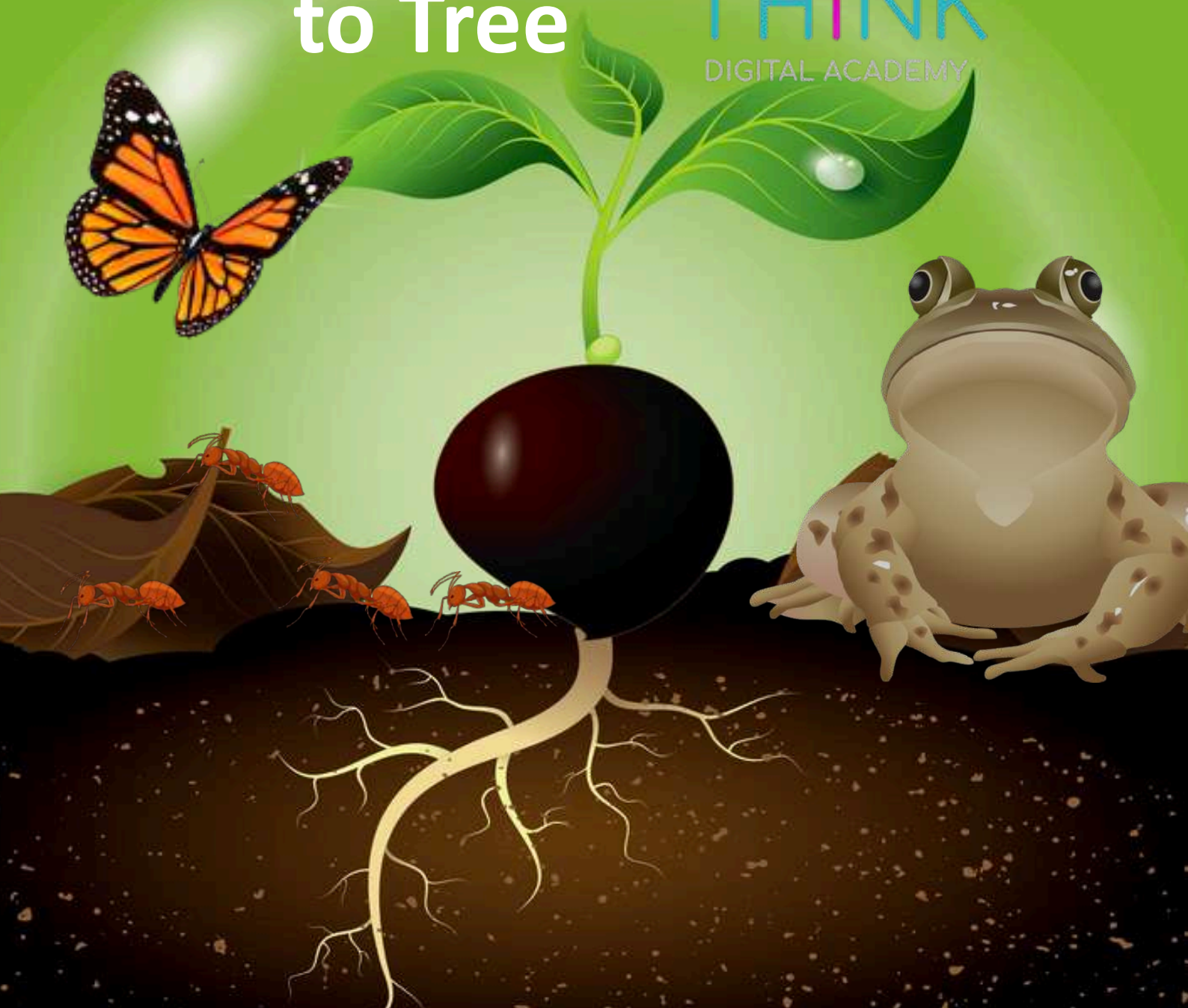




# The Magic and Mystery of Trees

By Jen Green

## From Seed to Tree



Trees are the tallest living things in the world, but they are born from tiny seeds. Growing to their full height can take 100 years. Here's how a young oak sprouts from a little acorn, to grow taller than a house.





