

**ACTIVITY AND  
COLLECTOR'S ALBUM**



**3+**

Recommended  
for children 3  
years and older

Kia ora and welcome to Super Insects!

My name is Āwhina the Giant Wētā and I am indigenous to Aotearoa. I'm really excited to take you on a journey to see some of this country's super insects and learn that we aren't that scary and we're worth saving!

Did you know that insects do all sorts of things that help humans to survive? They pollinate important plants like fruit and vegetables, provide us with food like honey, control nasty pests, and recycle nutrients by breaking down dead plants and animals. Being at the bottom of the food chain makes them even more important as they are a great meal for birds, frogs, fish, you name it! Without insects, we might not be able to live on this beautiful planet!

I'd like to introduce you to my friend, Ruud, New Zealand's very own Bug Man. He is an entomologist which is someone who has studied insects. He loves bugs even more than me!

In this album, Ruud and I have created a whole lot of fun activities that you can do while you collect all the Super Insect cards. There are games, puzzles, facts about insects, lessons on endangered insects, and tips on how to study insects in their own environment without hurting them.

We hope that by the end of the album you will have learned a whole lot of amazing facts about all the incredible insects that live here in Aotearoa.

Are you ready? Follow Ruud and I as we adventure into the wonderful world of insects.

Have fun and good luck on your entomological journey!

From

Āwhina and Ruud



My name is:

Hey there,  
I'm Āwhina the  
Giant Wētā! Come on  
a Super Insect  
adventure with me!



Oh look, *Awhina* is on Ruud's face!

# COUNTDOWN SUPER INSECTS APP

Download the Countdown Super Insects App and have some fun with all these features!



- Store all your Super Insects cards in the app!
- Scan the Super Insects cards that have this symbol to bring them to life and interact with them!
- Unlock exclusive face filters!
- Play the Countdown Super Insects quiz game with your friends and family and become a real Super Insects expert!
- Play the Super Insects Explorer game!



How many pictures of me can you spot throughout the album?



# HOW TO READ YOUR CARDS

- LIFE CYCLE OF OUR KAHUKURA
- TERRIFIC TRAVELLERS
- RARE AND ENDANGERED
- AMAZING ADAPTATIONS
- IN OUR GARDENS
- IN OUR FIELDS
- IN OUR NATIVE BUSH
- IN OUR MOUNTAINS
- AROUND OUR STREAMS
- INTRODUCED SPECIES
- STRONG, BIG AND FAST
- GOOD FOR OUR LAND

Card Number

32

IN OUR FIELDS



Insect Name

Copper Butterfly  
*Pepe para riki*

Insect Facts

Native, small and brightly-coloured, there are many similar-looking close relatives found throughout the country. Their caterpillars feed on native scrambling plants called muehlenbeckia.



2



5



5



6

## Paper, Scissors, Rock Game



Place the deck of cards face down. Two players each pick up a card without revealing it. Both players say 'Paper, scissors, rock' and then reveal their card to the other player.

- If you have paper , it will win against rock

- If you have scissors , it will win against paper

- If you have rock , it will win against scissors

Every time you win a round, you get a point! If you both draw the same card, nobody gets a point. The first person to win five rounds will win overall!



- Scan cards that have this symbol with the Super Insects App to bring the insect to life!



- Rub the cards that have this symbol to see what they smell like! Can you guess the scent?



- Place the card in the light for a while, then see how it glows in the dark.

## Power Up Game



Evenly deal the deck of cards face down to each player so each player has their own pile of cards. Everyone picks up a card from their own pile.

The youngest player begins by reading out the score of one of the powers they believe is the highest; 1 is the lowest, and 10 is the highest. All other players then compare the score of the same power, whoever has the highest score, gets everyone else's card and puts them to the side. If the scores are tied, then you keep your own card. Play continues in a clockwise rotation. Once everyone has gone through their cards, the person at the end who has collected the most cards wins!



- This tells you the **strength** of the insect. 10 is the strongest!



- This tells you the **speed** of the insect. 10 means it's super fast!



- This tells you the **intelligence** of the insect. The smartest score is 10!

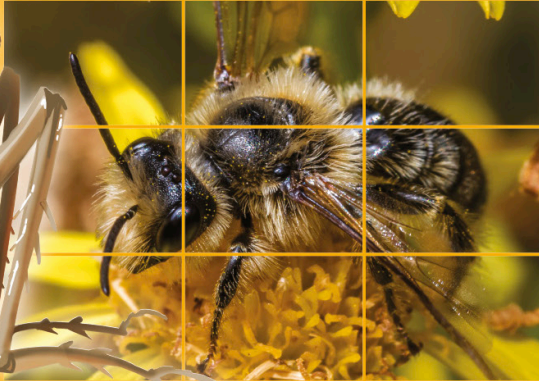


- This tells you how easy it is to **find** the insect outside yourself. The higher the number, the easier it is to find!

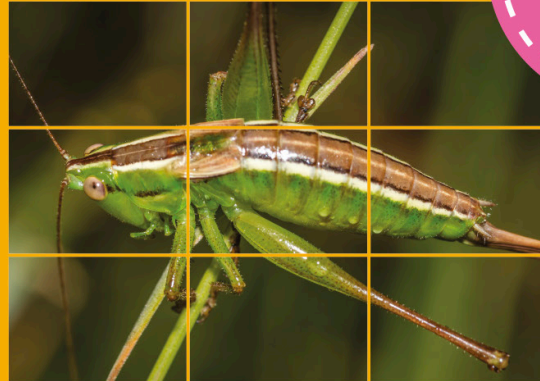
# PUZZLE CARDS

These are  
all the Card  
categories!

