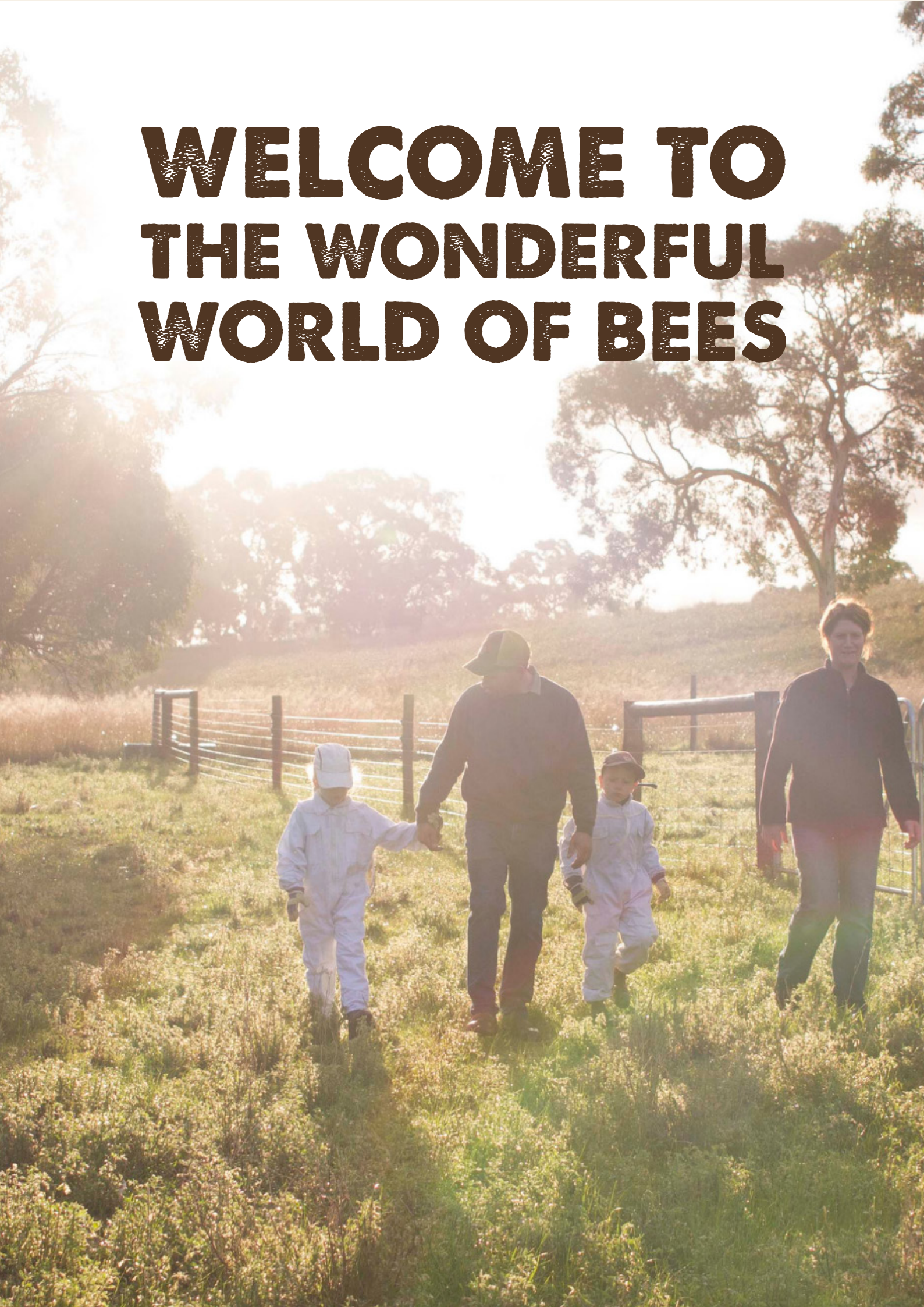
The Buzz About Bees

DISCOVER THE WORLD OF HONEY BEES, OUR SUPERHEROES!

AUSTRALIA AT ITS PUREST

WELCOME TO THE WONDERFUL WORLD OF BEES



Since 1953, Capilano has been supplying sweet, tasty honey to honey lovers across Australia and the world! This book is a result of the respect and wisdom our beekeepers have passed down across generations. These beekeepers care deeply for our littlest livestock - and our broader environment wouldn't be the same without bees or their keepers.

We sincerely hope you enjoy learning about the interesting lives of our busy bees, how honey is made, and the ways you can help us keep their population thriving for years to come.

The Capilano Team.

MEET PHOEBEE, SHE'S HERE TO SHARE HER WONDERFUL WORLD WITH YOU!

5 REASONS WE LOVE BEES

1. Bees help to support the sustainability of our Aussie food supply

An astonishing one third of Australian food is dependent on honey bee pollination.* From almonds to avocados, pumpkins and more, bees are vital for the pollination and production of many of our favourite foods!

2. Bees are our littlest livestock, precious to our Aussie beekeepers

Beekeepers are farmers too. They take care of their little livestock and move them around different floral sources throughout the year for happy, buzzing hives! It is a life's work and one that helps support beekeepers' families.

4. They help secure Aussie farmers' livelihoods

In Australia, 65% of our horticultural and agricultural crops also require pollination. Bees play an important role in helping to sustain our farmers so they have enough feed for their livestock, or seeds to continue growing their crops.

5. The plants they pollinate are homes for other animals too

Many mammals, insects, and birds rely on native habitats like wildflowers, shrubs, and trees for homes and food supply. By pollinating plants, bees are not only pollinating our food, but also helping to support our natural environment.

6. And of course, bees make pure Aussie honey

A delicious sweet staple in all of our pantries. From crumpets to porridge, smoothies to baking - where would we be without our 100% Pure Aussie Honey.

