

STAGE 1: DATA DETECTIVES

Stage 1: Science and Technology

Outcome: ST1-DAT-01

Stage 1: Mathematics

Outcome: MA1-DATA-01

WHAT TO EXPECT IN OUR ZOO WORKSHOP

In this workshop, students will be engaging with invertebrates to identify their observable features and group them based on their similarities. Through a Tree Shake activity, we will be collecting data on local invertebrates and using the results to create data displays of all the bugs we find! Your students will love how hands on this data collection activity while they're shaking trees and sorting invertebrates in the beautiful back gardens of our Backyard to Bush house.



LINKS TO CURRICULUM

Science and Technology

ST1-DAT-01: Collects, represents and uses data to identify patterns and relationships

- Collect data about the variety of living things in a local habitat, group them and justify the grouping

Mathematics

MA1-DATA-01: Gathers and organises data, displays data in lists, tables and picture graphs

Data A

Asks questions and gather data

- Gather data and track what has been counted by using concrete materials, tally marks, lists or symbols

Represent data with objects and drawings and describe the displays

- Use concrete materials or pictures of objects as symbols to create data displays where one object or picture represents one data value



INVERTEBRATES

WHAT ARE INVERTEBRATES?

Invertebrates are animals that don't have a backbone. They use something else to help with their support and protection, like an exoskeleton. An exoskeleton covers their bodies and offers protection and structure.

Invertebrates make up to 97% of all animals living on Earth. Did you know that for each person alive there is more than one billion invertebrates? They can survive almost anywhere including hot, dry deserts, freezing locations and underwater too.



INSECTS

Invertebrates that have six legs are called insects. Insects make up the largest group of animals in the arthropod group. An adult insect has a body that is divided into three parts. These parts are the head, thorax and abdomen. Their heads have a pair of antennae on them, which helps to sense the world. They not only use these antennae to touch, but also to smell. Lots of insects have wings too.

WHY ARE THEY IMPORTANT?

They play an essential role in the functioning of the planet. Such important roles include pollinators of food crops. They are a food source critical for many animals. We consider them the housekeepers of the planet as they decompose dead plant and animal matter, which helps to make our soil rich in nutrients.

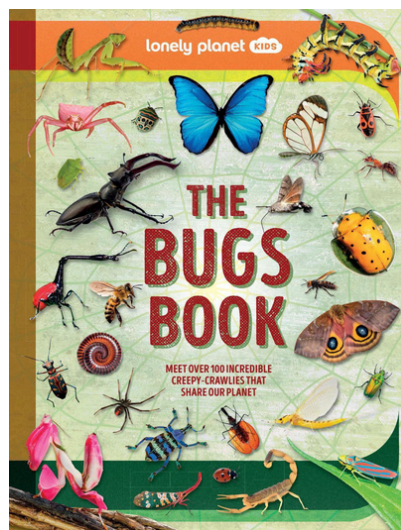
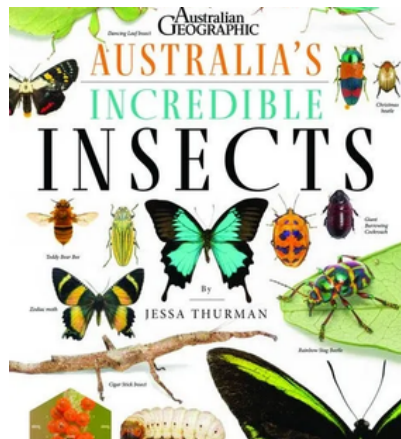
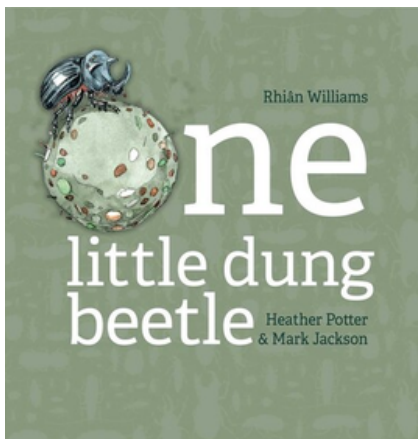
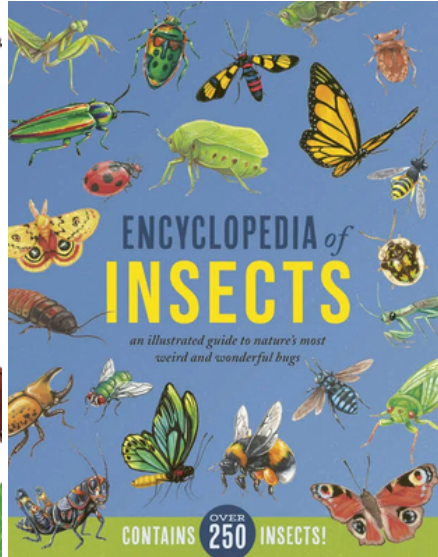
ARACHNIDS

