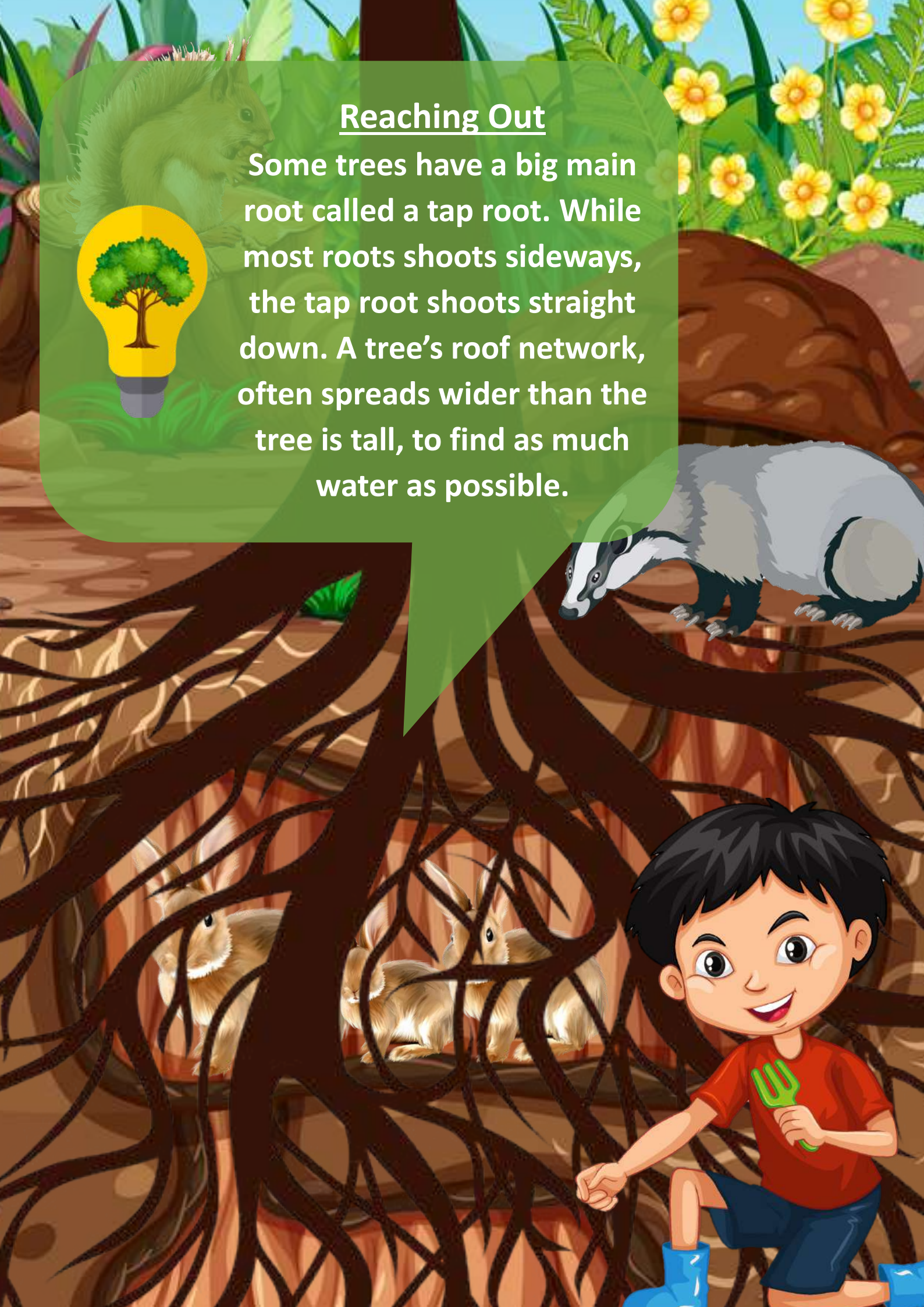
In the damp, dark world below, roots spread through the soil to form a woody network. Up to a third of the tree is hidden underground.


Holding Fast
Roots have two main jobs. Firstly, they hold the tree firmly in the ground, so it will not blow over in a storm. Secondly, they draw up water containing minerals from the soil, so the leaves can make food.


Trees do most things slowly, but they drink very fast! Water travels up the roots, and a big tree can suck in hundreds of litres of water from the soil every day.


Water Seekers
The main roots divide into smaller ones. The smallest ones at the end of the root are called rootlets. They are covered in fine hairs that can sense water.


Big and Tough
The main roots are strong and woody, like branches. Each root tip has a tough cap to push through the soil as it grows. These big roots spread up to 1.5 m (5 feet) into the ground.


Reaching Out
Some trees have a big main root called a tap root. While most roots shoots sideways, the tap root shoots straight down. A tree's roof network, often spreads wider than the tree is tall, to find as much water as possible.


Cosy Homes
Rabbits and tiny creatures such as worms and beetles live among the roots.


Trunk and Bark

A tree’s trunk supports its branches, just like your skeleton holds up your body. The trunk has to be very sturdy to support the huge weight of all the branches. A tree simply wouldn’t be a tree without a trunk!

Inside the Trunk

At the centre of the trunk is the heartwood.
This grew when the tree was young. It is surrounded by sapwood, which contains tiny tubes that carry water from the roots to the leaves.

Inside the Trunk

Between the sapwood and the outer bark is a very thin layer called the phloem. This carries sugar from the leaves to the rest of the trees.

Tre Rings

Tree rings provide clues about the tree's history.
Wide rings show years when the tree grew quickly.
Narrow rings show when they tree grew only a little,
because conditions were too cold or dry.

All About Bark

Bark, like this peeling birch bark, is the outer layer of the trunk. It stops the tree drying out, and also protects it from insects and fungi.

All About Bark

Young trees have smooth bark. As trees get older, their bark cracks, peels, and becomes wrinklier, like this scaly tree.

All About Bark

Try making bark prints by rubbing crayons onto a piece of paper placed on bark. The texture will come through.


Leaves

Next time you are outdoors, take a close look at a leaf. Leaves are very special, as if it's in the leaves that the tree works its magic by making its own food.


Trees can’t move from place
to place, but they can very
slowly turn their leaves to
face the sun.

Light Catchers

Broadleaved trees spread their wide, flat leaves to capture as much light as possible. Each leaf is like a mini solar panel, soaking up energy from the sun.

Water Pumpers

Veins are like tiny pipelines running through the leaf. They take in water from the tubes in the tank's sapwood and carry food made by the leaves to the rest of the tree.

Veins

Leaf Shapes

Each tree has leaves with a slightly different shape. They can be long and thin, or wide and round. Flat, round leaves are good at catching sunlight, but also lose more water.

Leaf Colour

Leaves are green because they contain a natural colour called chlorophyll. In autumn the green fades, and other colours in the leaves can be seen. They turn yellow, orange and brown.


Green Leaf in Summer
Fading to Yellow
Dry Brown Leaf in Winter
Leaf Turns Orange in Autumn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