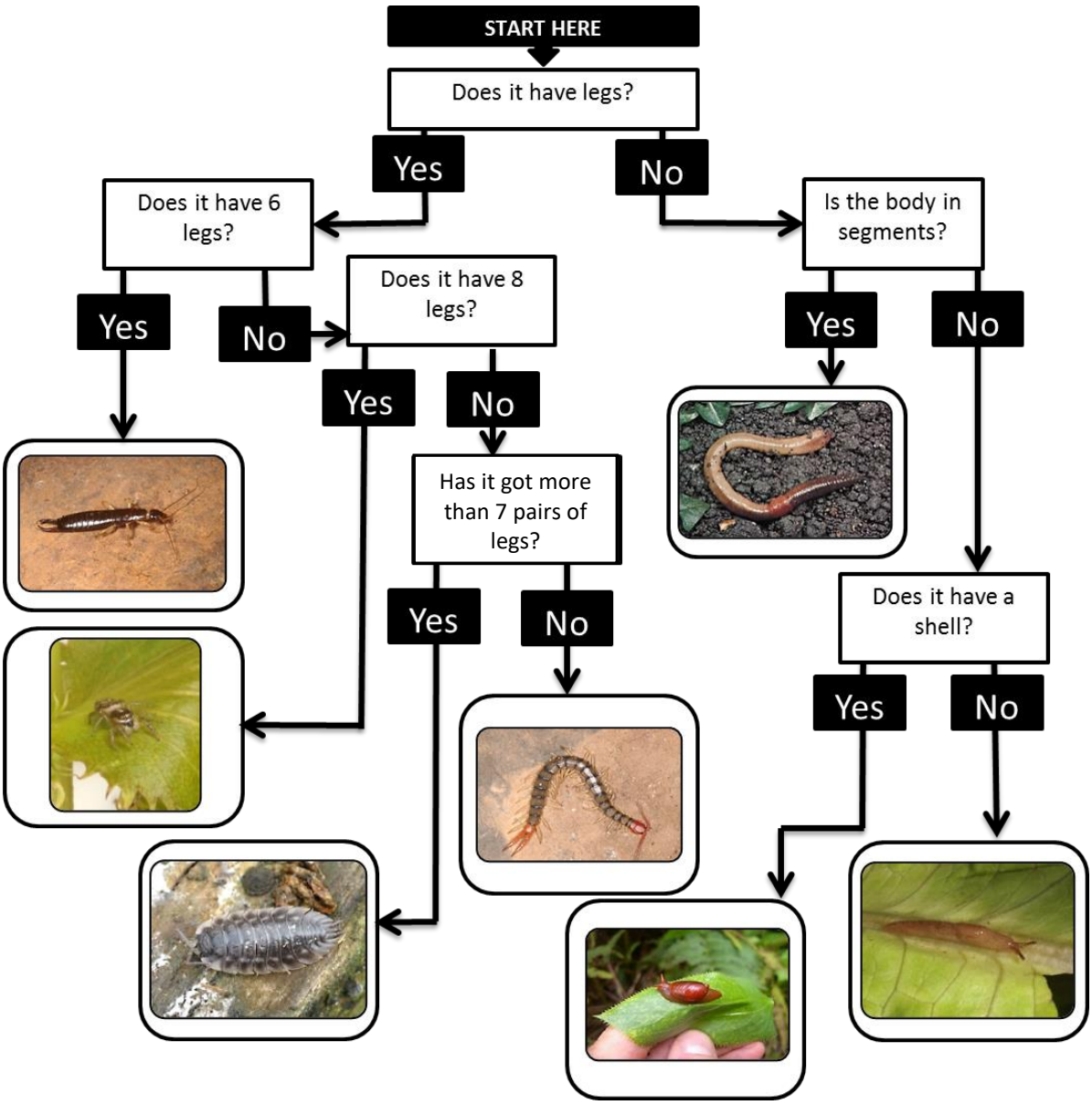
# Classification: Using Keys

## Answers:

Note to facilitator: We found selecting a bug and then working through the key features worked for us.