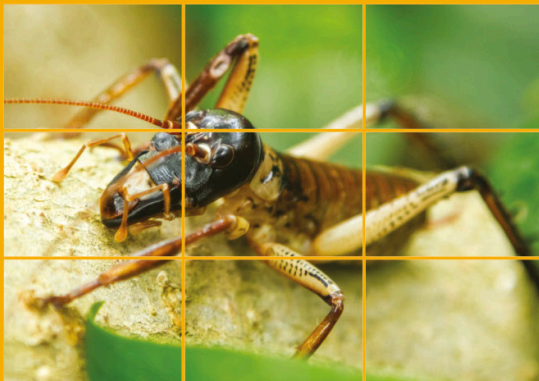
Native Plasterer Bee  
Ngaro Huruhuru



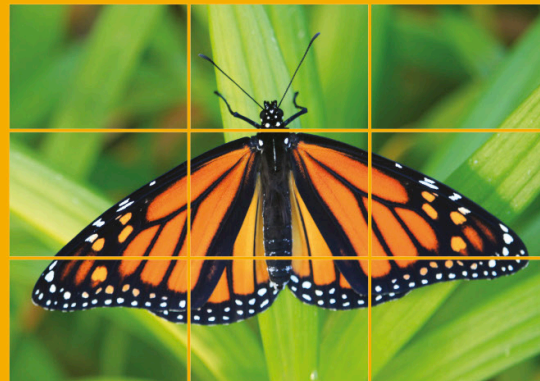
Longhorn Grasshopper  
Kōhiti



Auckland Tree Wētā  
Pūtangatanga



Monarch Butterfly  
Kahuku



Collect all 4  
puzzles!

## Puzzle Cards Ideas:

1. You can stick the nine puzzle cards together with tape or glue to a piece of paper.
2. After you've taped the completed puzzle together, you could hang them on a wall in your room as a poster.
3. To create one large poster, you can stick the 4 posters (36 cards in total) together to decorate your room or classroom.

# WHAT IS AN INSECT?

Insects are everywhere! They live on every continent and in almost every habitat on the planet. Insects are the most diverse group of animals on the planet.

There are currently about 1 million species of insects, but some entomologists believe there could be more than 5 million species!

Here's an interesting fact!

**The Head** - This has the insect's eyes, mouth-parts, and in most cases, a pair of antennae.

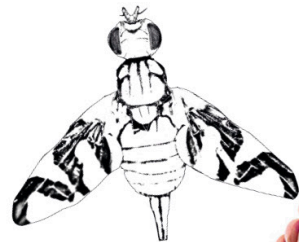
**The Thorax** - This body segment usually has 3 pairs of legs and two pairs of wings. Sometimes the wings are hidden though.

**The Abdomen** - This contains the insect's digestive, excretory and reproductive organs.

6 legs

## Insect Colouring

The insects are missing their colour!  
Can you bring back all their colours?



## Fun Fact

Insects and flowers have evolved together. Many plants depend on insects for pollination!



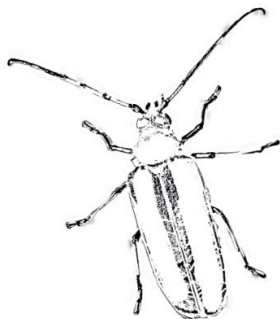
### Fun Fact

Many insects have evolved to look like other insects. This is called mimicry. Insects do this to scare off predators by looking like a more dangerous species. This harmless Drone Fly looks very similar to the Honeybee, but it doesn't have a powerful sting like a bee.



### Did you know?

There are at least 31 different groups of insects in the world. The biggest groups are Coleoptera (beetles), Diptera (flies), Hymenoptera (bees, wasps, ants) and Lepidoptera (moths, butterflies).



Can you spot all 3 body segments and 6 legs on each of these insects?

### Fun Fact

Entomologists estimate that 40% of all insect species are threatened with extinction as a result of human activity. It's up to us to do everything we can to help stop this decline and conserve insect populations and species.



# LIFE CYCLE OF OUR KAHUKURA

The Kahukura, or, New Zealand Red Admiral, is a butterfly endemic to New Zealand. This means it can only be found here and nowhere else in the world! In Māori, Kahukura also translates to being multicoloured or wearing a red cloak, both of which describe the beautiful colours on this species.

A lifecycle is the way an insect grows from egg to adult, and metamorphosis is how the insect changes from its young body into its adult body. There are different types of metamorphosis. Some insects have nymphs that look like a miniature version of the adult – this is called hemimetabolous development. Other insects have larvae or caterpillars which look very different from the adults; they form a pupa or chrysalis before becoming an adult – this is called holometabolous development.

What type of metamorphosis do you think the Kahukura goes through?

With an adult, try cutting up some celery sticks, and fill them with cream cheese or peanut butter. Then stick some pretzels in to make a butterfly!





### Labyrinth Game

Help the caterpillar find the shortest route to the pupa through the labyrinth to win! Do you know which way he has to go?

Labyrinth Game Answer D

That butterfly looks so elegant!

### Did you know?

The Kahukura has 21 close relatives found all over the world! Two relatives live in New Zealand; the Yellow Admiral (Kahukōwhai), and the Australian Painted Lady (Pepe para hua). Can you find the Kahukōwhai in this album?

01

**New Zealand Red Admiral -  
Egg**  
*Pūkoro hua*

02

**New Zealand Red Admiral -  
Caterpillar**  
*Mokamoka, Anuhe*

03

**New Zealand Red Admiral -  
Pupa**  
*Tūrourou*

04

**New Zealand Red Admiral -  
Adult**  
*Kahukura*

05

**Kaikoura Giant Wētā**  
*Wētā punga*



Hey, nice picture of you!

06

**Bumble Bee**  
*Pīrorohū*



07

**Subalpine Green Cicada**  
*Kihikihi, Tātarakihi, Tarakihi, Kikihi*

08

**Convolvulus Hawk Moth**  
*Hihue*

09

**Seashore Earwig**  
*Matā*

Some insects have lived here in New Zealand since we drifted away from Gondwanaland 85 million years ago! Other insects have flown across the Tasman Sea from Australia and have been helped along by strong westerly winds, and some have floated here on driftwood.

**Did you know?**

There are roughly 22,000 different species of insects living in New Zealand and new ones are constantly being discovered.



## Tip

Carefully lifting rocks and logs is a great way to find insects that like to live underneath them.

Thank you very moth.

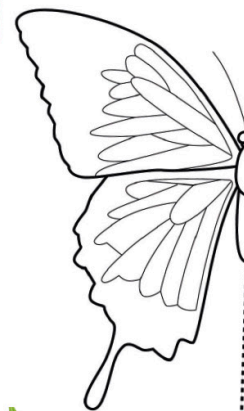
# TERRIFIC TRAVELLERS

Knowing how insects travelled to New Zealand and where they originally came from helps us to understand how our native insects are related to each other and how we can help conserve them.