# Sprouting

If a seed lands in moist soil in a warm, light place, big changes start to happen. The seed swells and the case splits open. A tiny root pokes down to take in water.



Seeds are full of food to keep the seedling going until it can make its own food.

# Getting Taller

A small, green shoot pushes up through the soil. Once the first leaves unfurl in the sunlight, the young plant can make its own food. A new, little tree is born.



A young tree is called a seedling or sapling



# Growing Older

Humans grow during their childhood, but we stop when we become adults. Trees are different – they carry on growing. What's more, they can live at least five times as long as we do. At 100 years old, many trees are still youngsters!



## Taller and Wider

As the tree gets older, its upwards growth slows and finally stops when it reaches full height. But if there is space, its branches and trunk carry on growing wider. The trunk of a big, old tree grows about 2.5 cm (1 inch) wider each year.



**Oak trees  
keep getting  
wider for 500  
to 600 years.**





# Life After Death





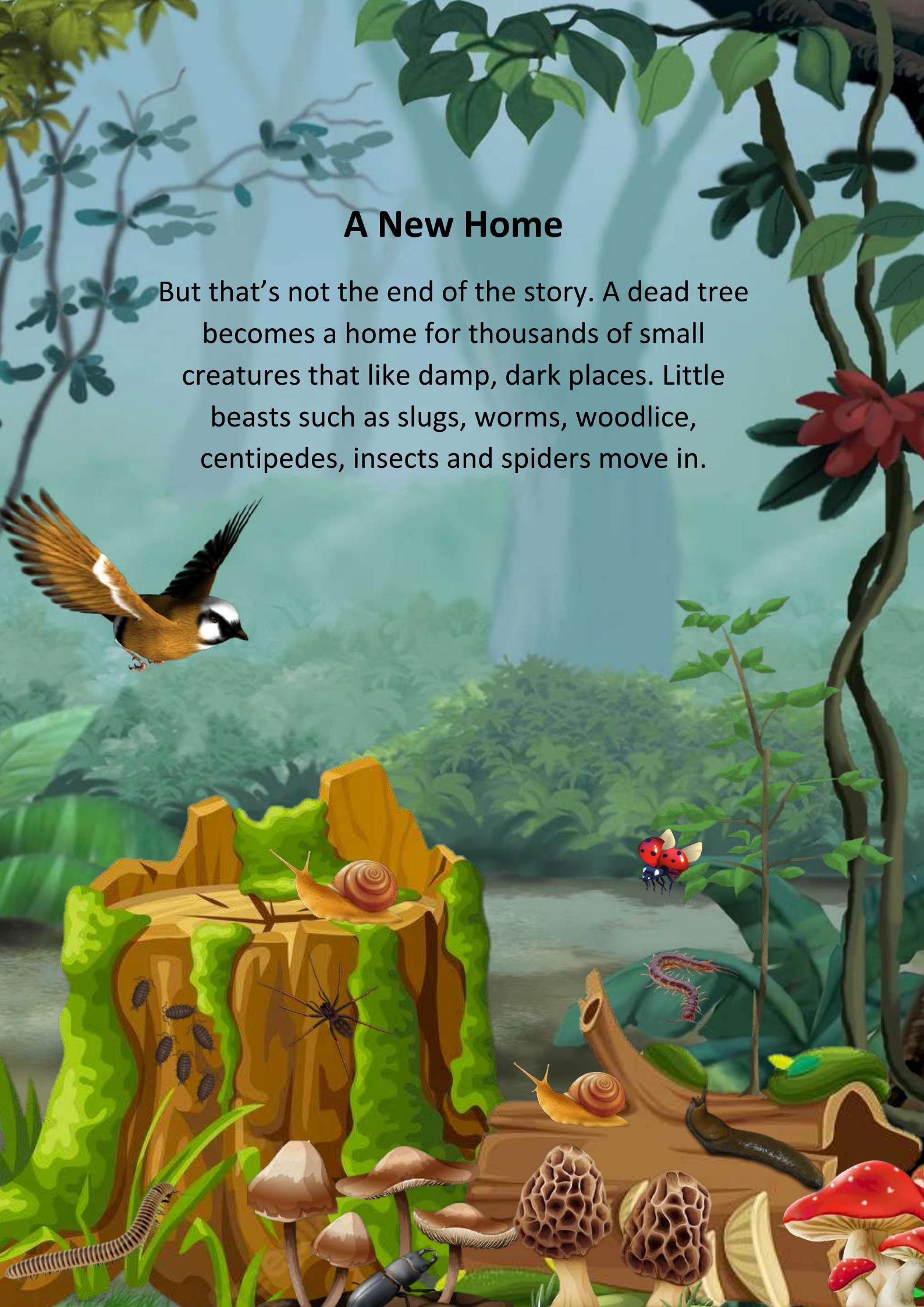
No living thing goes on forever. Trees can live for hundreds of years, but in the end even they grow old and die. Winds shake the dead tree until its trunk cracks and it comes crashing to the ground.