# Classification: Activity (1)

**Answers:** suggested answers, feel free to add your own.

Can you identify the bugs in the samples given? Remember, look at the key features and use a hand lens if you need to. You could refer to the bug books to help you identify the species.

You may want to identify the species family group, e.g. insect, and then their species. A magnifying glass or a hand lens will help you to take a closer look and observe key features.

| | | |
|---|---|---|
| 1.<br>Crustacean<br><br>(Common) Woodlouse<br>native | 2.<br>Insect<br><br>Springbok Mantis | 3.<br>Arachnids<br><br>Spiders<br>native |
| 4.<br>Insect<br><br>Cockroach | 5.<br>Insect<br><br>Flies | 6.<br>Insect<br><br>Beetles<br>Ladybird |

# Classification: Activity (2)

## Answers:

| | | |
|---|---|---|
| 7.<br>Insect<br><br>Ants | 8.<br>Mollusc<br><br>Snail | 9.<br>Insect<br><br>Leafhopper |
| 10.<br>Insect<br><br>Moth | 11.<br>Insect<br><br>Wasp | 12.<br>Worm<br><br>Earthworm |

# About the Common Wasp

Note to facilitator:

This species was chosen as the project target species (DPLUS104), this explains why this species is classed as invasive and St Helena facts. This information provides the background to building the wasp traps.

The **Invasive Invertebrate Project** was designed to help endemic bugs recover from predatory species, like the Common wasp. Part of the project is to find their **distribution on the island and seasonality.**

What we know:

- The common wasp was first recorded in 2005 and has spread island-wide.
- They are generalist feeders, (predating on all invertebrates), known as an invasive species as they compete with and prey on our native and endemic invertebrates; they can also be a risk to human health if stung.
- Highest wasp population is located at Diana's Peak with food readily available with its constant flowers and various flora throughout the year. Other nest sites include Thompsons Wood, Fairyland, Scotland, Woody Ridge and Casons.
- The common wasp feeds on nectar for energy and collect protein and carbohydrate food for the larvae.
- The control method used for the trials is an active toxic bait containing Fipronil, the adult wasp carries the poison back to the nest and distributes it to the larvae and the queen; leading to the collapse of the colony.
- In 2019, ANRD and Public Health treated 35 wasp nests, with a decrease in 2021 to 22 nests treated.

**IDENTIFICATION:**

The **Common wasp or European wasp** can be identified by:

- black and yellow body | triangular markings on the abdomen
- black antennae and yellow legs
- about the same size as the honeybee but the wasp is less hairy