Humans have also brought insects to New Zealand from other countries, sometimes on purpose, and sometimes by accident.

### Butterfly Drawing

Can you complete the full butterfly? Draw the other half of the butterfly and then colour it in!



# FROM BEE TO PLATE

Without insects, especially bees, a lot of fruits and vegetables wouldn't exist. They pollinate apples, berries, melons, carrots and many other crops that humans rely on. There would also be a lot less coffee, chocolate and other foods we like to eat if bees and other insects didn't pollinate crops. Follow the bee's journey to find out how it happens!

## Step 1:

Flowers and crops have nectar and pollen which bees and other insects love to eat. Bees visit flowers to feast on their nectar which fuels the adults, and pollen which fuels their larvae.

## Step 2:

When bees and insects are feasting on the nectar, the pollen can stick to their bodies.

That's as cute as a can bee!



## Did you know?

Some other insects that pollinate flowers and crops include moths, flies, butterflies and beetles!



**Step 3:**

When the bees fly from flower to flower, the pollen they have picked up along the way can end up on different flowers.

**Step 4:**

Pollination happens when the pollen lands on the right spot of another flower or crop. When the flower is fertilised, it grows into seeds or fruit! Fruits contain seeds which animals eat and then distribute to help a new plant grow!

That picnic is the bees knees!

So that's where our hard earned honey went!

You are my everysting!






# INSECT GAMES



## Spot the Difference

These two images of a dragonfly look the same, but there are 7 differences! Can you find them and circle them all?

*For the correct answer and solution, go to page 43.*



## Word Search Puzzle

Fill out the white squares with these four insects. Every row, column and mini-grid must contain these four insects. Don't guess, use logic!

*For the correct answer and solution, go to page 43.*

It bugs me that I can't find the differences.



## Word Search Puzzle

Find the 12 hidden insect names in this word search puzzle.

*For the correct answer and solution, go to page 43.*

The words can be vertical, horizontal or diagonal.

ANT

BEEBLE

BUTTERFLY

CICADA

EARWIG

HAWKER

HONEYBEE

MAYFLY

MOTH

RINGLET

WETA

WEEVIL

E	R	I	N	G	L	E	T	W	A
N	E	R	C	M	O	C	L	E	R
W	A	B	W	I	G	I	S	E	N
O	E	U	Y	B	C	C	E	V	G
M	O	T	H	E	G	A	N	I	I
A	N	T	A	S	N	E	D	L	W
Y	L	I	V	A	B	O	L	A	R
F	H	A	W	K	E	R	H	T	A
L	E	S	B	E	E	T	L	E	E
Y	B	U	T	T	E	R	F	L	Y

## Connect the Dots

Connect the dots to complete the drawing of the mantis, then colour it in!



# RARE AND ENDANGERED

Like other New Zealand animals, many native insects are endangered and need our help to survive.

Until humans arrived, New Zealand had no native land mammals except bats. This meant that many of our insects evolved to be large, flightless and camouflaged to avoid predators that hunt by sight, like our native birds. Unfortunately, when humans introduced pests that hunt by smell, like rats, our native insects became an easy snack. These pests and the clearing of insect habitats by humans have reduced the population of many native insects, putting them at risk of extinction.

Conservationists are doing a lot to help our native insects, and by learning about insects and their importance, you can help conserve them too!

I'm endangered because I'm one of a kind.

## Did you know?

The Frosted Phoenix is a species of native moth that has only ever been seen 10 times! The last sighting was in 1959 but entomologists believe it may still be out there, waiting to be rediscovered.

## Jump like a Grasshopper

Try to jump as far as a grasshopper can! Stand straight with your feet shoulder-width apart. Bend your knees and squat as low as possible, put your hands on the ground and then leap forward as far as you can. Leap 3 times in a row and that is how far a grasshopper can jump! That's really far right?



10

**Robust Grasshopper**  
*Kōhiti*

11

**Bluff Wētā**  
*Wētā*

12

**Canterbury Knobbled Weevil**  
*Tūwhaitara*

13

**Chatham Island Stag Beetle**  
*Pāpapa*

14

**Cromwell Chafer Beetle**  
*Pāpapa*

15

**Minute Grasshopper**  
*Kōwhitiwhiti, Kauwhitiwhiti*

**Fun Fact**

80% of New Zealand's insects are endemic which means they're found nowhere else in the world. For comparison, less than 0.01% of insects in the United Kingdom are endemic.

16

**Mountain Stone Wētā**  
*Wētā*

17

**Cabbage Tree Moth**  
*Purere tī*

18

**Alpine Stonefly**

19

**New Zealand Grasshopper**  
*Kauwhitiwhiti, Mōwhitiwhiti*

20

**Mercury Islands Tusked Wētā**  
*Wētā*

What amazing  
insect adaptation  
can you think of?



**Did you know?**

Insects are so adaptable that there are even species found in Antarctica. The Antarctic Midge can survive being frozen solid for up to nine months of the year!

# AMAZING ADAPTATIONS

Let's play hide and seek!

Like all living things, insects have been evolving for millions of years and have adapted to be the most diverse group of animals on the planet. Their tough exoskeleton helps to protect them from the heat, cold, damage and disease.

The evolution of wings was possibly the most important adaptation as it allowed insects to fly to places all over the world to find new resources.

Many insects have adapted to develop unique features to help them survive in their chosen environment. Some adaptations help insects to find a mate or fight off rivals, others help them to get to new places or hide from predators.

## Tip

Looking on walls around outside lights at night is a great way to find some of our amazing nocturnal insects!

Which of these three insect species is native to New Zealand?

A



B



C



*Dops, I think this is the wrong colour.*



# IN OUR GARDENS

Different insects live in different places. Some like to visit flowers, others like to live between leaves and branches, and some like to live under rocks and other things on the ground.

You can encourage native insects to your garden by planting lots of native plants, especially ones with flowers and by putting rocks and logs underneath bushes for insects to hide under!

**Tip**  
Planting swan plants is a great way to attract Monarch Butterflies to your garden. It's a good idea to plant several because the caterpillars have BIG appetites!