**Source: AgriFutures Honey Bee & Pollination. 2020. The Extraordinary Honey Bee and Its Impact on the Food We Eat. Publication No. 20-084, AgriFutures Australia.*

Different Types of Bees

There are around 20,000 different species of bees across the world! Here in Australia, we have over 1,500 native bee species. Here are just a few...

Wallace Giant Bee

Quasihesma Bee

Bumble Bee

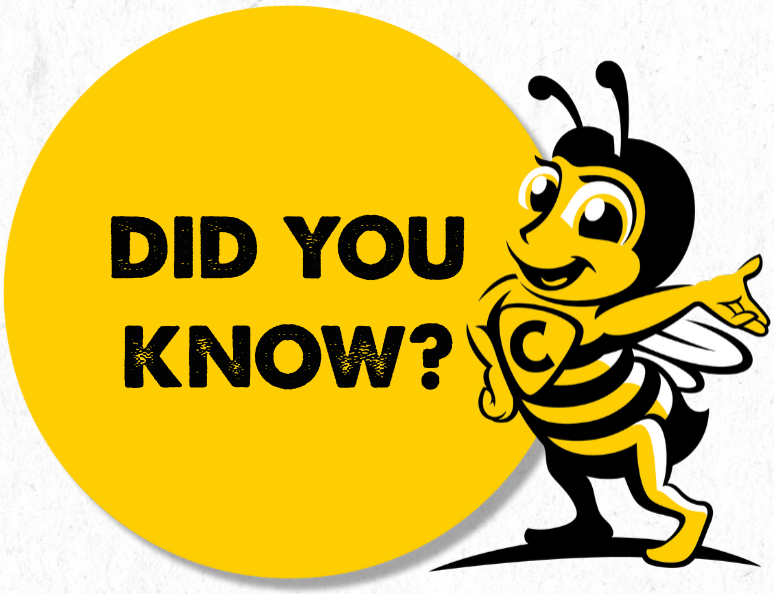
Teddy Bear Bee

Bees come in all shapes and sizes. From the Wallace Giant Bee, the world's largest at 4cm long, to the Quasihesma Bee native to Northern Queensland, which is one of the world's smallest at around 2mm in length.

There are also bees covered in soft hair, like the Teddy Bear Bee native to Australia or the common Bumble Bee in England.

WHAT IS A HONEY BEE?

Scientifically known as *Apis mellifera*, Western (or European) honey bees are undoubtedly the most industrious creatures on the planet. They are also the most well-known bee, living together in a colony. The colony lives in a nest - some nests are wild, while others are kept by humans (we call them beekeepers) that live in beehives.



The first honey bees arrived in Australia from England in 1822 aboard a ship called the "Isabella" and quickly adapted to our environment.

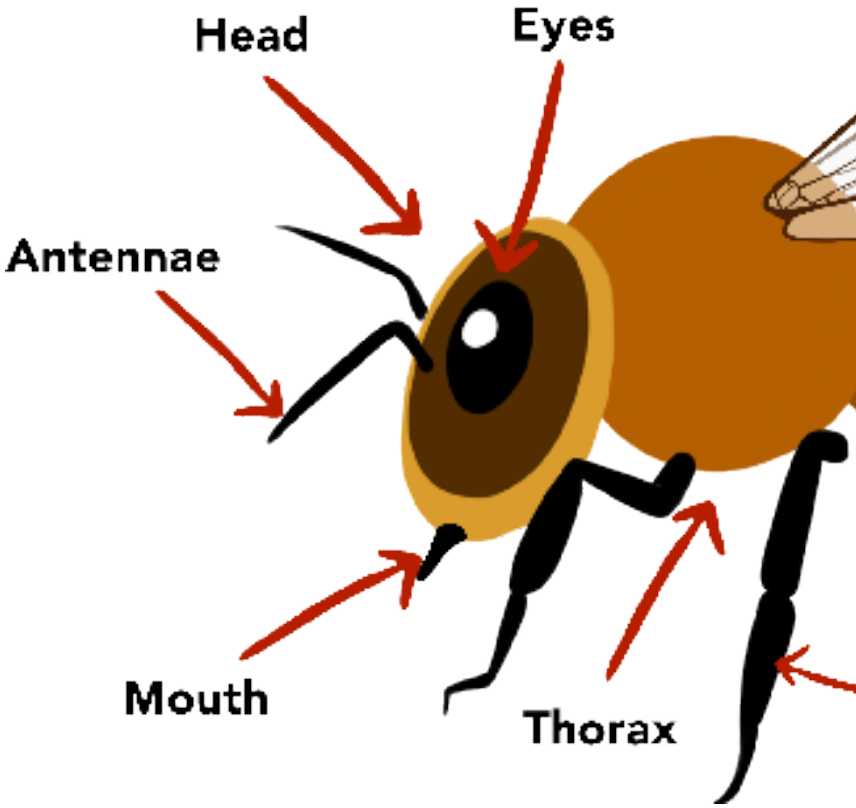
Later, bees would arrive from other parts of the world, including Italy, Southeast and Central Europe, and North America!

ANATOMY OF A HONEY BEE

A honey bee's body is made up of three different sections – a head, a middle section called the thorax and the end which is called the abdomen.

THE HEAD

A honey bee does not have a nose but instead has two antennae which it uses to smell and taste. They also have five eyes – two big composite eyes which are excellent for detecting flowers, and three small eyes which detect light.