**REPORT IT!**

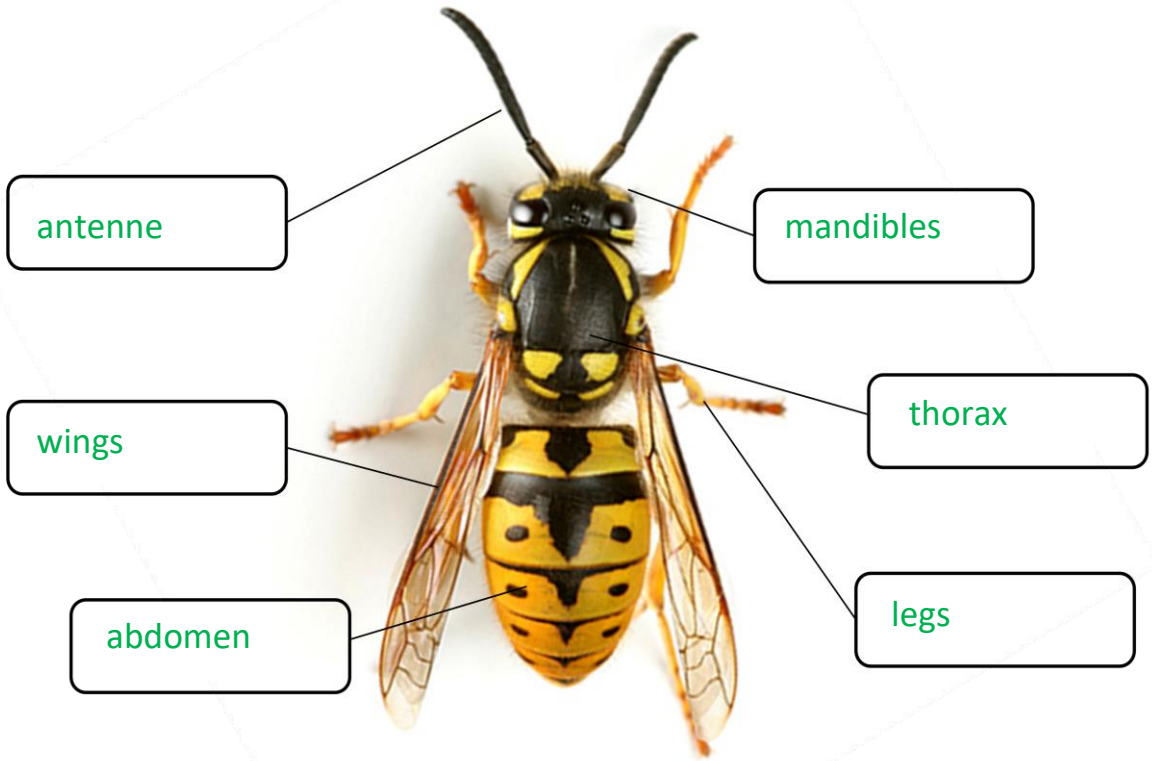
If you believe you have sighted a wasp nest, stay calm and do not interact with them as they could get aggressive. Contact the Trust Invertebrate Team for advice or treatment on 22224 or ANRD on 24724



## Anatomy of The Common Wasp

Use the word bank to fill in the diagram.

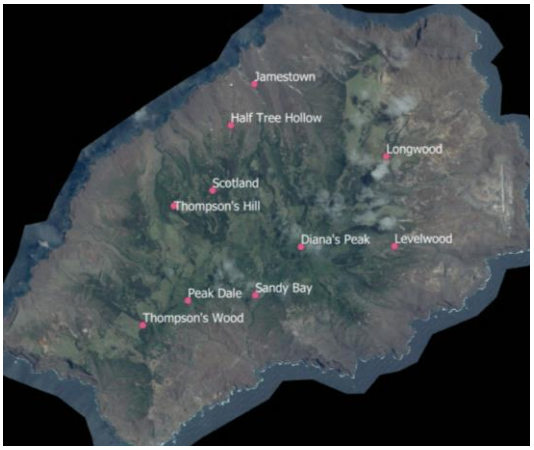
Note to facilitator: We found having samples that could be looked at closely and compared to the honey bee useful; discussion on the colouration and patterns, similarities and differences as many confused the species or had not had the opportunity to observe closely.




**Word bank:** legs, head, thorax, abdomen, antennae, wings, jaws (mandibles)

## Have you seen a wasp flying? Be a citizen scientist

Note to facilitator: Citizen science is a fantastic way where the community can be a part of the project, whilst the project obtains valuable information. Discuss with the group why this would prove a beneficial method.




Name (Optional):

Location:

Date/month:

Note to facilitator: It is the perfect opportunity to explain that we are looking at the Common wasp, but there are so many other invertebrate projects that we can do! It is great to put other ides out there; this could be something that participants could do with their families or schools could do as a class project.