## Match The Name Game

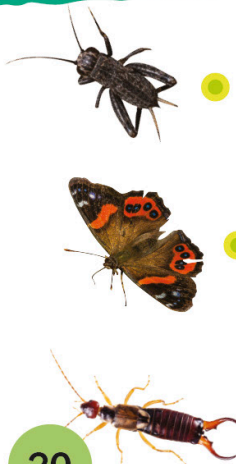
Match the insect to its Māori name then link them by drawing a line.

For the correct answer and solution, go to page 43.

● Kahukura

● Mātā

● Rirerire



21

**Monarch Butterfly**  
*Kahuku*

22

**Common Garden Katydid**  
*Kikipounamu*

23

**Eleven-Spotted Ladybird**  
*Mumutawa*

24

**Southern Ant**  
*Pōpokorua, Pōpokoriki*

25

**Yellow Admiral**  
*Kahukōwhai*

26

**New Zealand Mantis**  
*Rō, Whē*

**Fun Fact**

Mantises have 5 eyes; two main compound eyes and three smaller simple eyes called ocelli on the top of their heads. Ocelli detect changes in light, like the shadows of potential predators.

Never judge a bug by it's cover.



27

**Southern Blue Butterfly**  
*Pepe ao uri*

28

**Longhorn Grasshopper**  
*Kōhiti*

29

**Garner's Tiger Beetle**  
*Moeone*



30

**Native Plasterer Bee**  
*Ngaro huruhuru*

31

**Small Field Cricket**  
*Rirerire*



32

**Copper Butterfly**  
*Pepe para riki*



### Fun Fact

Many New Zealand plants have white flowers. Entomologists believe this may be because they were naturally pollinated by flies and moths which aren't attracted to bright colours like introduced bees.



He looks like a zombie.

## IN OUR FIELDS

### Butterfly Cakes

20 mins preparation | 25 mins cooking |  
Makes 12

#### Ingredients:

- 125 gram butter, at room temperature, chopped
- 2/3 cup caster sugar
- 1 teaspoon vanilla extra
- 2 eggs
- 1 3/4 cup self-raising flour, sifted
- 2/3 cup milk
- 300 millilitre thickened cream, whipped
- Sliced strawberries to decorate (optional)
- Icing sugar, to dust

#### Method:

1. Preheat oven to moderate, 180°C. Line a 12-hole muffin pan with paper patty cases.
2. In a large bowl, using an electric mixer, cream butter and sugar together until light and fluffy. Beat in vanilla extract.
3. Add eggs, one at a time, beating well after each addition. Fold in flour alternately with milk, beginning and ending with flour. Spoon mixture into paper cases until two-thirds full.
4. Bake for 20-25 minutes or until a skewer inserted in the centre comes out clean and dry. Cool in pan for 5 minutes. Transfer to a wire rack to cool completely.
5. Using a sharp knife, cut a circle from the top of each cake. Slice in half to make wings. Fill cavities with cream. Top cakes with wings and decorate with strawberry slices and coloured sugar, if using. Dust with icing sugar to serve.

The types of grasses and crops that farmers like to plant are also favourite foods of insects such as bees, butterflies and hoverflies. When we give them a free lunch, they help us in return and pollinate plants, providing food for both livestock and people!

Get an adult to help you.

Some insects such as ground beetles and ladybirds are predators of other invertebrates and help to control pests such as slugs and aphids. Landowners can help to keep these beneficial insects around by leaving some areas of natural habitat on their properties.

Hey, bee nice!

### Which insects feed on flowers?

A



B



C



Answer: A and C. The Bumblebee and the Hoverfly.

# THE ANATOMY OF BEES

I think I better  
bee-have  
myself this  
time...

Let's learn  
something  
about  
bee anatomy.

## Honey Makers

Did you know there can be up to 80,000 workers in a Honeybee hive! These workers need to visit more than 2 million flowers to make enough honey to fill a 500g jar!

# ABDOMEN

## Heart

The blood in insects is free-flowing throughout the body cavity and is pumped via the heart. The heart acts like a pumping leaky tube to help move the hemolymph throughout the body.

