

THE

# WAIMĀRAMA KIDS CHRONICLE



## THE SECRET WORLD OF THE NGAHERE

In this issue we are going on an adventure into the teeny-tiny world of the forest, a world hidden to us unless we look REALLY closely. So get out your shrink ray, turn the beam on to tiny mode, and let's get exploring!

Hidden in the dark corners of the Brook Waimārama Sanctuary is a lost world waiting to be discovered. A forgotten forest, full of tiny creatures that carpet the ground, drape over branches and logs, and thread their way through the soil. Look closer as you walk along the forest trail, pause at the mossy banks, the areas darkened by overhanging trees, and like a magic curtain has been lifted, you will start to notice some of the most remarkable life forms you will ever have encountered. Moss, lichen, fungi, insects, spiders... there is so much life hidden right in front of us.

The little things in the forest play just as important a role within the ecosystem as the trees, bushes and birds, keeping the forest healthy and thriving. These hidden heroes perform all sorts of tasks within the forest- from composting and recycling, through to providing food and nutrients to other life forms. Tiny, but mighty!

### THE ULTIMATE RECYCLERS (DECOMPOSERS)

Fungi, bacteria and 'detritivores' (creatures like beetles and worms) break down dead wood, leaves, and even animals. This process keeps the forest clean and healthy, and helps important nutrients get recycled back into the living forest.

### NATURE'S SUPERMARKET

Plants (including moss and lichen) can turn sunlight into food. Insects, spiders and other small critters make a delicious meal for many bigger creatures of the forest. This drives the forest food web where every living thing relies of the health of the whole.

### BUILDING A FOREST FROM THE GROUND UP

Healthy animals rely on healthy plants, healthy plants rely on healthy soil. And healthy soil? That relies on a team of tiny workers, aerating, feeding, and recycling the nutrients within the soil. Let's find out more...

# THE FOREST'S TINY SUPERHEROES



## SPIDERS

Spiders are eight-legged, blue-blooded creatures that are the master builders in the forest.

### Superhero Powers...

**FOREST PROTECTORS:** Spiders are meat-eating predators that feast on millions of bugs every day.

They are nature's pest control!

**FOREST BUFFET:** They are a critical food source for many bigger forest animals- including Tuatara, Ruru, Fantails and Kiwi.



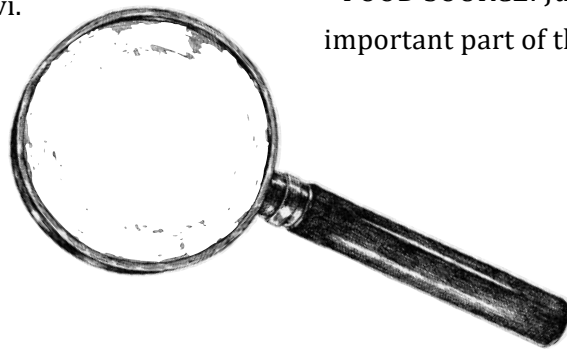
## MOSS

Mosses are plants, though they don't grow tall, grow roots, or produce seeds. They are soft and wonderful to touch, and really beautiful to look at! There are more than 550 types of moss within Aotearoa, and about 20% of these are found nowhere else in the world.

### Superhero Powers...

**MAGIC SPONGE:** They help to keep the forest cool and damp, filtering water and protecting the soil.

**TINY COMMUNITIES:** Moss provide a safe and cosy home for many small forest creatures, and some birds even use moss to build their nests.



## FUNGI

Fungi are neither plant or animal, though with 2-5 million species worldwide, they are seriously diverse!

### Superhero Powers...

**MASTER RECYCLERS:** Fungi break down dead things, converting them into healthy soil.

**WOOD WIDE WEB:** Fungi form an underground network that help trees to find nutrients, communicate with each other and even share resources.



## INSECTS

Insects really are nature's tiny superheroes. Though they are small, they keep forest ecosystems alive and healthy.

### Superhero Powers...

**PLANT HELPERS:** Insects are the number one pollinating hero of many plants within the forest.

**CLEAN UP CREW:** Many insects chew up dead things (and even poo!) converting waste into healthy soil so new trees and plants can grow.

**FOOD SOURCE:** Just like spiders, insects are an important part of the diet of many forest animals.



## LICHEN

Lichen are made up of three different living things... a fungi, an algae and bacteria, living together in a cooperative friendship called symbiosis.

### Superhero Powers...

**TINY PIONEERS:** Lichen can grow on hard, bare rock. They produce a special acid that slowly crumbles the rock into tiny particles, eventually creating new soil.

**HOME MAKERS:** Many tiny insects and spiders live safely inside the tangled parts of lichen.

**ECOSYSTEM INDICATORS:** Lichen will only grow if the air is fresh and clean. We can use lichen as indicators of a healthy environment.



**TINY HERO QUIZ**

Test your knowledge! Answers can be found on the previous two pages.

1. The role of a 'Decomposer' is...
  - a) To break down dead things.
  - b) To write songs
  - c) To prey on spiders
  
2. What is a Food Web?
  - a) Food stuck in a spider's web.
  - b) Edible spider webs.
  - c) A complex network of food chains within an ecosystem.
  
3. How many types of moss are there within Aotearoa?
  - a) Only one type.
  - b) 550
  - c) 5 million
  
4. Symbiosis means...
  - a) Symbols found on trees.
  - b) Life in the forest.
  - c) A cooperative friendship between living things.