Invertebrates that have eight legs are called arachnids. The most common arachnid that everyone knows is a spider, however it also includes scorpions, ticks and mites. Their body is divided into an abdomen and cephalothorax, which can also be fused together. They also have additional pairs of appendages, which are feelers (pedipalps) and fangs or jaws (chelicerae). These are used mainly for defense or feeding.



SUGGESTED LITERACY TEXTS

Please find below some suggested texts to support you at school.



FEATURES OF INVERTEBRATES

Pre-Zoo Visit

Animal features can include parts of their bodies. These features could include legs, wings, antennae, eyes, segmented bodies and even colours or patterns! Choose 2 different invertebrates and describe their features in the tables below.



Butterfly



Beetle



Ant



Bee





Cicada



Spider



My invertebrate I chose is a _____

Choose one invertebrate to and fill in the table to describe its features.

Wings	Legs	Colours or patterns	Eyes	Antennae
				

My invertebrate I chose is a _____

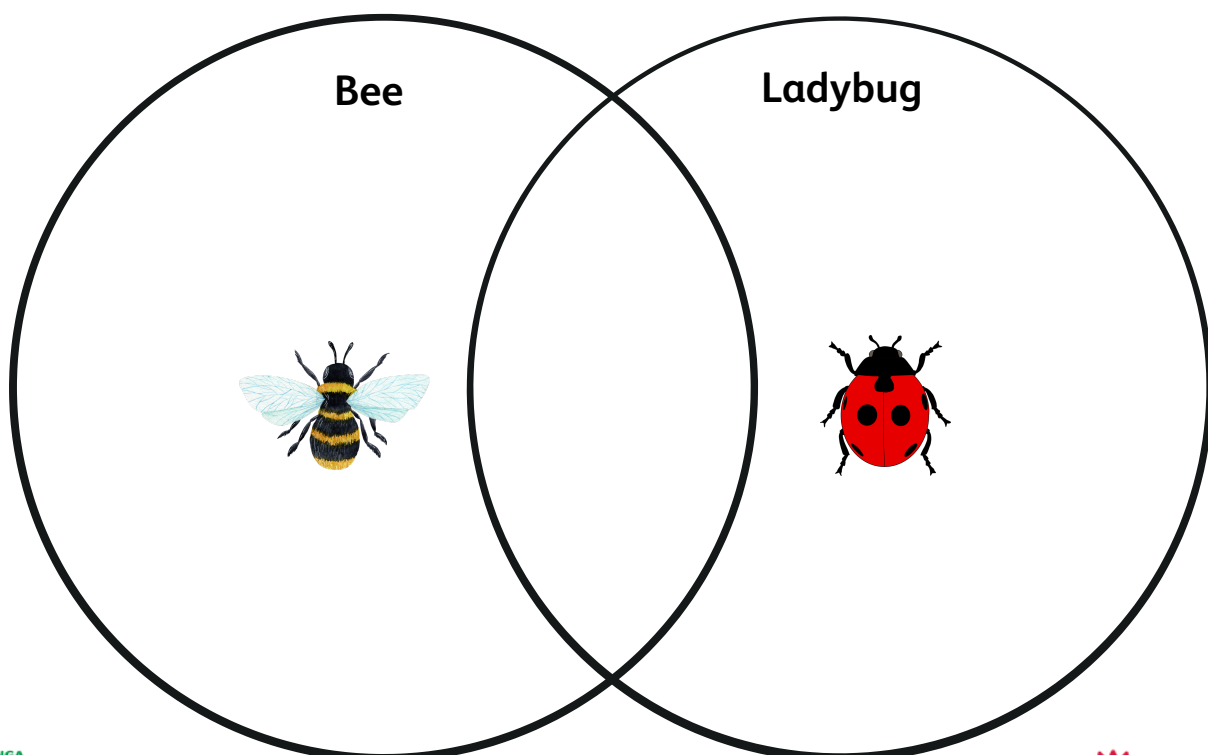
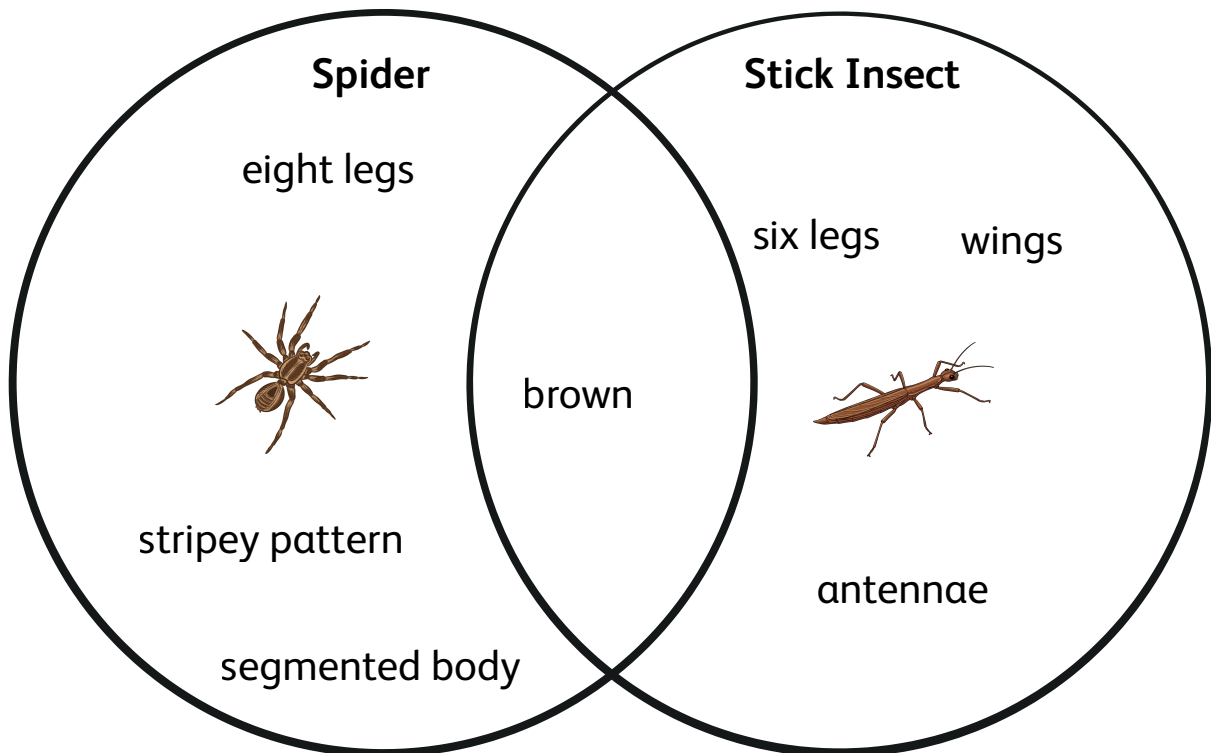
Choose one invertebrate to and fill in the table to describe its features.