## Rectum

## Sting

## Venom Sac

## Hind Leg

## Forewing

## Hind Wing

## Ovary

## Crop Honey stomach

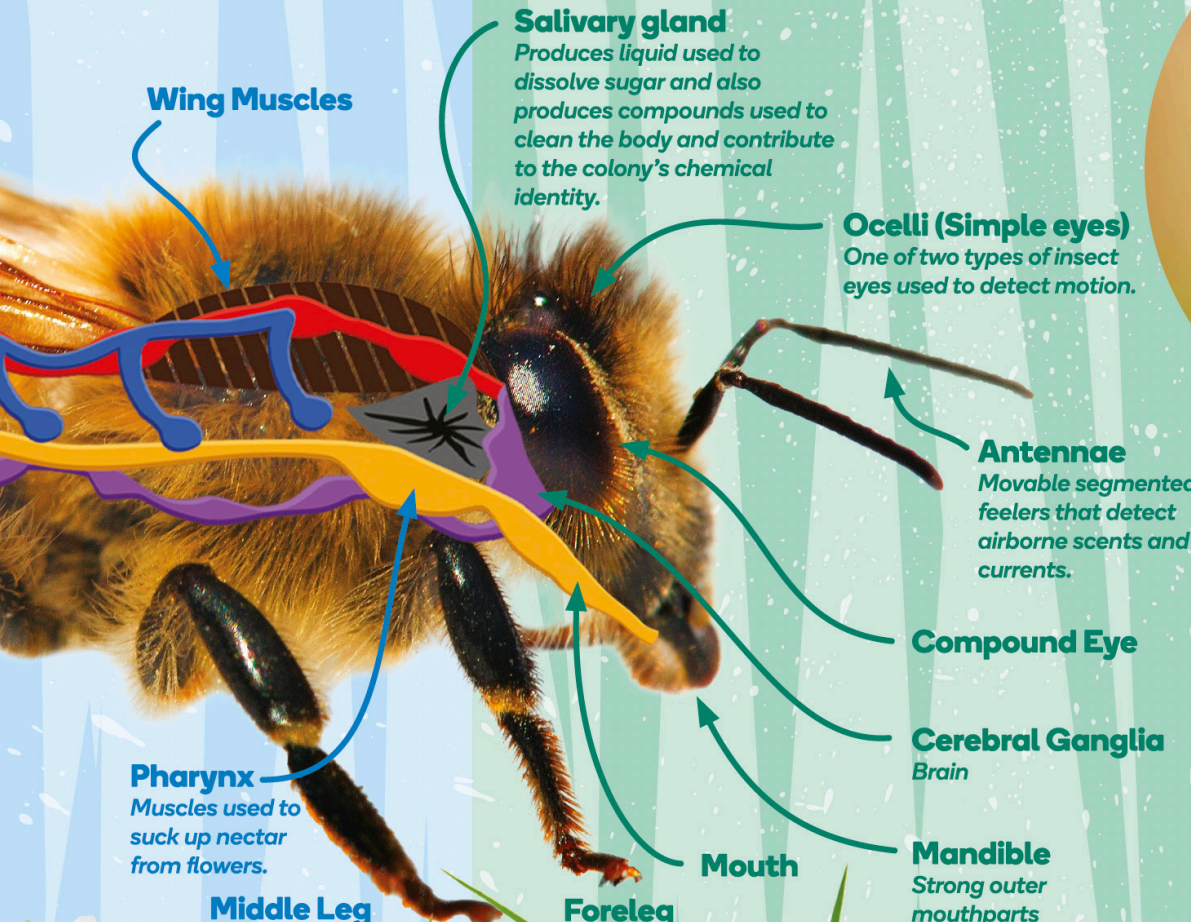
## Stomach

QUEEN  
BEE!



# THORAX

# HEAD



**Wing Muscles**

**Salivary gland**  
Produces liquid used to dissolve sugar and also produces compounds used to clean the body and contribute to the colony's chemical identity.

**Ocelli (Simple eyes)**  
One of two types of insect eyes used to detect motion.

**Antennae**  
Movable segmented feelers that detect airborne scents and currents.

**Compound Eye**

**Cerebral Ganglia**  
Brain

**Mandible**  
Strong outer mouthparts

**Pharynx**  
Muscles used to suck up nectar from flowers.

**Middle Leg**

**Foreleg**

**Mouth**

Too bee... or not to bee?



## Honey Joys

15 mins preparation | 8 mins cooking |  
Makes 24

### Ingredients:

- 75 gram butter
- 1/3 cup (115g) honey
- 1 tablespoon caster (superfine) sugar
- 5 cups (200g) corn flakes

### Method:

1. Preheat oven to 180°C. Line two 12-hole (1/3-cup) muffin pans with paper cases.
2. Stir butter, honey and sugar in small saucepan over low heat until smooth.
3. Place corn flakes in large bowl, add honey mixture; stir until corn flakes are well coated. Divide corn flake mixture into cases.
4. Bake 8 minutes. Stand 15 minutes or until firm.

## IN OUR NATIVE BUSH

Before humans arrived, 82% of New Zealand was covered in forest. Many of New Zealand's insects have evolved in forest habitats and therefore forests are a great place to find native species.

Forests are very diverse habitats and offer insects lots of different places to hide, live and feed. Many forest-dwelling insects have brilliant camouflage that helps them hide in the leaves, bark and tree trunks, or the leaf litter of the forest floor.

### Fun Fact

Did you know that New Zealand's giraffe weevil is the longest species of weevil in the world? Adult males can be up to 80mm long!

**Tip**  
Look carefully at the trunks and branches of trees. Many native insects will rest here and rely on their brilliant camouflage to keep them hidden. Can you spot the beetle hidden in this picture?

Have you ever seen a flying tree?

Try exploring your local forest or reserve to see what you can find!

Weevil weevil rock you.

33

**Wellington Tree Wētā**  
*Pūtangatanga*

34

**Giraffe Weevil**  
*Tūwhaipapa, Tūwhaitara*

35

**Smooth Stick Insect**  
*Rō, Whē*

36

**Pūiri Moth**  
*Pepe tuna*

37

**Cave Wētā**  
*Tokoriro*

38

**Forest Shield Bug**  
*Kirirākau*

No, but I've  
seen a walking  
stick!

**Fun Fact**

The Māori name for the Pūiri Moth is *Pepe Tuna* which translates to 'Eel Moth'. This is because the moth and caterpillars were used as bait to catch eels.

39

**New Zealand Glow Worm**  
*Titiwai, Pūrātoko*

Weevil always  
be together!

42

**Mānuka Beetle**  
*Kēkerewai, Reporepowai, Kerewai*

40

**Kawakawa Looper**  
*Pepe, Pūrēhua*

43

**Chorus Cicada**  
*Kihikihi wawā, Kīkitara, Kihikihitara*

41

**Huhu Beetle**  
*Huhu (larvae), Tunga rere (beetle)*

Forests are the home to almost 80% of all terrestrial plant and animal species. They also help provide clean water, produce oxygen for us to breathe and offer humans and animals a place to enjoy the outdoors!

**Fun Fact**

Because of their size, wētā are eaten by rats which threatens them with extinction. Conservationists have helped some species of wētā by moving them to pest free islands where they are safe.



## Earwig Maze

Earwig species are very good mothers.  
Find your way through the maze to the middle!



Help this  
mother find  
her lost  
offspring.

## IN OUR NATIVE BUSH

As you can see, protecting and restoring forests not only helps plants and animals survive, but it also has many other benefits for us humans! You can help improve forest ecosystems in many ways. Planting native trees and shrubs in your garden helps to provide food and a habitat for native insects, or you could work with a conservation group to safely control weeds or pests in a local bush reserve.

## IN OUR MOUNTAINS

The mountains are a tough place for an insect to live. Living at a high altitude means these insects must be able to survive extremely cold temperatures and very strong winds.

Many New Zealand mountains are covered in snow for several months a year, so insects only have a short period in the summer to feed, grow and reproduce when most of the snow has melted away. Even during the summer though, it can be very cold in the mountains.

A lot of insects that live here are black like solar panels which helps them to absorb more sunlight and warmth. Some species are also covered in small hairs which act as a ski jacket to keep them insulated and warm.

You're so fly!

Strike a pose.