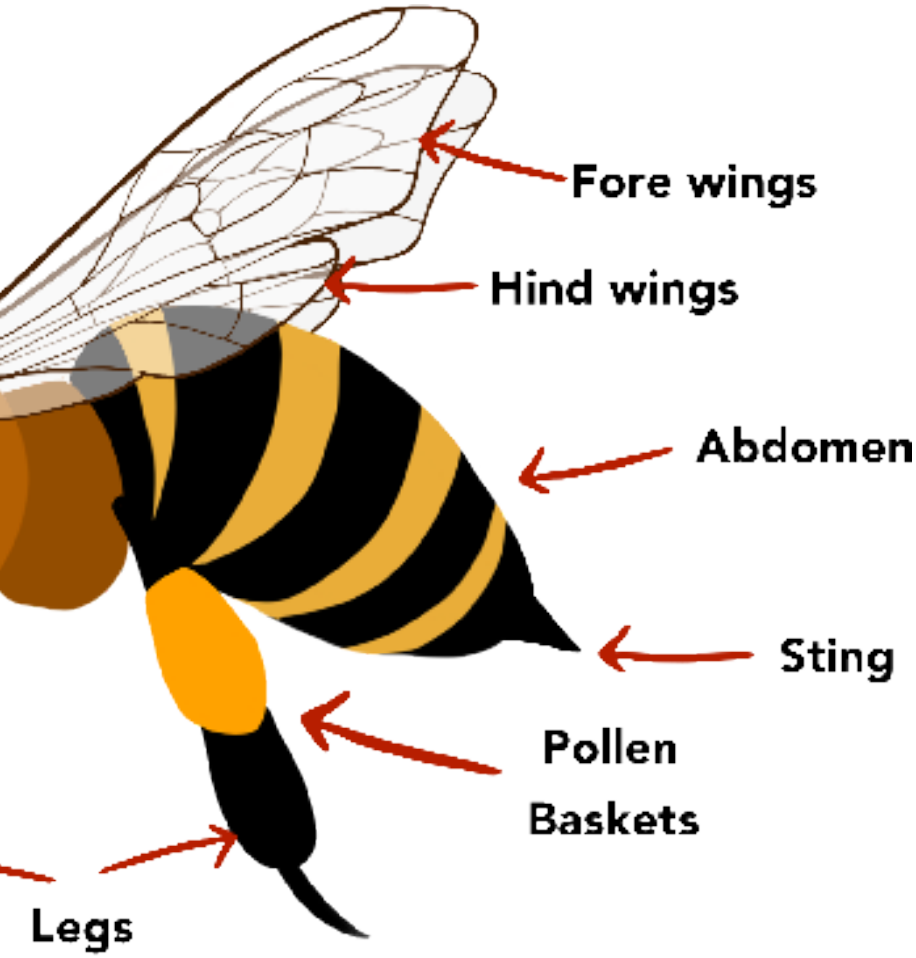


THE MOUTH

The mouth has a long tongue (called a proboscis) which the honey bee uses like a straw to reach into flowers and suck up lots of nectar. This nectar is stored in a honey stomach while the honey bee carries it back to the hive.

THE WINGS

Bees have two pairs of wings on the thorax - the fore wings and hind wings, with the fore wings being larger than the hind wings. They need to move very fast for a honey bee to fly. This makes vibrations in the air that we then hear as a "buzz" sound!



THE HIND LEGS

Bees have six legs in total, and with them they can hear sound in the form of vibrations. The hind legs of the honey bee are used to carry pollen in an area known as the “pollen basket”. As the honey bee forages on a flower, the pollen gets stuck to the little soft hairs on the abdomen. The hairs on the front and middle legs act like a comb, sweeping up the pollen into these pollen baskets.

WHERE DOES HONEY COME FROM?

Honey bees need two different types of food to remain healthy.

Nectar - which is the sugary juice collected from the heart of the flowers.

Pollen - which comes from the anther of the flower. These small grains get stuck to the bee's body and are what they take back to the hive in their "pollen baskets".

Different flowers = Different tasting honeys!

The taste of each honey is unique. Just like fingerprints, no two are exactly alike! It all depends on which flowers the bees have visited and collected nectar from.

When most of the nectar is sourced from one species of flower, the honey will have a very distinct flavour.

Our Yellow Box Honey comes from bees foraging on flowers of the Yellow Box (Eucalyptus melliodora) trees. It is light in colour and has a delicately smooth flavour.

Our Floral Manuka, on the other hand, has come from bees foraging on Manuka (Leptospermum) flowers and is much darker in colour and rich in flavour.

INSIDE THE BEEHIVE

A beehive can contain up to 40,000 honey bees, each with their own role to play in keeping a hive happy and healthy. There are three roles within the colony - a queen bee, worker bees and drone bees.

QUEEN BEE

Female

There is just one queen bee that can live up to 5 years. Her role is mother to most of the bees in the hive, laying eggs to keep her colony alive. Each day she can lay up to 2,000 eggs!

WORKER BEES

Females

There are thousands of worker bees in a hive with a life span of up to 6 weeks (during peak season). These bees have the most jobs to do – from nursing and cleaning, foraging and making honey, to guarding the hive. They are the reason for the saying a “busy bee”!