## A New Home

But that's not the end of the story. A dead tree becomes a home for thousands of small creatures that like damp, dark places. Little beasts such as slugs, worms, woodlice, centipedes, insects and spiders move in.





Up to a third of all  
creatures that live  
in the forest like to  
live in, or eat,  
rotten wood.

Brown  
Garden Snail

Woodlice

Centipede

Common  
Garden Slug

Garden Spider

Millipede





## Recycling Nutrients

Minibeasts and fungi feast on rotten wood and break it down. This allows the raw materials that formed the tree to return to the soil. These nutrients feed young trees and other plants, giving them a good start in life.





Beetles lay their eggs under the bark. When the grubs hatch, they feed on the rotten wood.

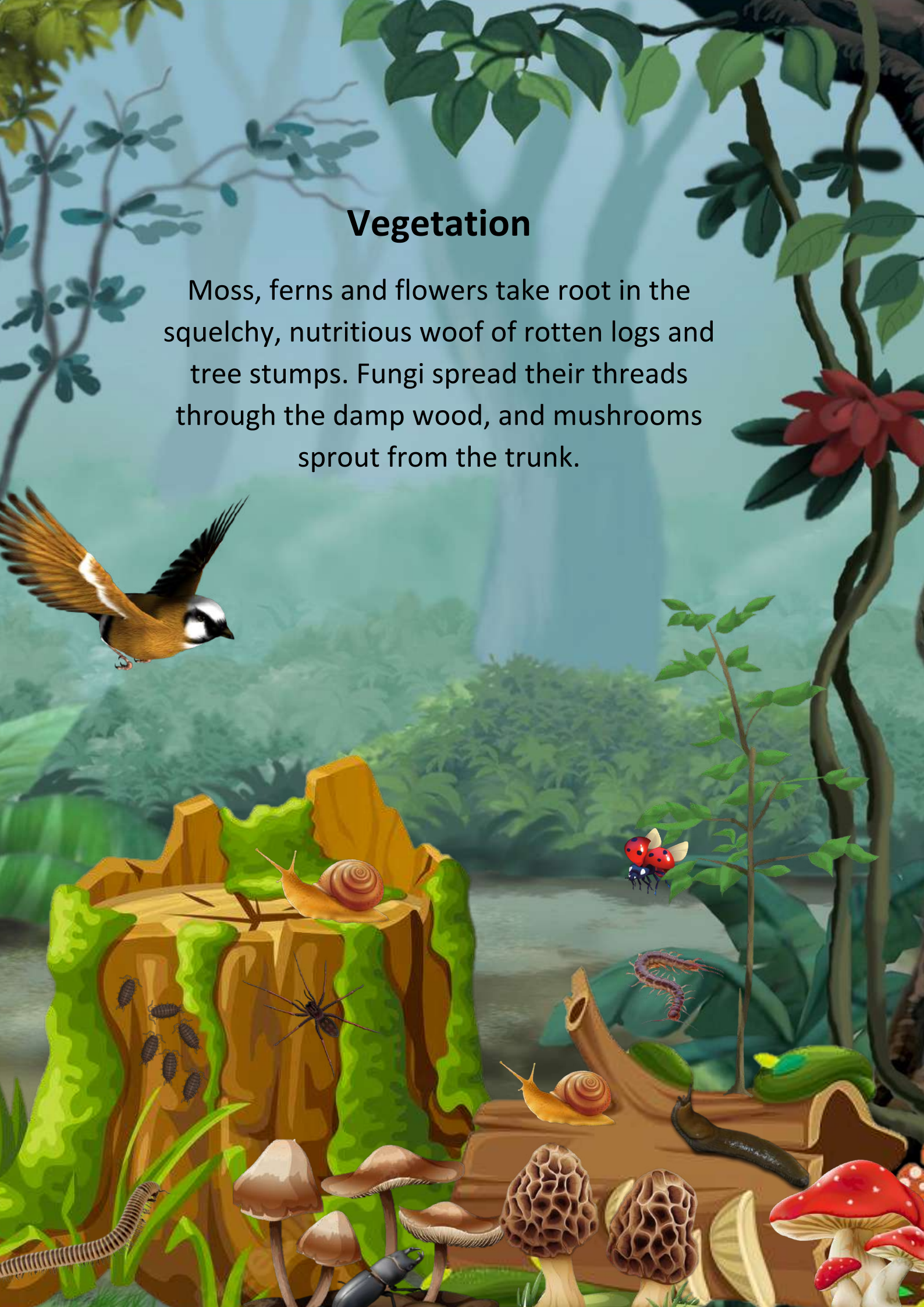
Ground  
Beetle





## Vegetation

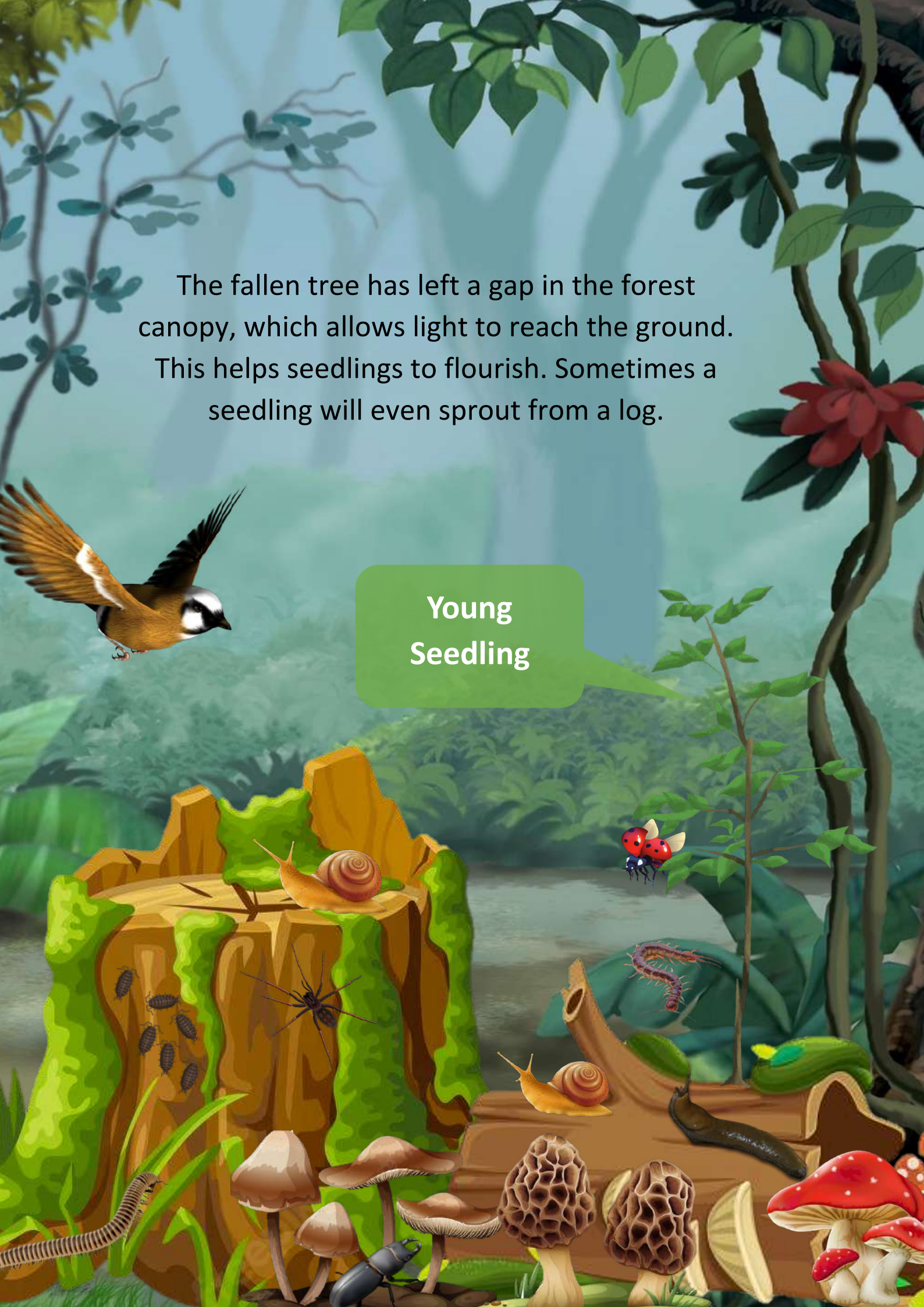
Moss, ferns and flowers take root in the squelchy, nutritious woof of rotten logs and tree stumps. Fungi spread their threads through the damp wood, and mushrooms sprout from the trunk.





The fallen tree has left a gap in the forest canopy, which allows light to reach the ground. This helps seedlings to flourish. Sometimes a seedling will even sprout from a log.

Young  
Seedling





# Tree Partners





Trees grow and change so slowly that it's hard to tell how busy they really are. Year after year, trees stand still and silent, but there's a lot going on under the surface.