### Tip

Taking photos of insects is a great way to identify them. Try to get nice clear photos looking down from above. You can compare them against pictures in this guide, other books or on websites.



44

**Black Mountain Butterfly**

*Pepe pouri*

45

**Hutton's Speargrass Weevil**

*Pāpapa*

46

**Greater Alpine Black Cicada**

*Kihikihi, Tātarakihi, Tarakihi, Kikihi*

47

**Tussock Butterfly**

*Pepe, Pēpepe*

48

**Alpine Grasshopper**

*Kōhiti*

49

**Great Ghost Moth**

*Pepe, Pūrēhua*

**Fun Fact**

The Mount Cook Flea isn't actually a Flea but a species of Cave Wētā. It is one of New Zealand's most extreme alpine insects and has been found at an altitude of more than 2,600 metres above sea level!

50

**Red Damselfly**  
*Kihitara*

51

**Net-Spinning Caddisfly**  
*Pūrerehua*

52

**Large Green Stonefly**

53

**Prong-Gilled Mayfly**  
*Piriwai*

54

**Carove's Giant Dragonfly**  
*Kapokapowai*

I hope I'm not  
bugging you!

**Fun Fact**

You can tell dragonflies and damselflies apart by how they hold their wings when resting; dragonflies hold them out like an aeroplane and damselflies fold them behind their back.





WOOR!  
I'm huge!

# AROUND OUR STREAMS













Many different insect species live in New Zealand's waterways; streams, rivers, ponds, lakes and even the ocean. For most aquatic insects, only the larvae (or nymphs) live in the water where they feed and grow, sometimes for several years. Once fully grown, the larvae travel to the surface of the water and turn into adults, ready to fly away and live above the surface. Mayflies, dragonflies, and caddisflies all have this lifecycle.

Aquatic insects are a great way to tell how healthy a stream is. Some species only live in very clean water and so scientists all over New Zealand can assess the insects in waterways to help them identify the water quality.

**Tip**  
You can help aquatic insects by cleaning up rubbish from around waterways and making sure you and your family don't put anything nasty into streams or stormwater drains.

**Find the Correct Shadow**  
Which shadow belongs to who? Help the insects by finding the right shadow and draw a line to connect them.



# HOW TO SPOT THEM

Insects live all around us, and it can be fun to find all the different types! Read some of our tips to help you find insects yourself.

WHAT I'VE FOUND IN  
THE GARDEN:



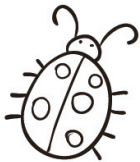
Help me  
find my  
friends!

## Find The Hidden Beetles

Can you spot the 7 beetles on these two pages? They are hiding somewhere in the garden. Let's see how good your insect spotting skills are!

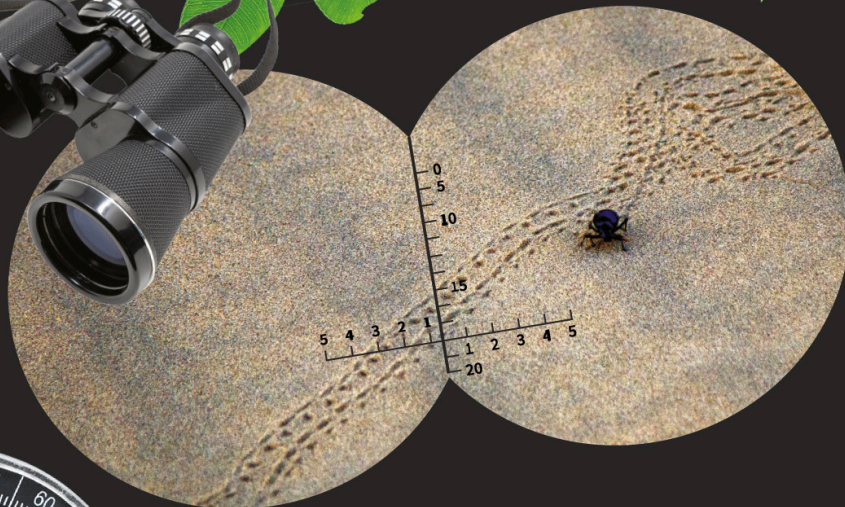
### Tip 1

Flowers attract lots of different species of insects. Try sitting quietly near flowering native plants and watch closely to see what comes to visit.



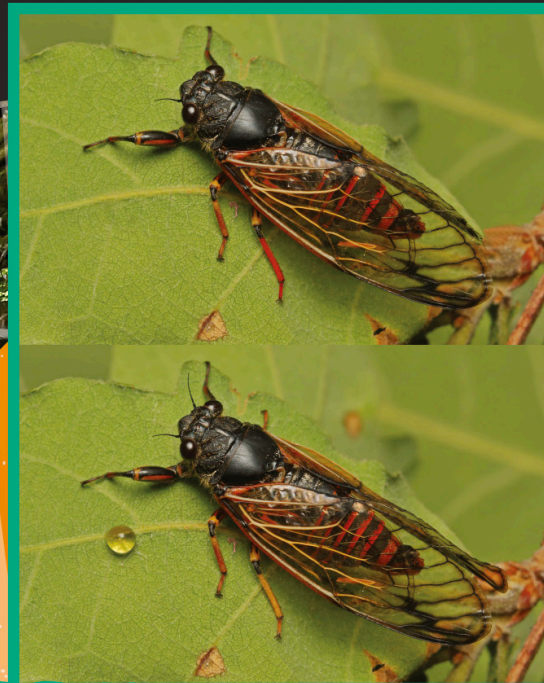
## Tip 2

Using a torch at night to look at tree trunks, in bushes and on the ground is a great way to find nocturnal insects. Be careful and make sure you have an adult with you.



## Tip 3

Even animals as small as insects give you clues that you can use to track them down. Try looking for footprints in mud or sand, or quietly following the sounds made by noisy insects like crickets and cicadas.



### Spot the Difference

These two images of a cicada look the same, but there are 7 differences! Can you find them and circle them all?

For the correct answer and solution, go to page 43.

# INTRODUCED SPECIES

There are two main ways that humans have introduced insects to New Zealand; accidentally or on purpose.

Many accidentally introduced insects are pests because they can damage crops, spread disease or harm native insects.

Some insects have been introduced on purpose because they do useful things like feed on weeds, or control other pests.