Wings	Legs	Colours or patterns	Eyes	Antennae
				

LOOKING FOR SIMILAR FEATURES

Pre-Zoo Visit

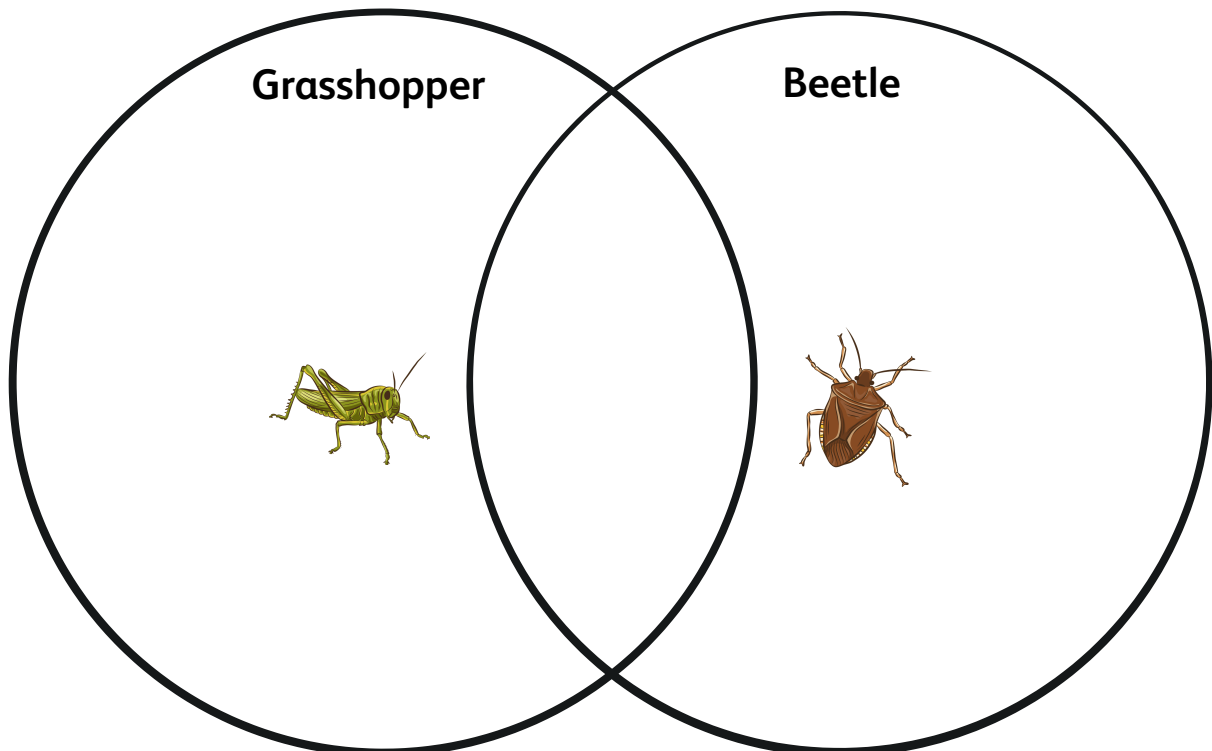
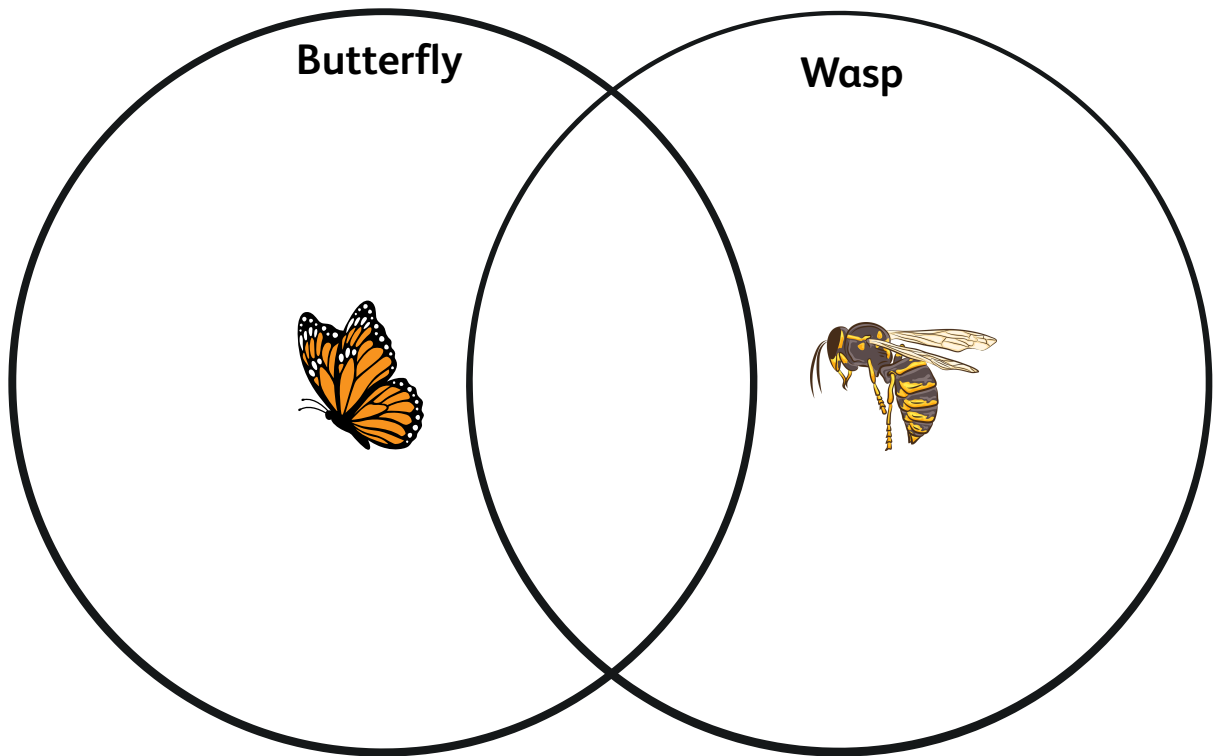
Can you find any similar features between two invertebrate animals? Using the Venn Diagram, write as many features as you can, remembering to write similarities in the middle. The first one has been done for you.



