



# The big bug hunt 2021

Discover what is right at your feet!

# What is the 'big bug hunt'?

- For two weeks, you will use your creativity and practical skills to plan, design and engineer ways to **catch and record as many different types of bugs as you can** in any location convenient for you (like a garden).
- You can team up with others to share and collaborate results and ideas.
- You can build your own insect traps, testing different methods of baiting/attraction.
- You will just be asked to document what you did, how you did it, what you caught, and how you could improve it if you did it again.

# Stage 1- Getting to know the tiny world around you.

In this stage you will find out the types of bugs you might catch and how to identify them using this pdf guide.

## Invertebrate Identification Guide

This guide can be used for the OPAL Bugs Count Survey and OPAL Biodiversity Survey

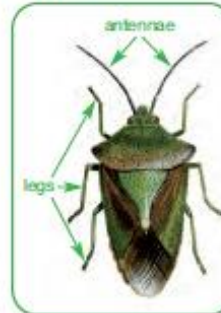


Invertebrates are animals without a backbone. They come in many shapes, sizes and colours. This chart covers what you are most likely to find during an OPAL survey: insects, arachnids, molluscs, myriapods and crustaceans.

You don't need fancy equipment to survey bugs. Your eyes are your most important tool, but these may help too:



a magnifier    pencil and paper    a camera    a jar (to put bugs in while you identify them)



Main features used in this guide

### Start here – how many legs?

<p><b>no legs</b></p> <p><b>Molluscs and annelids</b></p>	<p><b>6 legs</b></p> <p><b>Insects</b></p>	<p><b>8 legs</b></p> <p><b>Arachnids</b></p>	<p><b>lots of legs</b></p> <p><b>Myriapods and crustaceans</b></p>
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Now try to name your invertebrate using this guide →

### No legs

### Molluscs and annelids

### Snails, slugs and earthworms

#### Snails

- Soft, slimy body
- Hard, coiled shell
- Shell can vary from a sphere, to a flattened disc or a pointed spire



#### Slugs

- Soft, slimy body
- Do not have a hard, coiled shell (although a few species have a tiny disc of shell towards the end of their body)



#### Earthworms

- Long, thin body divided into segments (which look like a series of rings or stripes)
- Thickened 'saddle' visible on adult worms



- There are around 150 species of land snails and slugs in the UK.
- They belong to a group of molluscs called Gastropoda which means 'stomach-foot'!
- Earthworms belong to a group called Annelida – the segmented worms. There are 27 species in the UK.
- Slugs, snails and earthworms all need to keep their skin damp so that they can breathe. They are particularly active at night and when the ground is wet.
- All three groups are a vital food source for many other animals, including birds, mammals and amphibians.

#### Did you know?



Reaching an incredible 16cm long, the Leopard Slug (scientific name *Limax maximus*) is one of the UK's largest slugs.

It eats fungi, rotting plants and other slugs. When mating, a pair of Leopard Slugs will often hang from a thread of mucus (slime).



Discover more about slugs and snails on the Conchological Society's website [www.conchsoc.org](http://www.conchsoc.org)  
For earthworms visit [www.earthwormsoc.org.uk](http://www.earthwormsoc.org.uk)

# Stage 2: Tactical planning for maximum captures!

- Probably the most crucial stage...In this stage you will decide **where and how** you will trap/record.
- Have a look around, under logs, rocks etc. try to find 2 different habitats to compare.
- Write a hypothesis (*a question or idea you can test*); for example, 'There will be a difference in types of invertebrates found in shaded areas vs open areas'

Trap/capture site	Type of invertebrate	Number caught
Hedge 1	Greenfly	15
	Shieldbug	1
	Caterpillar, green	7
Light trap 1	Purple moth	4
	Green wasp	6
Pitfall traps	Ground beetle	10
	Millipede	3
	Earwig	6

...the next slide will help you with deciding some ways to trap.

# Help with Stage 2:

- Watch the two videos: our goal is **NOT** to kill what we catch, so ignore the “ethanol for collection”. Also, you are not required to buy any special equipment, these are optional.

