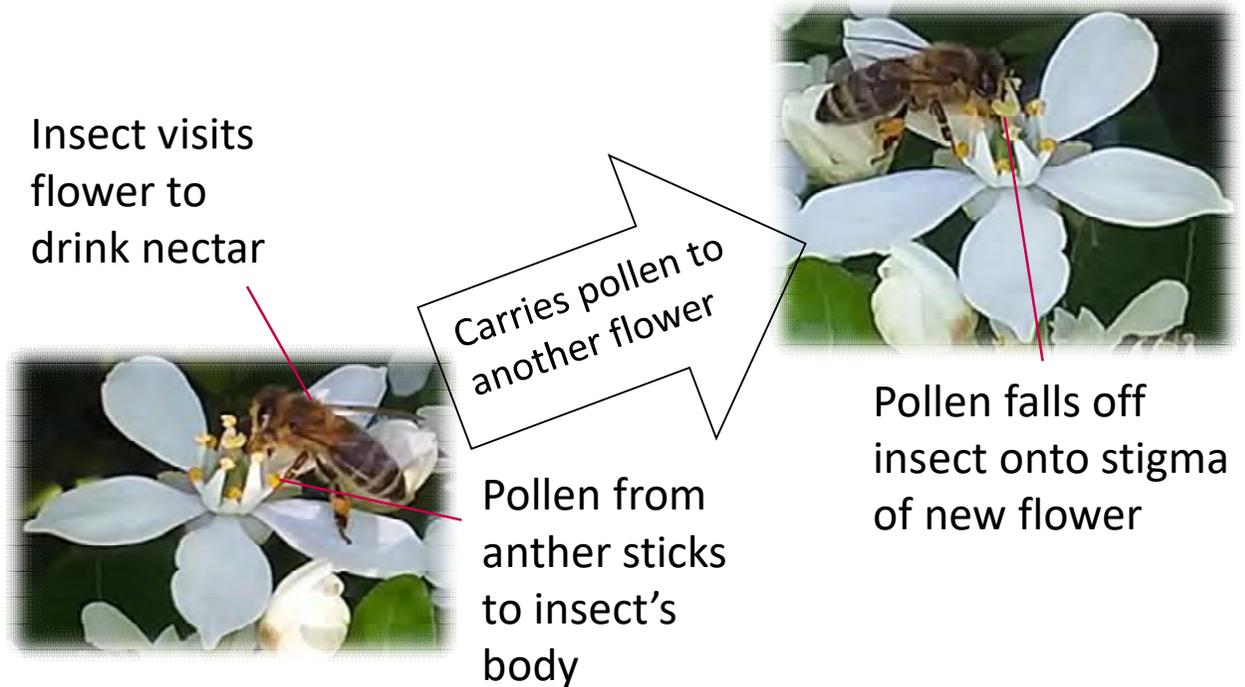


Insects are the key workers of the animal kingdom doing really important jobs, such as **pollination**, to keep the natural world working.

For flowering plants to reproduce, pollination must occur. In most flowering plants this is done by insects.



You are going to investigate the insect pollination going on around you.

Investigating Insect Pollination

In this investigation you are going to observe insect pollination happening in your garden or on a walk in your local area. You are going to record your observations and then evaluate your findings to see if you can draw any conclusions.

What you will need:

- Recording Sheet
- Pen/pencil and Clipboard (or something else to lean on)
- Camera/phone to take pictures to help identify insects and plants on returning home

What to do:

1. Go for a walk in your local area and look for flowers. Alternatively, you could observe the flowers in your garden or school grounds. When you find a flower, observe it for some minutes and see if any insects land on the flower, possibly helping to pollinate it.
2. Use the recording sheet to describe the flower and record which type of insects visited it. You don't need to know the exact species of insect but try to record the Order (or group) that the insect belongs to. The next slide has information about how to identify insects – have a look at it before you begin the activity.
3. Find another type of flower and repeat the process, using a new recording sheet.
4. If you want to find out the exact names of insects and/or flowers, take photographs to help you identify them when you get home. If you already know the insect species you can write it in the “Extra Notes” section of the table.

How to identify insects

In this activity, when you see an insect, work out which Order it is from, and record how many of each Order of insect you see. See below for the 5 main Orders, which are shown on your recording sheet.



Beetles
(Coleoptera)



Bees, wasps
and ants
(Hymenoptera)

Butterflies
and moths
(Lepidoptera)



Flies
(Diptera)

These are the 5 Orders of
insects you are most likely
to see.



True Bugs
(Hemiptera)

If you want to identify some insects further, you can take photographs and then try to identify the species of insect when you get home. On the next slide are some websites you can use.