Wasp up?

These stripes are so flattering for my figure.

Because insects are so small, there are many different ways that they can arrive in New Zealand. They can arrive on ships and planes, in luggage after a holiday or in food. New Zealand has very strict biosecurity measures to try and stop any more unwanted insects getting into the country.

Which of these introduced insects is a harmful pest?

A



B



C



Answer: B. Common Wasp.

55

**Passion Vine Hopper**

56

**American Cockroach**  
*Kokoroīhe, Papata*

57

**Cabbage White Butterfly**  
*Pepe mā*

58

**Gorse Seed Weevil**  
*Pāpapa*

59

**Honshu White Admiral**  
*Pepe, Pēpepe*

60

**Common Wasp**  
*Wāpi*

**Fun Fact**

The Gorse Seed Weevil and Honshu White Admiral are examples of beneficial introduced insects. Both were introduced to New Zealand on purpose to help control weeds.



61

**Taurus Dung Beetle**  
*Pāpapa*

62

**Queen Alexandra's Birdwing**  
*Pepe, Pēpepe*

63

**Titan Beetle**  
*Pāpapa*

64

**Southern Hawker**  
*Kapokapowai, Kapowai*

I feel so  
impor-tant  
now!

65

**Leafcutter Ant**  
*Pōpokorua, Pōpokoriki*

66

**Australian Tiger Beetle**  
*Pāpapa*

Follow  
the leader!

Wait for  
me!



**Did you know?**

Tiger Beetles run so fast they can't see! They're so quick that their brain can't keep up and they need to stop regularly to make sure they're going in the right direction.

I'm an Atlas Moth. I'm the biggest moth in the world!



## STRONG, BIG AND FAST

Relative to their size, insects are incredibly strong and fast. The species shown in this category are not from New Zealand, but they certainly are superheroes of the insect world!

The world is full of incredible insects, each of which has evolved to live in its own unique way. The greatest diversity of insects occurs in tropical forests where it is very warm and humid, the perfect conditions for an insect to thrive!

I'm a Giant Titan Beetle, the Hulk of the insect world.

16cm - Actual size!

Wow you're one of the biggest insects I know!

### Fun Fact

Did you know, the insect that lives the longest is the African Mound-building Termite Queen. She can rule over her colony of workers for as long as 50 years!

### Fun Fact

They may be tiny, but fleas are one of the most impressive insects around. They can jump more than 150 times their own body length! That's like a human jumping 260 metres in the air!

You're a little chub-bee.

Just Bee-cause I like honey?

# GOOD FOR OUR LAND

Studying insects is an extremely important job because insects are essential to the survival of humans and just about all other species on this planet! From pollinating our crops to breaking down dead plants and animals, without insects the world would be a very different place.

One of their main roles in the natural ecosystem is to be a food source for other species. If we lost insects, we would also lose all of the species that rely on them for food and pollination.

Although all insects are important for many other animals, this category has some more beneficial to humans.

## Tip

Diversity is the key to a healthy ecosystem. By making sure there are lots of different plants and places for insects to hide in your garden you can increase its insect diversity.

Which of these beneficial insects help to control pests?



Answer B and C. The Steelblue Ladybird and Alexander Beetle help to control pests.

## Match the Spots Game

Can you help the ladybirds by finding the matching dots? Connect the similar dots by drawing a line.





67

**Honey Bee**  
*Pī honi, Ohu*

68

**Steelblue Ladybird**  
*Mumutawa*

69

**Alexander Beetle**  
*Pāpapa*

70

**Black Soldier Fly**  
*Ngaro*

71

**Spanish Dung Beetle**  
*Pāpapa*

72

**Hoverfly**  
*Ngaro*

Bee  
Kind!

**Fun Fact**

Black Soldier Fly larvae are extremely efficient at turning waste into biomass and are being used as a protein rich food source for chickens and other domestic animals.

# ARTS AND CRAFTS

## How to make your own Bug Hotel

Bug hotels give beneficial insects a safe, cozy home to shelter in, so they'll be right on hand to help fight pests and pollinate crops when the weather warms up.

The best part of building this house for bugs is gathering the materials. All you need to do is head to the backyard or take a hike to find your insect hotel materials.

### Step 1:

Head outside and collect some bug-friendly building materials, like sticks, bark, pinecones, nut shells, wood chips, moss twigs, bamboo pieces and leaves.

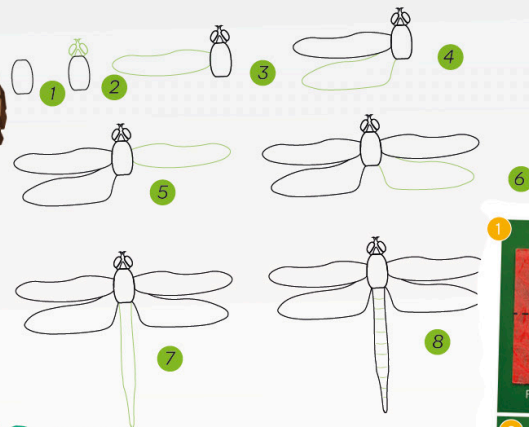
### Step 2:

Find a structure to build your home in. You can use a small wooden box. It works best if it has compartments.

### Step 3:

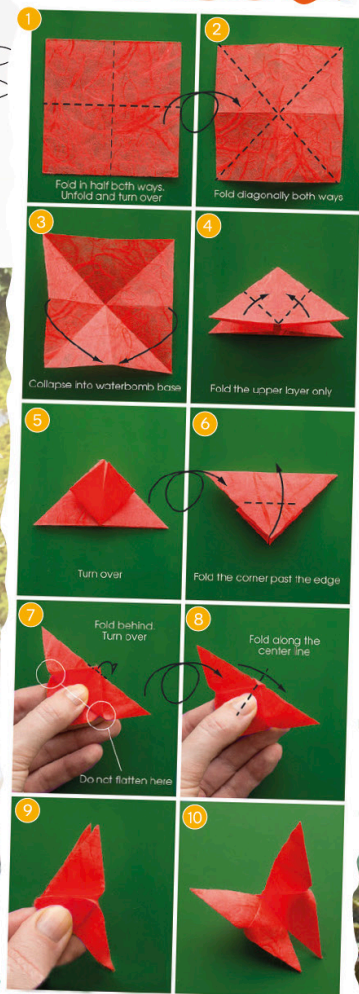
Build your bug hotel by placing your nesting materials into the box. Layer in the materials, bugs love nooks and crannies, so pack it in. You might consider making small compartments using different materials like toilet paper rolls to give the bugs a place to live! Once you're finished, place it outside in the garden or hang it in a tree. Take a step back and admire your handiwork!