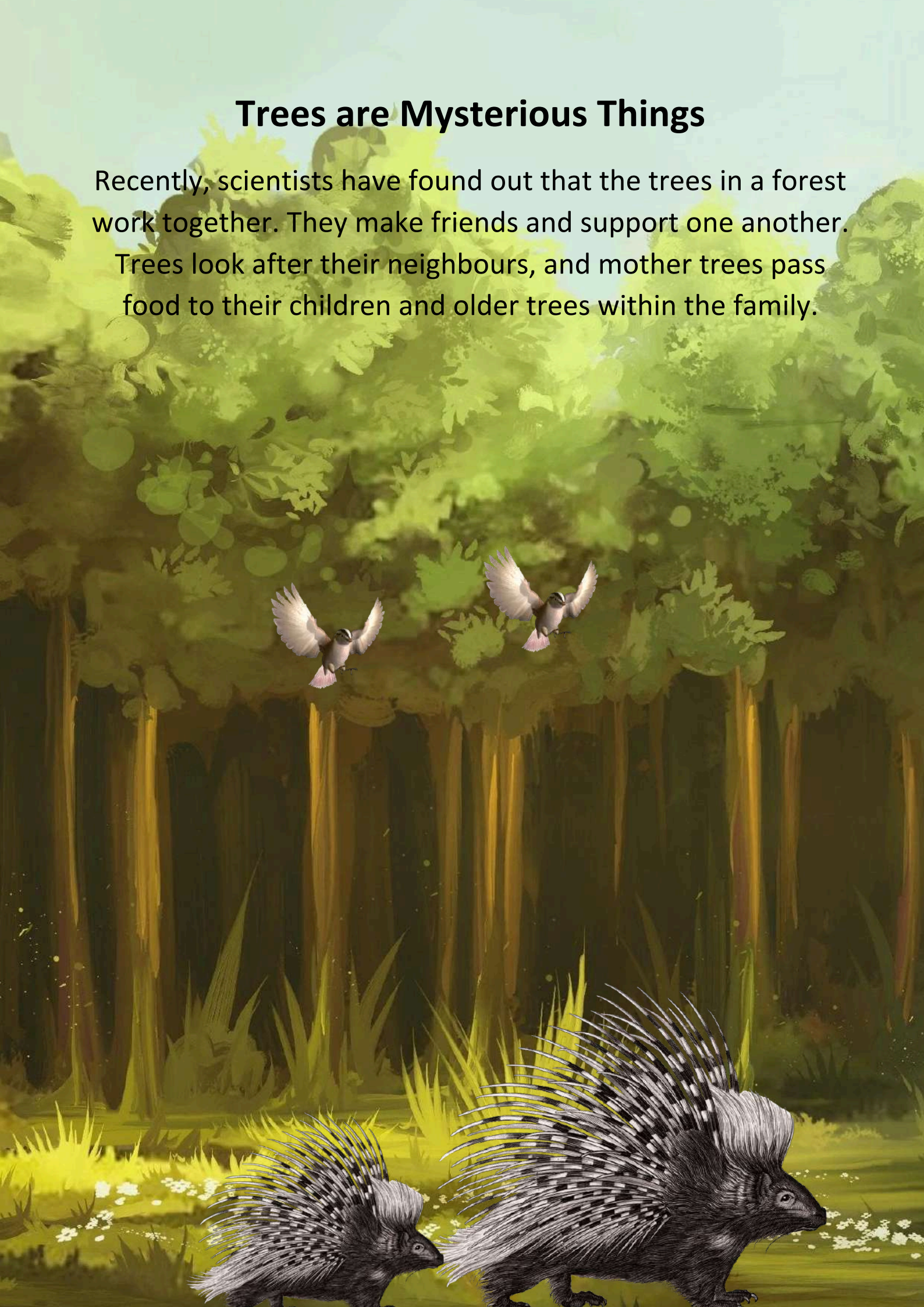




## Trees are Mysterious Things

Recently, scientists have found out that the trees in a forest work together. They make friends and support one another.