## Other research projects

Invertebrate conservation projects are a good opportunity for other research questions:

1. Where did the data first come from? (History)
2. We know there are 455endemics species of invertebrates recorded, now find out how many native and non-native invasive species there are by using the species list. Make charts from your findings (Maths)
3. There are 320 insects, find out what kinds they are?
4. Research the causes of decreases and increases?
   - Habitat loss
   - Increase in predatory invertebrates
   - Habitat restoration
   - Climate change

5. From the species list, pick a name at random and research: Its taxonomy, Is it a carnivore, herbivore or omnivore?

6. What is the rarest species and when was it last seen?

## Wasp trap monitoring sheet

| | | | |
|---|---|---|---|
| **lure type used:** | **Marmalade solution** | **Location:** | **St Pauls** |
| **Date put out:** | **27.04.22** | **Weather:** | **sunny** |
| **Date collected:** | **30.04.22** | **Weather:** | **overcast** |
| **Surveyors (name):** | **SB** | **Approx. number of wasps in trap:** | **2** |
| **Surrounding plants (if known):** | **Grass, ginger** | **Flowering plants in area (if known):** | |

.....

## Wasp trap monitoring sheet

| | | | |
|---|---|---|---|
| **lure type used:** | | **Location:** | |
| **Date put out:** | | **Weather:** | |
| **Date collected:** | | **Weather:** | |
| **Surveyors (name):** | | **Approx. number of wasps in trap:** | |
| **Surrounding plants (if known):** | | **Flowering plants in area (if known):** | |

# Insect collecting resources (1)

Label the different part and write a brief description on how to use.

| | |
|---|---|
| Pooter <br><br>Capture ground dwelling bugs<br><br>Mouth piece with valve | Sweep net <br><br>Flying species |
| Hand lens<br><br><br><br>Enlarges the specimen<br><br>X 2/x4 | folding magnifiers<br><br><br><br><br>X10<br><br>Held to eye (inspector gadget!) |

# Insect collecting resources (2)

Label the different part and write a brief description on how to use.

| | |
|---|---|
| USB microscope<br><br>Portable microscope<br>X10 or more | Specimen vials<br><br>Prepared samples to have a closer look. |
| Bug tank<br><br>To keep bugs in to observe, e.g. butterflies: caterpillar, cocoon to butterfly | Forceps<br><br>Enables you to handle bugs safely. |

## Using a microscope




Note to facilitator: You do not need to go through this in depth as this is quite a lot, summarise the key points.

Microscopes help us see objects so small, that they would otherwise be unseen by the human eye. The word *microscope* is derived from the Greek words *micro* (small) and *scope* (look at), they are very delicate, so need to be treated carefully.

There are many worksheets that you could learn more about the different parts of the microscope. We just need to learn how to find our samples.



The specimen is placed in a slide, we use petri dish with the water (or preservative) using a syringe/pipette; forceps are used to locate and position the bug.

Finding the Specimen: Place the petri dish on the stand. Use the 'rough focus' lens to find the specimen. Once you have found the specimen, centre it by moving the slide very slowly.



⇧ To move toward the centre, you have to move the sample up.

⇦ If you want to move right you have to move the slide the opposite direction you want your specimen to go.

⇨ If you want to move left you have to move the slide the opposite direction you want your specimen to go.



Once you have found your specimen, you can begin to magnify it. Change to fine focus, you may have to attempt to find your specimenagain.

Live specimens do not like light, so with less light, you are often more successful in finding the specimen.