There is no right or wrong way to make one of these, so have fun and remember to go and check up on it after a few weeks and see who has moved in!



## How To Draw A Dragonfly

Follow the 8 steps above to draw your own dragonfly.

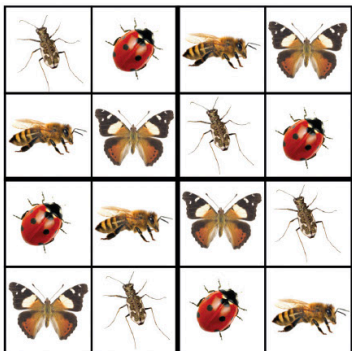


## Origami Butterfly

Cut out a square from a piece of colored card or paper. The bigger the piece, the easier the folds are to make. Follow these folding instructions to create your own origami butterfly.

Get an adult to help you.

# GAME ANSWERS

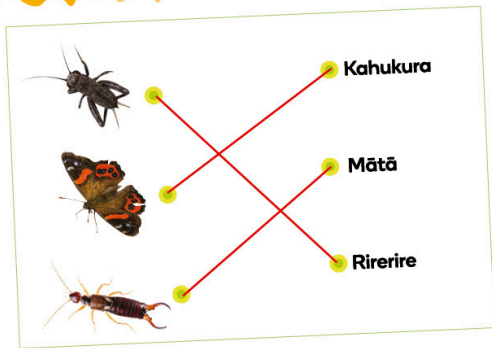


- ANT
- BEETLE
- BUTTERFLY
- CICADA
- EARWIG
- HAWKER
- HONEYBEE
- MAYFLY
- MOTH
- RINGLET
- WETA
- WEEVIL

E	R	I	N	G	L	E	T	W	A
N	E	R	C	M	O	C	L	E	R
W	A	B	W	I	G	I	S	E	N
O	E	U	Y	B	C	C	E	V	G
M	O	T	H	E	G	A	N		
A	N	T	A	S	N	E	D	L	W
Y	L	I	V	A	B	O	L	A	R
F	H	A	W	K	E	R	H	T	A
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Y	B	U	T	T	E	R	F	L	Y

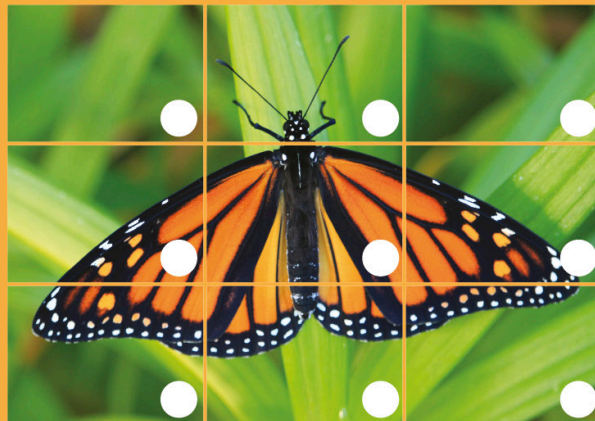
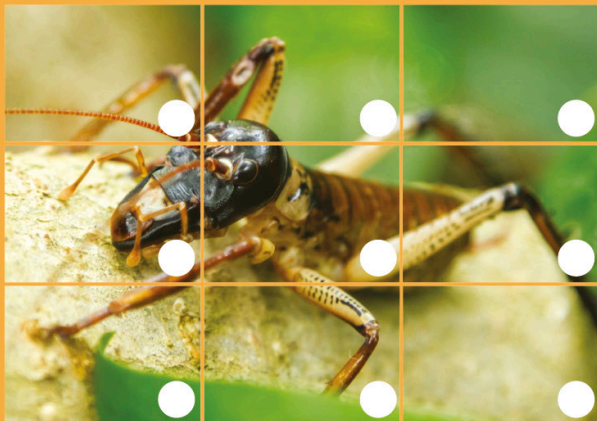
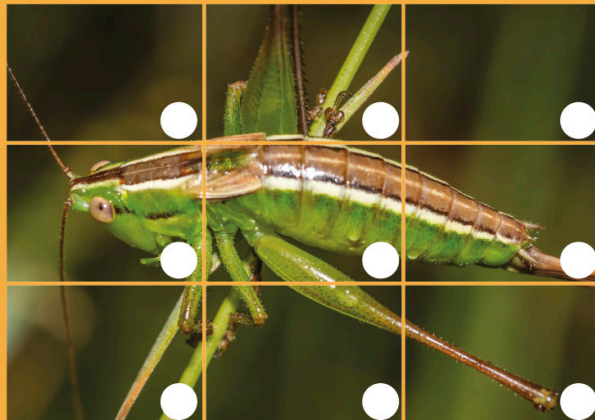
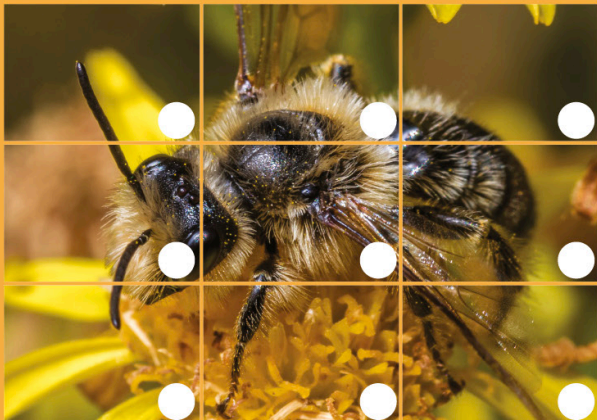


Hopefully you did a great job!





# PUZZLE CARD OVERVIEW





I'm Āwhina the  
Giant Wētā!  
Join me on a Super  
Insects Adventure  
here in Aotearoa!



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