DRONE BEES

Male

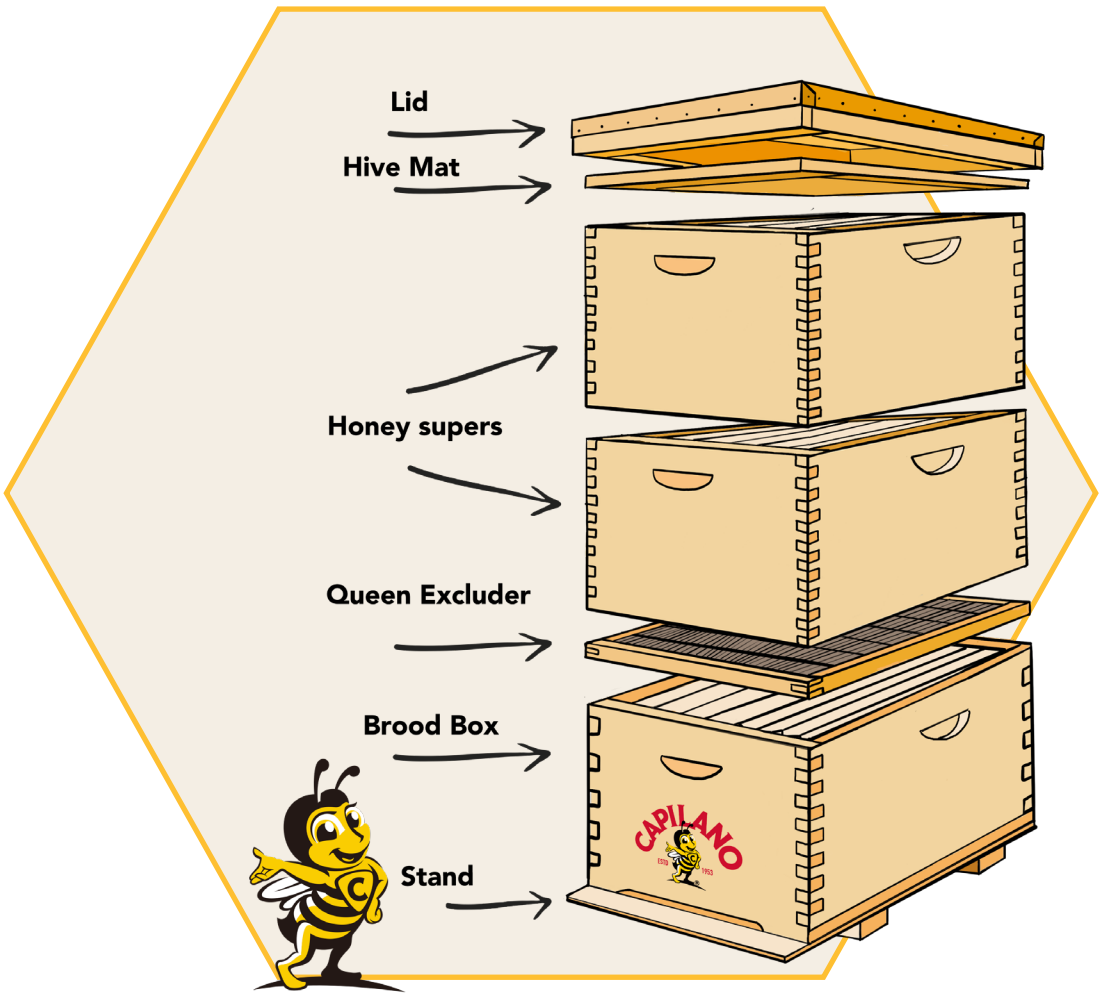
There are hundreds of these stingless bees during summer and their only task is to mate with the queen bee. Once they successfully mate midflight, they sadly die. The remaining drones will be pushed out of the hive during the colder months to die or will pass away due to food shortages.

ANATOMY OF A COMMERCIAL BEEHIVE

Some honey bees live and make honey in the wild. They make nests in rocks, hollow trees, and caves. Other honey bees are domesticated and their honey is collected by beekeepers. These honey bees live in beehives and are cared for by beekeepers.

Beehives protect the honey bees from the cold and rain and keep them cool in summer.

The beehive is typically divided into two sections – the top section is where the bees build honeycomb to later fill with honey, and the bottom section is the nursery for egg-laying, and raising the next generation of bees. The top section is referred to as the honey super. This is where beekeepers extract the honey, for us to enjoy. Honey is also stored in the brood box, but it is never extracted from here as it is the honey bees' supply.



A HIVE OF ACTIVITY

In the beehive, a honey bee makes beeswax and honey. The beeswax form hexagonal shaped cells which together make a honeycomb shape. Honey bees fill the cells with honey, pollen and eggs.

Honey is made from the collected nectar. Honey bees store honey in the cells and eat it when there are no flowers available, like during the colder months of autumn and winter.

From Hive to Home

At Capilano, we have over 800 beekeeping families who provide us with their 100% pure Aussie honey.

These farming families run independent beekeeping businesses, often dating back multiple generations. They passionately care for their hives to ensure their bees produce enough surplus honey to harvest.

The beekeepers then carefully extract the honey from their hives and send it to us at one of our three packing facilities around Australia.

When we receive the honey, we group it with other honeys of similar floral types or colours. Samples are taken for colour grading and moisture content, which are recorded by our quality control department.

These samples are taste-tested by our master honey blenders, carefully packed into containers, and are then ready to be sent to your local supermarket, pharmacy or health food store.

HOW DO HONEY BEES MAKE HONEY?

FOLLOW PHOEBEE ON HER JOURNEY FROM FLOWER TO HIVE.

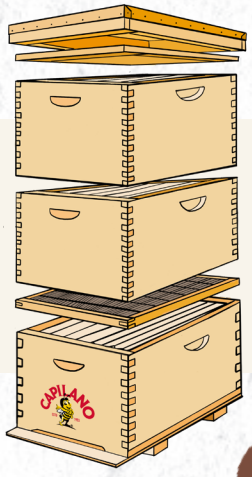
FROM FLOWER

STEP 1

Phoebee starts by collecting nectar from flowers with her tongue and storing it in a special honey stomach.

STEP 2

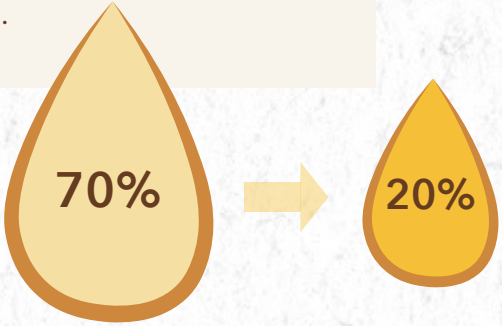
She then flies back to the hive where she passes the nectar to a honey-making bee with her mouth. This is where the healthy enzymes are added.



TO HONEY

STEP 3

The indoor bees pass the nectar mouth-to-mouth from bee to bee until its moisture level is reduced from 70% to 20%. This is what creates honey! Sometimes nectar is stored in honeycomb cells before the mouth-to-mouth transfer because some evaporation is caused by the warm temperature inside the hive.



STEP 4

Bees constantly flap their wings to keep air flowing through the hive, which reduces moisture in the honey, and keeps the colony dry! The process of converting nectar into honey is called "ripening".