<https://www.youtube.com/watch?v=ys53gwBmYnA>

- <https://www.youtube.com/watch?v=VZIQ8ayoTMg>



## Stage 3: Top tips for using/ setting up equipment.

- If using **pitfalls**: Dig them so the top is slightly lower than the ground level. Put them out early in the morning and leave for at least one night.
- **Light traps**: Put out late in the afternoon and check in the morning or during the night when it is cool.
- **Nets/ sheets/ hand captures**: Trial at different times of the day. Afternoons tend to be best.
- **Funnel/ baited traps**: Leave for a full day and night.

# Stage 4: Recording and reporting

- There are many ways to record your captures, but tables provide the easiest way.

Things to record on the day:

- Temperature, general weather e.g. “cloudy”.
- Date and time.
- Habitat type: Grass, hedge, tree, leaf litter, woods, flower bed.
- Take photos of and hard to identify creatures and number them in the order you found them: for example: ‘unknown 1’

Example of table

Trap/capture site	Type of invertebrate	Number caught
Hedge 1	Greenfly	15
	Shieldbug	1
	Caterpillar, green	7
Light trap 1	Purple moth	4
	Green wasp	6
Pitfall traps	Ground beetle	10
	Millipede	3
	Earwig	6
	Unknown 1	12

# Stage 4: Final report

In the real world, when you conduct new research, like you have, people must be able to recreate it to check its reliability (see how true and useful it was) and use your methods to improve future research.

Therefore, you must:

- 1) Write a short paragraph on how and where you set your traps or did your hunting; including any photos of the site and equipment to say how you carried out your bug hunt.
- 2) Draw a neat table of your results or graphs you made from them. Include photos of your bugs and traps.
- 3) Conclude (summarise) what you found from your research; this could be how many species you found, which method caught the most, at which site there were most species etc.
- 4) Suggest how you could improve your results - repeating and averaging? Trapping for longer/shorter, using more techniques, doing it at a different time of day/year, making traps better etc

*This should be no more than 3 sides of A4, max. and can be made into a display poster.*

*Do please share any unusual captures or ingenious traps you made!*



# My example report: (can be a poster)

## Mr Holmes' big bug hunt

My hypothesis: Are there more species of invertebrates in sheltered areas?

My prediction: I believe I will find more invertebrates in sheltered areas than in open areas.

### SITES & PLAN

- Traps used: 10 x pitfall at each site.
- Traps put out 7pm 5/7/2020, collected in at 7pm 8/7/2020.
- Weather: Cloudy, no rain, 9-16°C

Site A & B: Under bushes at edge of garden.

Site C&D: Front garden, on open soil, no cover.



Barrier placed between traps to force animals along into trap.

### Results

Trap/capture site	Type of invertebrate	Number caught
A	Greenfly	15
	Shieldbug	1
	Caterpillar, green	7



### Findings/conclusions:

The sites that were undercover (A&B) had a higher number of species in total, 6 compared to the open soil sites (C&D), 3. Suggesting that more invertebrates prefer covered areas. Sites A&B also had more invertebrates in total, 32 vs sites C&D, 15.

There was also a big difference in the type of invertebrates between sites A&B vs C&D; for example no millipedes or centipedes were found in A&B, but were found in C&D. Whereas A&B had lots of greenfly, but none were found in C&D. Centipedes and millipedes are carnivores, so maybe they like to hunt out in the open, where as greenflies are generally prey so it is possible they like cover to hide from predators, this could also be similar for moths.

Overall, my results show that there are both more and more types of invertebrate found in sheltered sites, which matched my prediction. There is also an obvious difference in the types of invertebrates found at each site; with predators preferring open areas and prey preferring cover.

What to do next:

Email your photographs and reports, by Sunday 15<sup>th</sup> August, to:

[scicomps@ongletonhigh.com](mailto:scicomps@ongletonhigh.com)

Don't forget to include your **full name** and **primary school**.

Good Luck!