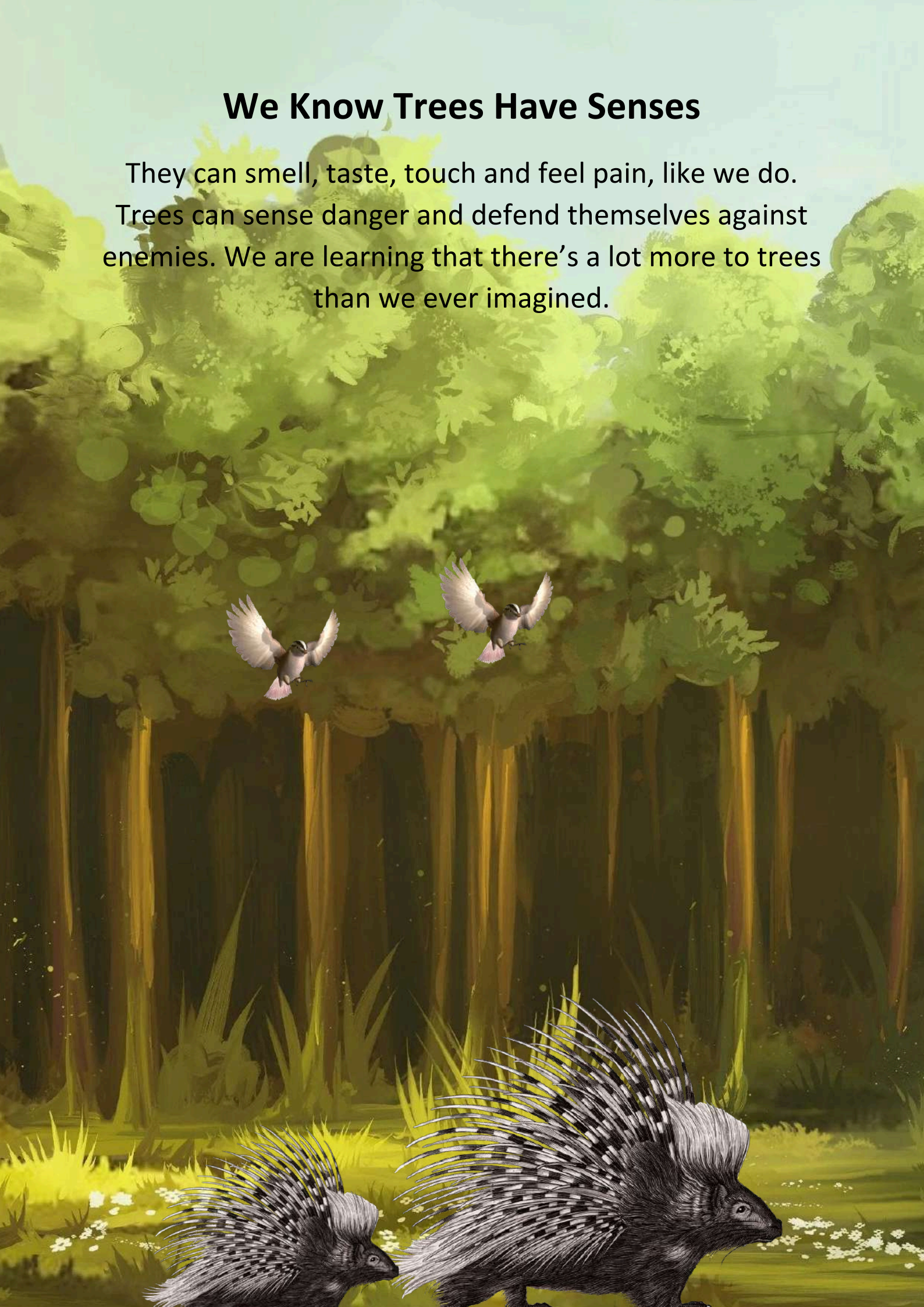
Trees look after their neighbours, and mother trees pass food to their children and older trees within the family.





# We Know Trees Have Senses

They can smell, taste, touch and feel pain, like we do. Trees can sense danger and defend themselves against enemies. We are learning that there's a lot more to trees than we ever imagined.





# Living Together





Life in the natural world is tough. It's easier for trees to survive when they help one another. Trees living in a forest grow best if all the trees are healthy. If one tree is in trouble, the others help it. Trees also work together to make the forest warmer and more sheltered in winter and cooler, damper, and shadier in summer.







## Family and Friends

Trees of the same species look after one another. Oak, beech and spruce trees only like to share water and food with their own kind. But in some places, trees of different types look out for one another too.





If a tree is damaged and starts to die, its neighbours will pass it food to keep it alive.



## Stronger Together

Trees grow wider until they reach the next tree. This creates a roof of branches and leaves that protects the forest from storms. If too many trees die and leave gaps, strong winds can enter and wreck the forest.





## Roots

Roots spread through the soil to form a hidden web. Forest neighbours stay in touch with one another and pass food to each other through their roots.





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