TO HIVE

STEP 5

The honey is stored in the honeycomb cells and sealed to keep it fresh, ready for the next generation of honey bees to be born, or for the winter months where food is scarce.

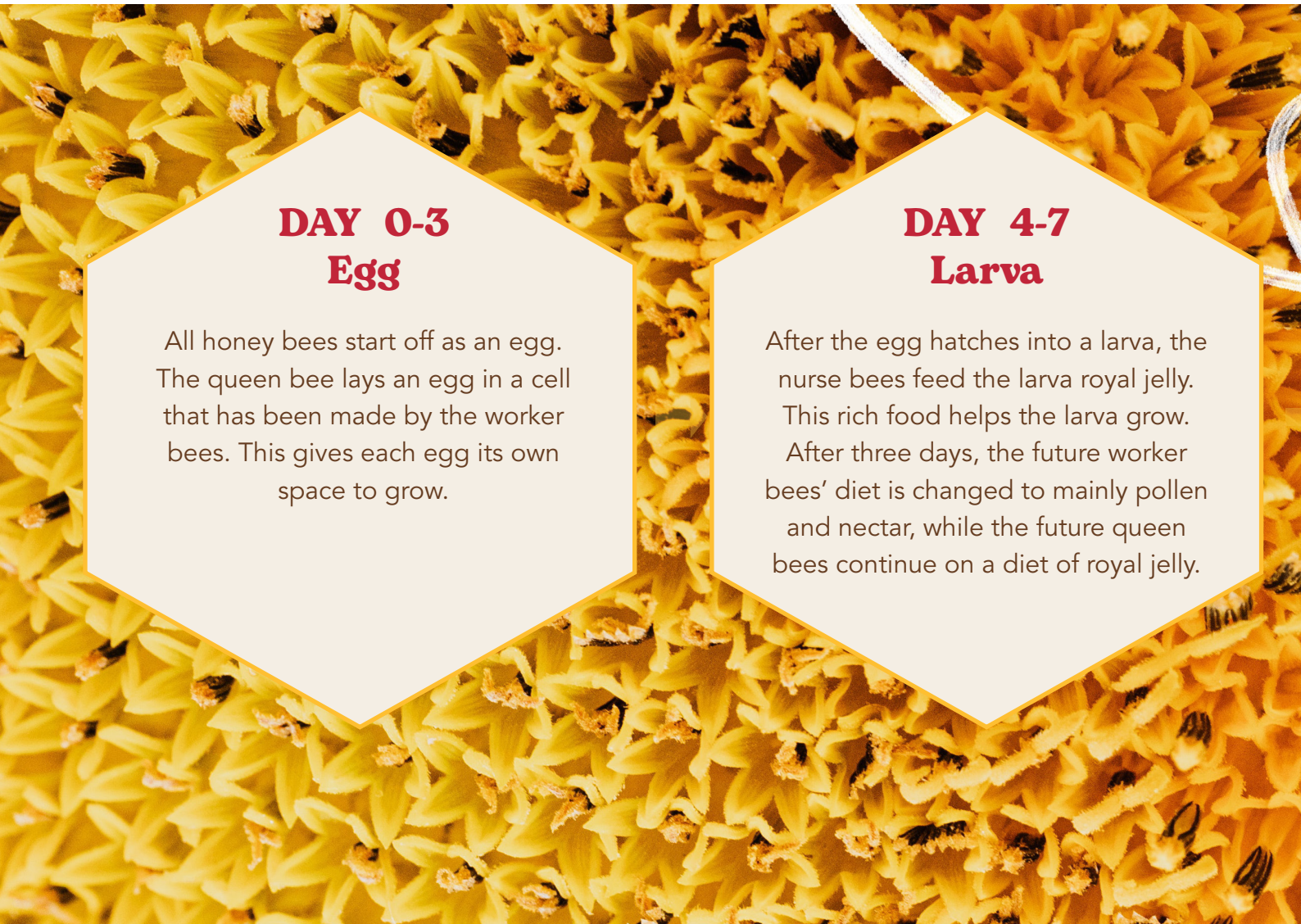
REPEAT AGAIN!

STEP 6

Before setting out on the next trip, Phoebee will comb off the excess pollen and clean herself from top to toe so she is ready for another successful flower visit!

HOW DO BEES DEVELOP?

All bees undergo complete metamorphosis, or change in form, during their development. The four life stages of a bee are: egg, larva, pupa and adult.



DAY 0-3
Egg

All honey bees start off as an egg. The queen bee lays an egg in a cell that has been made by the worker bees. This gives each egg its own space to grow.

DAY 4-7
Larva

After the egg hatches into a larva, the nurse bees feed the larva royal jelly. This rich food helps the larva grow. After three days, the future worker bees' diet is changed to mainly pollen and nectar, while the future queen bees continue on a diet of royal jelly.

Egg Larva Pupa Adult

As for drone and queen bees, the drone bees emerge from their cells three days after the worker bees and future queen bees emerge sooner, within 16 days.

DAY 8-20
Pupa

When the larva has grown big enough, it spins itself a silken cocoon for protection while it becomes a pupa. This is the stage the pupa grows the body parts it needs to become an adult bee.

DAY 21+
Adult Bee

When fully grown, the pupa gnaws its way out of the cocoon and cell, ready to join the rest of the hive as a hive nurse before taking on other roles in the hive.

WHAT IS POLLINATION?

One of the most important processes in our natural environment, pollination is the reason many of our trees, flowers and other plant species can exist and thrive. It's also how our birds, bees and many other insects get their food every day.

Pollination is the process of moving pollen from the anthers of a flower to the stigma of another flower. This process helps flowers to reproduce and make seeds that grow into fruits and new plants.

Bees are some of the best pollinators because the pollen can easily stick to their furry bodies, and their small size helps them pollinate flowers of many different shapes and sizes.

Sometimes pollination can happen from wind moving pollen without the help of animals or insects.

How Do Bees Pollinate Flowers?

STEP 1

Phoebee is attracted to a flower because of the bright petals and sweet smell of nectar.