## Bug hunt Investigation **Answers:** Complete the tables by ticking or writing where you found each invertebrate.

| |  In the Sky |  On plants |  On bark |  In Soil |  Under stones |
|---|---|---|---|---|---|
|  Slug | | ✓ On wet days eating plants | | | ✓ Like damp and cool places so they won't dry out |
|  Bee | ✓ Flying to get from one place to the next | ✓ Often seen on flowering plants to collect nectar and pollinate | | | |
|  Ladybird | ✓ Flying to get from one place to the next | ✓ Hunting on plants for food like aphids | | | |
|  Beetles | | ✓ Some beetles can be found on plants and flowers | ✓ Some beetles eat dead wood and bark | ✓ Some beetles live underground | ✓ Some beetles hide under stones until night fall |
|  Woodlice | | ✓ Some woodlice climb trees to eat the algae on moist plants and places | ✓ Some eat algae of bark and hide there too | ✓ They can be found in soil hiding in leaf litter | ✓ They like damp and cool places to hide |
|  Caterpillars | | ✓ Most can be found on any kind of plants | | ✓ Some beetle larvae which look like caterpillars live in soil | |
|  Spiders | | ✓ Spiders make webs between plants to catch prey | ✓ Some make webs in between bark for their homes | The Mole Spider can be an example of living in soil | ✓ Many spiders are found under stones or in stone walls |
|  Ant | | ✓ They can be found on flowering plants or where there are aphids | ✓ They can crawl up bark of trees to get to a food source | ✓ They usually make nests in soil and have pathways to get to foods | ✓ They can be found under stones and in stone walls |
|  Millipedes | | | ✓ When there are heavy rains, they can be seen crawling up bark. | ✓ Sometime they hide in rich soil like compost and under leaf litter | ✓ Found under stones in cool damp places |
|  Earthworms | | | | ✓ Found in any soil, see more when it is damp or raining | ✓ Sometimes found under rocks close to the damp surface |
|  Centipedes | | | | ✓ Found in leaf litter, damp or dry soil depending on species | ✓ Found under stones or walls where it is cool and damp |

## Big headed ant identification

From the photo, can you identify if these are minors, soldiers or the queen. Is there a queen in this photo?

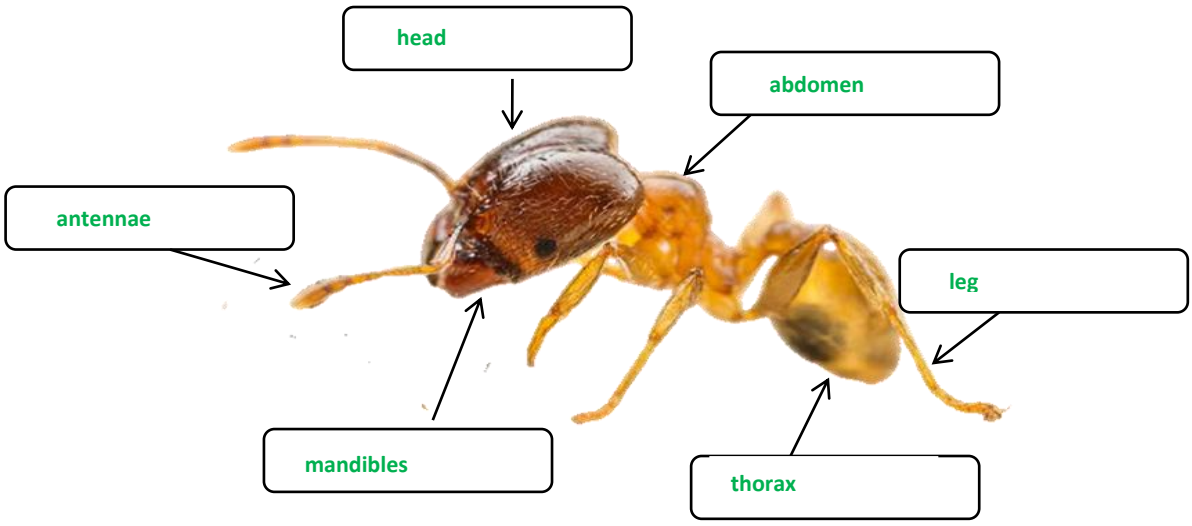
## Answers:




## Ant anatomy

Can you label the different part of the ant?

## Answers:




**Word bank:** jaws (mandibles), legs, head, thorax, abdomen, antenna