LOOKING FOR SIMILAR FEATURES

Pre-Zoo Visit

Can you find any similar features between two invertebrate animals? Using the Venn Diagram, write as many features as you can, remembering to write similarities in the middle.

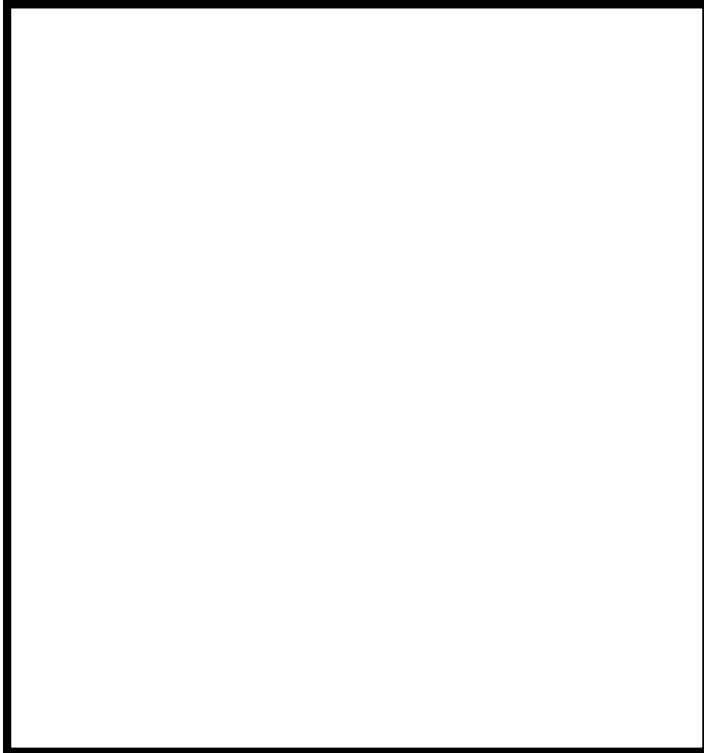


INVERTEBRATE SORT

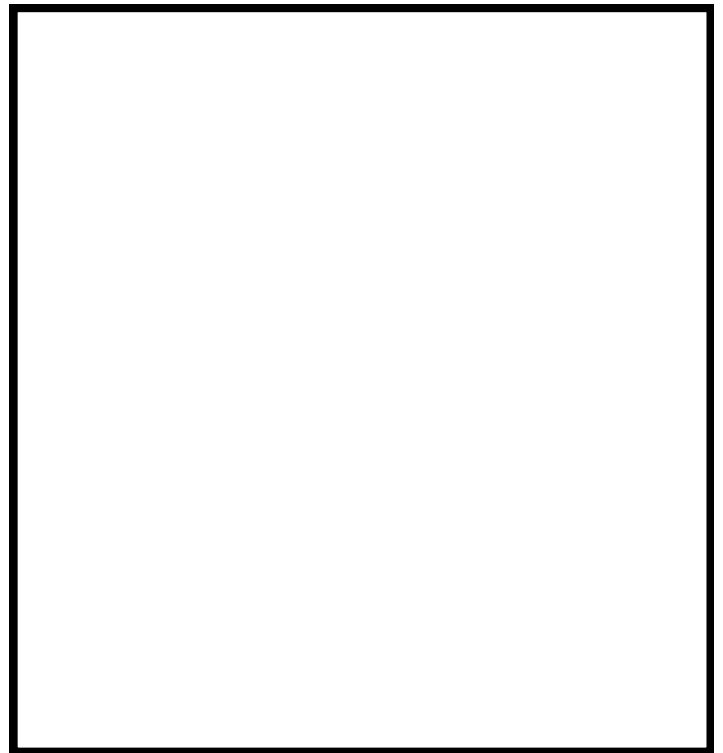
Pre-Zoo Visit

Invertebrates that have six legs are called **insects** and invertebrates with eight legs are called **arachnids**. Sort all of these invertebrates into the right box. Don't get tricked by their antennae!

Insects - six legs



Arachnids - eight legs



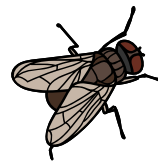
Wasp



Grasshopper



Cicada



Fly



Tick



Beetle



Spider



Ladybug



Dragonfly



Bee



Stick Insect



Butterfly

LOCAL HABITAT

Pre-Zoo Visit

What is a habitat? A habitat is an environment where plants and animals live. A local habitat is one that is close to your home or school. It can be in your street, in your suburb, near your school or even just in your area!

Draw a detailed picture of a local habitat. Be sure to include any plants or animals you could see in this habitat!








Can you name all the animals you might see in your local habitat?
(Don't forget about invertebrates!)

TREE SHAKE RESULTS

Post-Zoo Visit

After you complete your tree shake, use tally marks to display how many invertebrates your class found for each feature. Write the total number in the box at the end.

	TALLY MARKS	TOTAL
6 legs - insect 		
8 legs - arachnid 		
Wings 		
No wings		
Antennae 		
No antennae 		

TREE SHAKE RESULTS

Post-Zoo Visit

YOUR RESULTS

What invertebrate did you find? Try to name, if you can!

Fill in the blanks about your invertebrates features:

It had _____ legs

It was an insect / arachnid / something else (circle one)

It had wings / no wings (circle one)

It had antennae / no antennae (circle one)

What colour was it? _____

CLASS RESULTS

How many insects (six legged invertebrates) did the class find?

How many arachnids (eight legged invertebrates) did the class find?