STEP 2

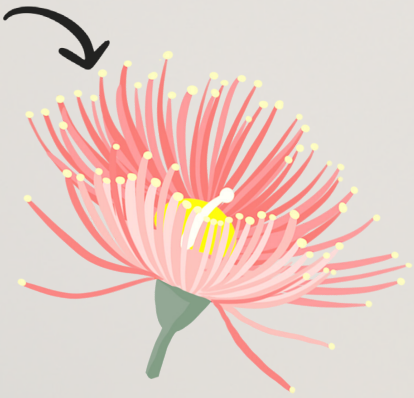
Phoebee visits this flower to collect nectar or pollen. While she is foraging the flower, pollen on the anthers gets stuck to Phoebee's furry body.

STEP 3

When she is done with the first flower, Phoebee then visits another to collect even more nectar or pollen.

STEP 4

At the next flower, the pollen falls off Phoebee's body and gets stuck to the sticky part of the flower called the stigma.



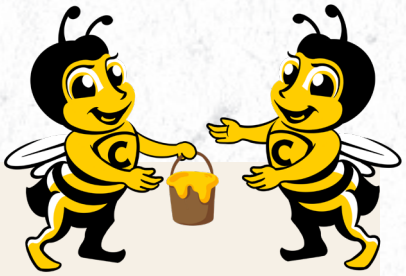
STEP 5

The pollen enters the flower at the stigma and grows a tube to the flower's ovary. Here, it meets the egg. Once the pollen has joined with the egg, it starts to become a seed.

A DAY IN THE LIFE OF A WORKER BEE

DAY 1-11
Cleaning and Nursing

The first task of the worker bee is to clean out the cell where she was born. She will then move on to helping the other nurse bees clean and cap cells, as well as feeding the larva of the hive.



DAY 12-17
Building and Storing

The next job for the worker bee is receiving and storing nectar from the forager bees. She will need to pack the pollen and build the honeycomb that is later filled with honey and eggs.

DAY 18-21
Guarding

Her next duty is as a hive guard, where she will look out for danger and guard the hive against foreign insects.

DAY 22+
Foraging

For the rest of her life, she will be a forager bee, where she will collect nectar and pollen from flowers and bring them back to the hive.


HOW DO BEES
COMMUNICATE?

Bees can't talk to each other like we can, so they communicate through dances, vibrations and body chemical signals.

Once the scout bees have found new pollen, nectar or water sources, they return to the hive to perform a dance across the honeycomb and tell the hive what they've found! To indicate distance exactly, the scout bee uses an audible code of buzzes on a 200 cycle per second note with a pulse rate of 35 to a second.

ROUND DANCE

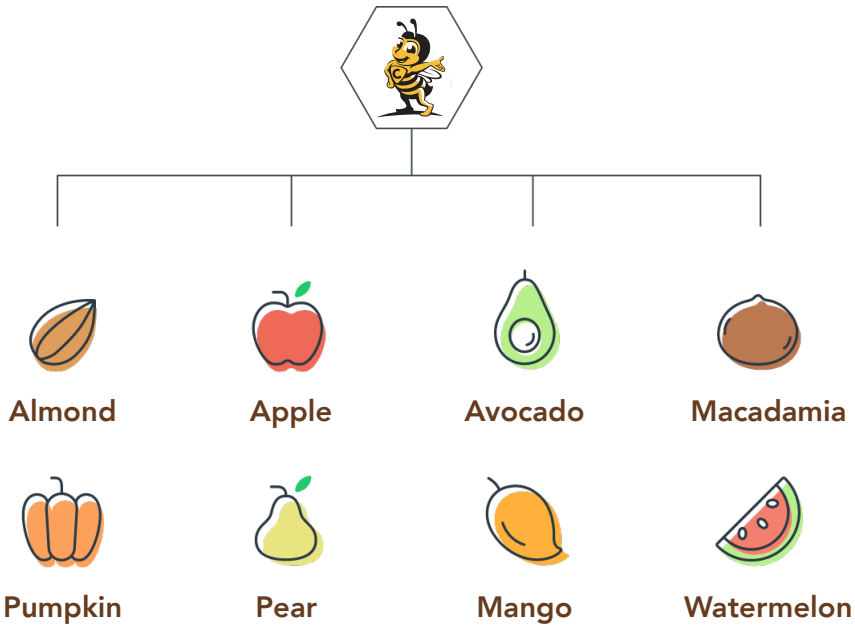
The round dance is performed when the food source is within a hundred metres of the hive. Her wings will vibrate swiftly as she runs in a circle and then turns and runs the other way.