**UNSCRAMBLE THE FOREST WORDS**



**IGNUF**



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**CHILEN**

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**DESPRI**



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**SCTINES**

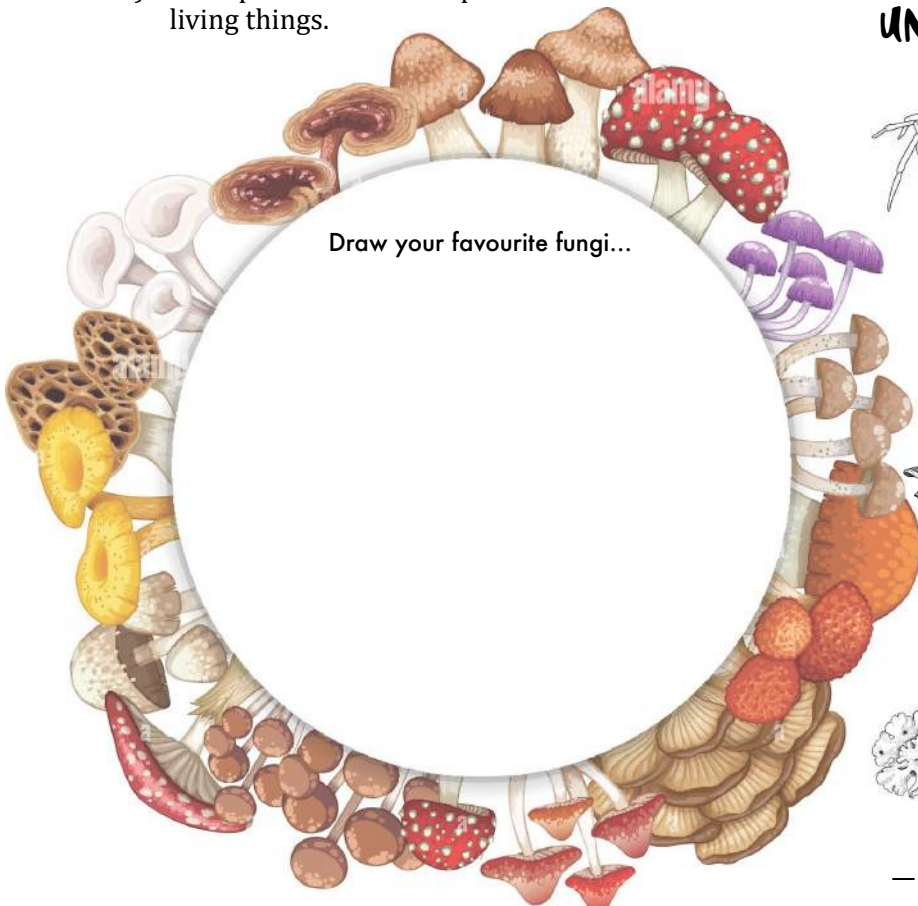
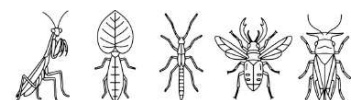


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**COMDEPOSERS**



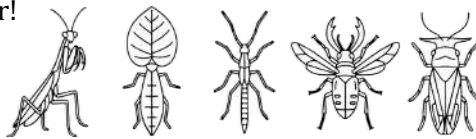
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## JUNIOR RANGER'S IN ACTION!

Head out and explore the hidden world of the ngahere this winter. Take a magnifying glass, look VERY closely, and take your time! When we learn more about this amazing ecosystem, we can help to share the message of why it's so important. Here are some ways you can help protect the hidden habitats within the forest...

- \* **When exploring in the forest, stay on the main trails.** Stepping off the path can crush hidden fungal networks and bug homes. If you're looking under logs and rocks, always replace them back where you found them.
- \* **Leave a shady patch of your garden to go a little wild!** Let the grass grow long, add some fallen branches or pinecones, sprinkle in some wild flower seeds, and watch your tiny ecosystem grow.
- \* Send in a picture of your actions for conservation to [brooksanctuary.junior.rangers@gmail.com](mailto:brooksanctuary.junior.rangers@gmail.com) to feature in our next newsletter!



## I WONDER..?



THINK LIKE A SCIENTIST... WHAT DO YOU WONDER?

- Many of the tiny things we learnt about in this issue (like fungi, moss and insects) prefer damp, dark conditions in the forest. Why do you think this is?
- Most insects and spiders stay small. Why do you think we don't see dog-sized bugs?
- Fungi make a large network underground, sometimes stretching for hundreds of hectares. Along the way they connect with trees through their roots. Why do you think the fungi and trees form a relationship like this?

## WANT TO GET INVOLVED?

The Brook Waimārama Sanctuary is the South Island's largest fully fenced eco-sanctuary—690 hectares of protected native forest alive with rare and threatened species. This is a place where you can reconnect with nature, breathe deeply, and experience the mauri (life force) of Aotearoa's unique environment.

Alongside the Junior Ranger Program, we offer individual, household and business memberships. Become a Brook Sanctuary supporter – in doing so you help to build and maintain sustainable Sanctuary operations for the enjoyment of current and future generations.

Find out more information on our website, <https://www.brooksanctuary.org.nz/>



Become a Junior Ranger



Annual Membership

- Individual - \$24
- Two children - \$44
- Three children - \$60
- Four children - \$75

For five or more children, please contact us for discounted pricing



Brook Waimārama Sanctuary  
NELSON NEW ZEALAND

Explore. Learn. Protect