How to identify insects using the internet

There are some great wildlife ID resources on the internet. Here are a few of our favorites:

General

[OUMNH Learning Zone: Insects instant ID](#)

[OPAL: Freshwater Invertebrate Identification Guide](#)

[OPAL: Invertebrate identification guide](#)

[Nature Detectives: Flying insect spotter sheet](#)

[Polli:Nation: Identifying pollinators](#)

[RSPB: Spot it minibeasts 2](#)

[Woodland Trust Blog Post: Common UK Insect Identification](#)

Apps

There are phone apps that will help identification and some also provide data for scientific research projects:

<https://www.inaturalist.org/>

<https://www.ceh.ac.uk/citizen-science-apps>

<https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/british-trees/tree-id-app/>

Ants, bees and wasps (Hymenoptera)

[Wild About Gardens: Bee identification](#)

[Wildlife Watch: Bee detective](#)

Beetles (Coleoptera)

[Nature Detectives: Beetle ID](#)

[Nature Detectives: Ladybird ID](#)

[Wildlife Watch: Beetle detective](#)

[Wildlife Watch: Ladybird detective](#)

Butterflies and Moths (Lepidoptera)

[OPAL: Moth tips 2 a guide to common British moths](#)

[Nature Detectives: Beautiful butterflies](#)

[Nature Detectives: Butterfly caterpillars](#)

[Nature Detectives: Moth caterpillars](#)

[Wildlife Detective: Caterpillar detective](#)

[Wildlife Detective: Country butterfly spotter](#)

[Wildlife Watch: Hawkmoth detective](#)

[Wildlife Watch: Moth Spotter](#)

[Wildlife Watch: Night time moth detective](#)

[Wildlife Watch: Woodland butterfly spotter](#)

Dragonflies and Damselflies (Odonata)

[OPAL: Guide to dragonflies and damselflies](#)

[Nature Detectives: Dragonflies and damselflies](#)

[Wildlife Watch: Dragons and damsels](#)

True Bugs (Hemiptera)

[Wildlife Watch: Shieldbug spotter](#)

True Flies (Diptera)

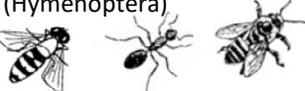
[BNA: ID guide hoverflies](#)

Recording Sheet – Investigating Insect Pollination

Date: _____ Start time: _____ End time: _____

Weather conditions: _____

Describe the Flower (colour, shape, size and name if you know it):

Type of Insect	Identifying features	Tally ()	Total Number of Insects	Extra notes
Beetles (Coleoptera) 	Outer wings form a hard case			
Flies (Diptera) 	Have one pair of thin, transparent wings			
True bugs (Hemiptera) 	Have mouthparts adapted for piercing and sucking			
Bees, Wasps and Ants (Hymenoptera) 	Most have two pairs of thin, transparent wings and a narrow 'waist' between thorax and abdomen			
Butterflies and Moths (Lepidoptera) 	Wings are covered in tiny scales			
Other insects				

What have you found out?

Now you have collected your data, it's time to interpret your results. Have a look at your recording sheet and think about what your observations show. Are there any patterns? Do your observations provide the answers to any questions?

For example:

- What type of insects did you see visiting flowers? Which were visiting flowers the most?
- Were there any types of insects that you did not see visiting flowers?
- Which flowers had the most insect visitors?
- Which type of insect visited the most different flowers?
- On your walk did you spot any patterns or anything that looked interesting or surprising?
- Did you spot insects that were not landing on flowers? Were they doing anything interesting or unexpected?

Design your own experiment

You have already learnt lots about pollination and insect activity! What else would you like to find out? Can you think of a question and design your own experiment to find the answer? There are some ideas on the next page to get you started and a sheet for you to plan your investigation.

Remember to think about:

- o Keeping all variables the same, except the one you are testing, if your experiment is a fair test
- o Repeating your experiment to get more reliable results
- o How to record your data carefully to make sure it is accurate

Check out the other example investigations on our website for help and ideas.

Possible Investigation Questions

- Are pollinating insects busier at different times of day?
- Do specific insects prefer specific flowers?
- What insects visit a specific plant species?
- Do some insects prefer plants of a specific shape, colour or size?
- Are some plants only visited by certain insect species?
- Do insects prefer flowers in the sun rather than in the shade?
- How does weather affect insects visiting flowers?
- Are all the insects seen on flowers pollinating them? How can we find out?

Planning your Investigation

Planning your question

Your investigation question

I am trying to find out...

Make a prediction

I predict that...

Method – doing your experiment

What will you do?

What will you need to keep the same?

Equipment – What will you need?

What will you observe or measure?

How will you record your findings?

e.g. photographs, tally chart, table

Things to do next



Plan and conduct your own investigation.



To see an example of an investigation have a look at our “Insect investigation: different Flowers” activity.



Have a go at our “Bee experiment – Times of day” activity.

Acknowledgements

We hope you enjoyed learning about insects. This is one of a series of resources from the HOPE collection of British insects at the University of Oxford Museum of Natural History.

You can find more about the Hope for the Future Project on our website: oumnh.ox.ac.uk/hope-future

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