WAGGLE DANCE

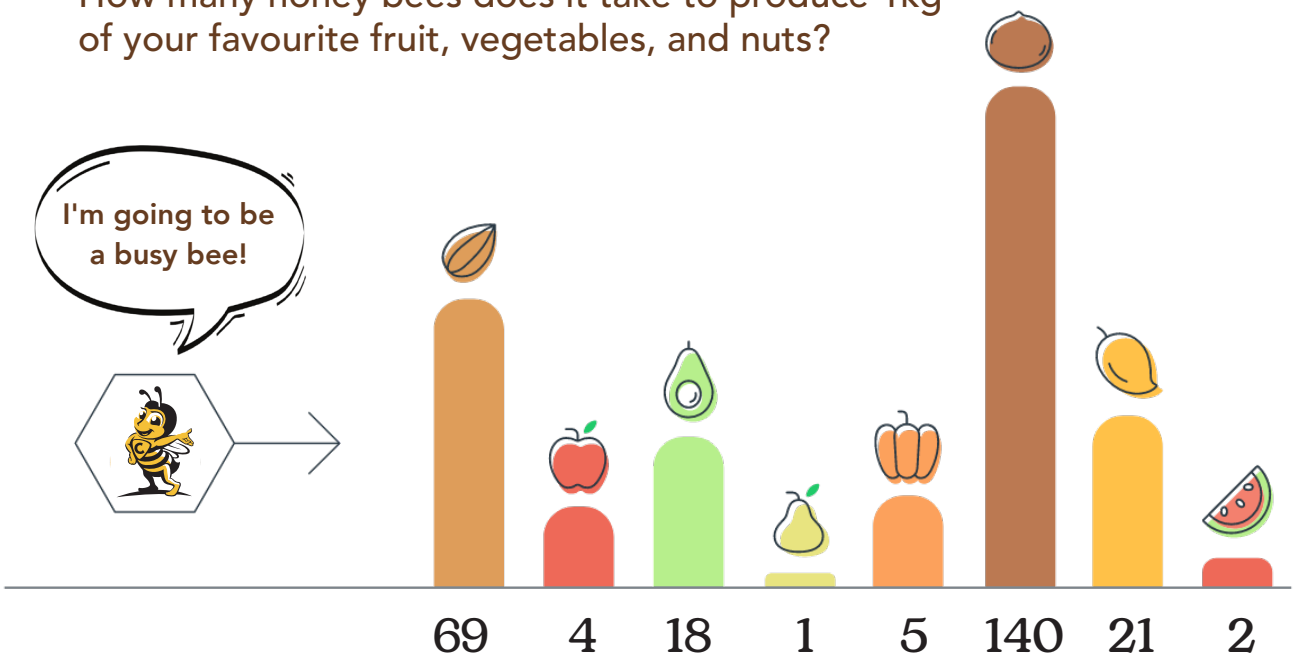
The waggle dance is performed if the source is further away. When you see a bee do this dance, it resembles a figure 8 with a straight centre. The angle of the dance tells other bees the direction of the flowers, and the waggle portion always means to fly in the current direction of the sun, wherever it may be.

CROPS THAT RELY ON BEES

Various crops are largely dependent on pollination from honey bees. The following crops are 70 - 100% dependent on honey bees.



How many honey bees does it take to produce 1kg of your favourite fruit, vegetables, and nuts?



Source: AgriFutures Honey Bee & Pollination. 2020. The Extraordinary Honey Bee and Its Impact on the Food We Eat. Publication No. 20-084, AgriFutures Australia.

⅓ OF AUSTRALIAN FOODS THAT END UP ON OUR PLATE ARE DEPENDENT ON HONEY BEE POLLINATION.*

**Source: AgriFutures Honey Bee & Pollination. 2020. The Extraordinary Honey Bee and Its Impact on the Food We Eat. Publication No. 20-084, AgriFutures Australia.*

WHAT WOULD WE DO WITHOUT BEES?

One in three mouthfuls of food we eat has been made thanks to pollinators like the honey bee.* When you think about it, that is quite a lot of food!

Without bees, some of our favourite fruits, seeds, nuts and vegetables would not make it from the farm to our plates.

We would also risk losing some of our meat and dairy products because we often feed farm animals with fodder such as lucerne, which is made thanks to pollination.

The following pages show what meal times would look like if we did not have the precious honey bee anymore.

*Source: AgriFutures Honey Bee & Pollination. 2020. The Extraordinary Honey Bee and Its Impact on the Food We Eat. Publication No. 20-084, AgriFutures Australia.

Without bees, we would not be able to enjoy the popular avocado on toast. Our porridge and cereals would be less fun and exciting with no more berries, almonds or macadamias to add flavour and texture.

Our fruit salads would be limited, with many fruits relying on honey bees for pollination. Coffee would be harder to come by and more expensive, and sadly would not taste as good either.

Lunchboxes would be very sad without all of the fresh fruits and vegetables that rely on bees for pollination.

It would be harder for us to find delicious, good quality foods like tomatoes, carrots or cucumbers. There would also be no more apples or pears for us to crunch into for those midday meals.

Our dinner time would not be the same without our precious bees.

We would have to say goodbye to delicious pumpkins which rely heavily on the hard work of bees. There would be less zucchini, capsicum and cucumber for us to enjoy, and they wouldn't taste or look as nice either.

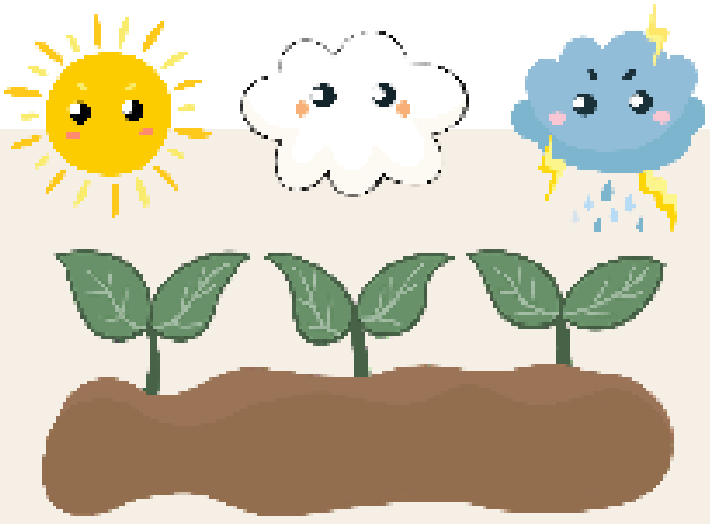
DO YOUR BIT WITH A BEE FRIENDLY GARDEN

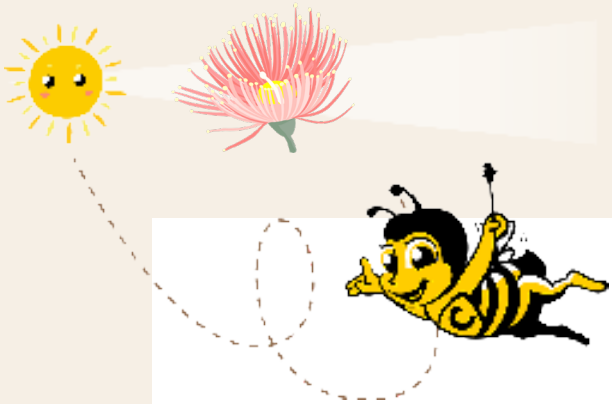
One of the easiest ways we can help support our hard-working, buzzy friends is by planting more bee-friendly plants in our gardens!