How many invertebrates had wings? _____

How many had no wings? _____

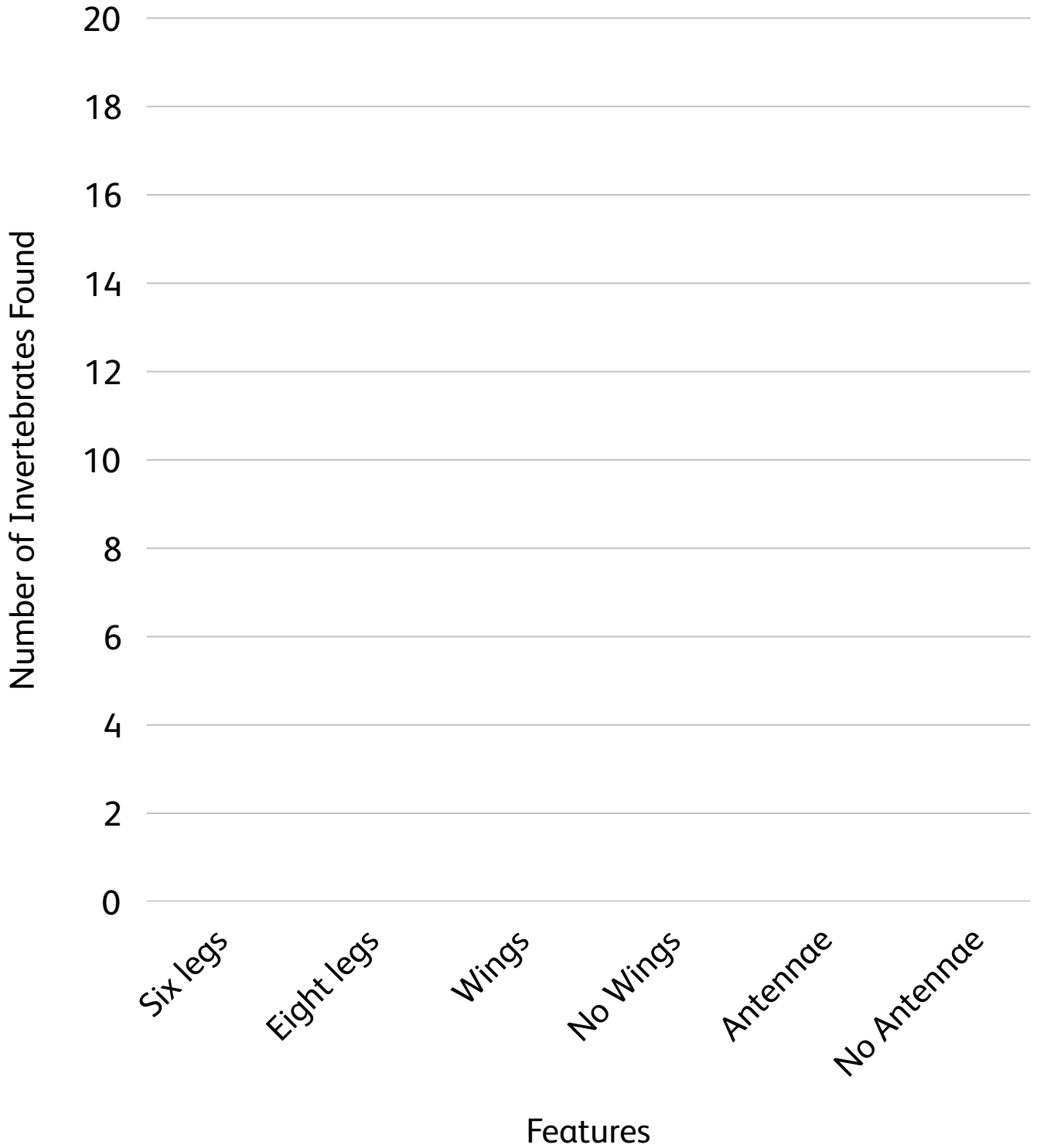
How many invertebrates had antennae? _____

How many invertebrates had no antennae? _____

How many invertebrates did you class find altogether? _____

GRAPHING YOUR TREE SHAKE RESULTS

Post-Zoo Visit



GRAPHING YOUR TREE SHAKE RESULTS

Post-Zoo Visit

Graph all the invertebrate colours that your class found.