Here are some helpful tips to help you create a beautiful, bee-friendly garden:

TIP 1

Plant for flowers all year long. This gives bees a food source throughout spring, summer, autumn and winter!





TIP 2

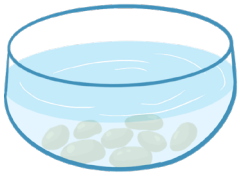
Look for sunshine and colour. Bees are attracted to colour and use the sun to find their way around.

TIP 3

Create a bee 'hotel'. Native bees can be solitary - why not offer them a bee hotel to nest in!

TIP 4

Create a bee 'bath'. Keep your garden bees hydrated with a shallow, fresh water bath.



TIP 5

Keep it natural. Use bee-safe gardening treatments to protect your bees!

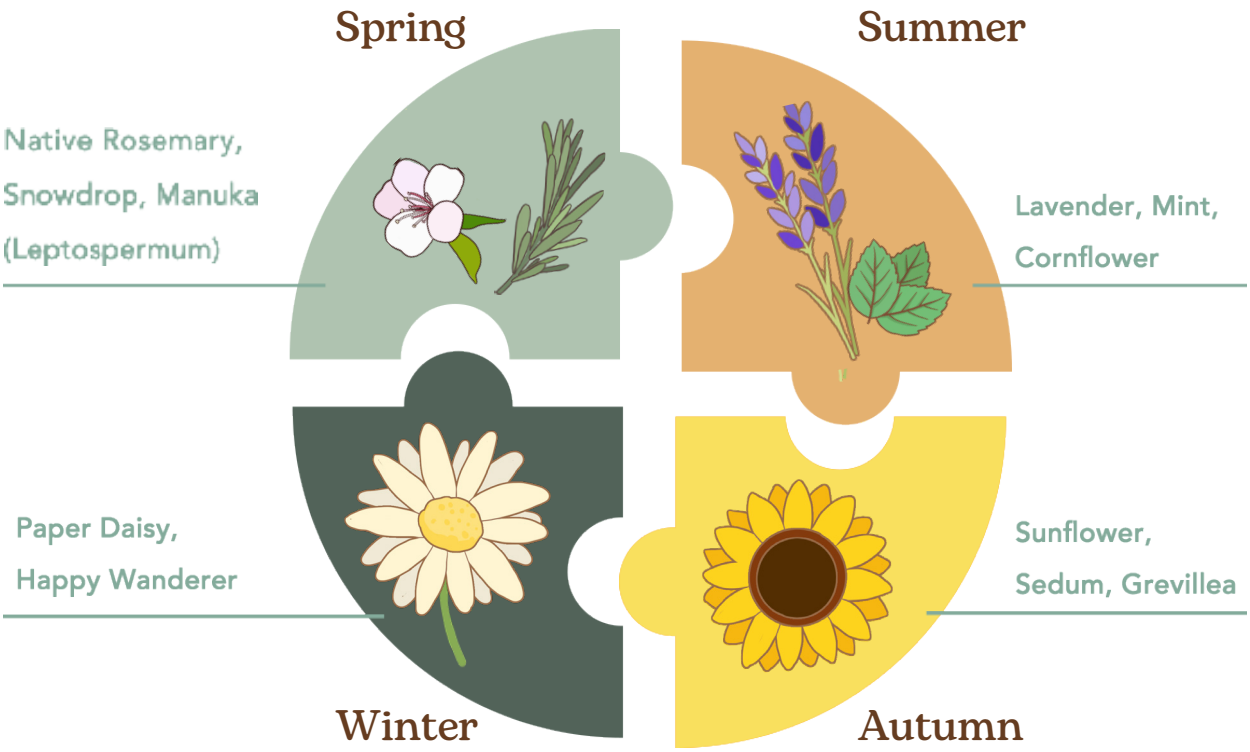
TIP 6

Protect those with bee allergies by creating a sign to let them know you have a bee-friendly garden.

TIP 7

For year-long foraging in your garden, ensure you plant a variety of flowers across the seasons. This will attract bees back to your garden as they need a variety of flowers for a healthy, balanced diet.

Here is an example of what your garden could look like throughout the year:



TIP 8

Finally, avoid using chemicals in your garden. Pesticides and other gardening products can be harmful to bees, so be careful what you use. You can still have a beautiful, flourishing garden without using chemicals.


Support Your
Aussie Beekeepers.
BUY AUSTRALIAN HONEY

CAPILANO HONEY

Proudly 100% Aussie Made & Owned

Capilano Honey is proudly Australian made and owned, providing pure 100% Australian honey to families near and far for over 65 years. Our high quality, Classic Pure Australian range has graced Aussie brekky tables for generations, earning its right as the nation's favourite honey.

Capilano Honey was founded by, and still supports, over 800 beekeeping families from across Australia. With beekeepers at the heart of our business, every action through to you, the end consumer, is based on the principle of building a better Australian apiculture (beekeeping) industry and delivering a safe, natural, and completely pure product to you.

Pictured: Aussie beekeeper families.

Discover Our Products

From Our Hives to Your Home

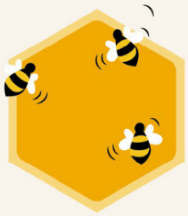
Australia's clean natural **environment.**

Very healthy **bees.**†

Skilled beekeepers.

Unique native Australian **flora.**

Nectar enriched with natural **bee enzymes.**



Naturally ripened by bees fanning it with their wings.

Pure honey.

Delivered to Capilano for **quality testing.**

Filtered to remove any naturally occuring **impurities.**

Naturally pure **Australian Honey.**

Australian Honey

†Source: Vella, G. 2016. It's official: our honey bees are some of the healthiest in the world. Issue 215. CSIRO, an independent Australian federal government agency responsible for scientific research.

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