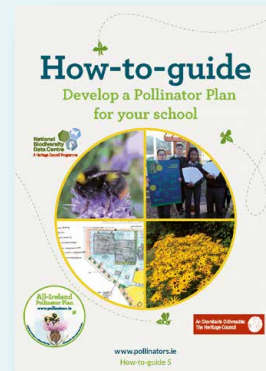


03

Lesson Plan

Who are the pollinators in Ireland?



Objectives

In this lesson, students will:

- ✓ Learn about Irish pollinating insects, who they are and the diversity of insect groups.
- ✓ Learn how to look for pollinating insects outdoors.
- ✓ Learn how to fill in a survey sheet & discuss their results.
- ✓ Learn about the main pollinators in Ireland: bumblebees, solitary bees, the honeybee, and hoverflies.



Refer to our Resources at www.pollinators.ie/schools for background facts



What is a Pollinator?

Background:

Pollinators are animals that help to pollinate plants.

In Europe most pollination is done by insects, especially bees.

When you see bees and other insects buzzing around the garden, they are adults looking for food. Bees have special hairs on their body that pollen gets stuck to. When bees get covered in pollen, they spit on their front legs and brush the pollen into a sticky ball that they store on their back legs. They do this because the baby bees (larvae) back in the nest need to eat pollen to grow strong.

Adults need a lot of energy to collect pollen for their babies. They get this energy from nectar. Nectar is the sweet, sugary liquid inside flowers - bees are crazy about nectar! As the bee goes from flower to flower throughout the day collecting nectar and pollen, they are like a delivery person, bringing the pollen from one flower to the next. And once a flower gets pollen from another flower of the same kind it can start to make seeds which will eventually grow into new plants. In return for their help, plants make lots of pollen so that the bees can bring the extra pollen home to feed their babies.

Who are the pollinators in Ireland?

Bees



Most pollination of crops and wild plants is carried out by bees.

Flower Visiting Insects



The rest is provided by various other flower-visiting insects, including Flies, moths, wasps, beetles and ants.

After bees, Hoverflies are the most important pollinators.

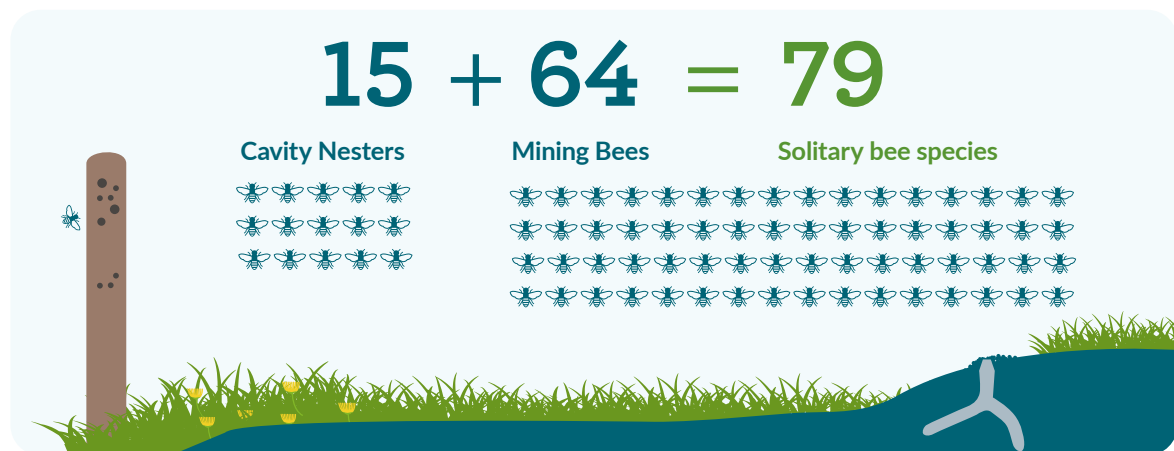
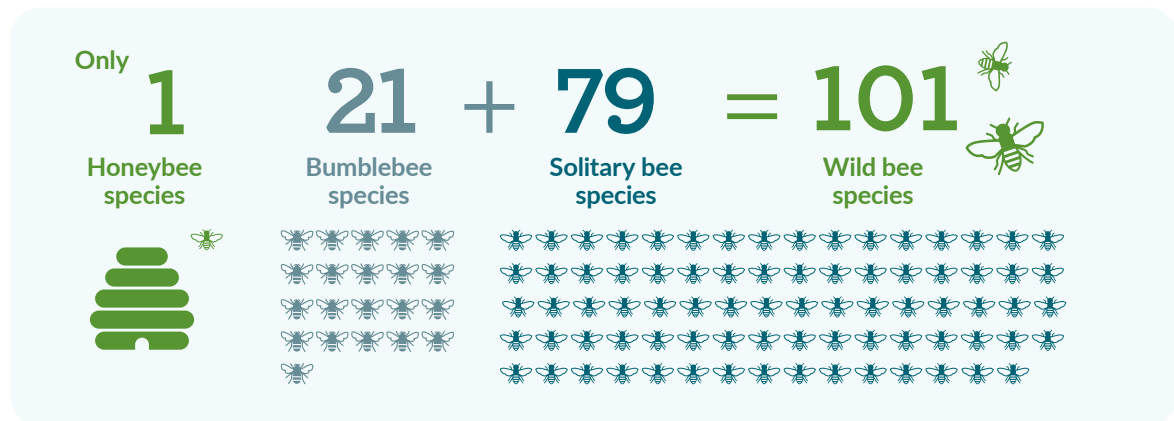


Ireland's Wild Bees

In Ireland we have **1 honeybee** species; **21 bumblebee** species and **79 solitary bee** species.



Wild Pollinators



Activities for Junior Infants to 3rd Class:

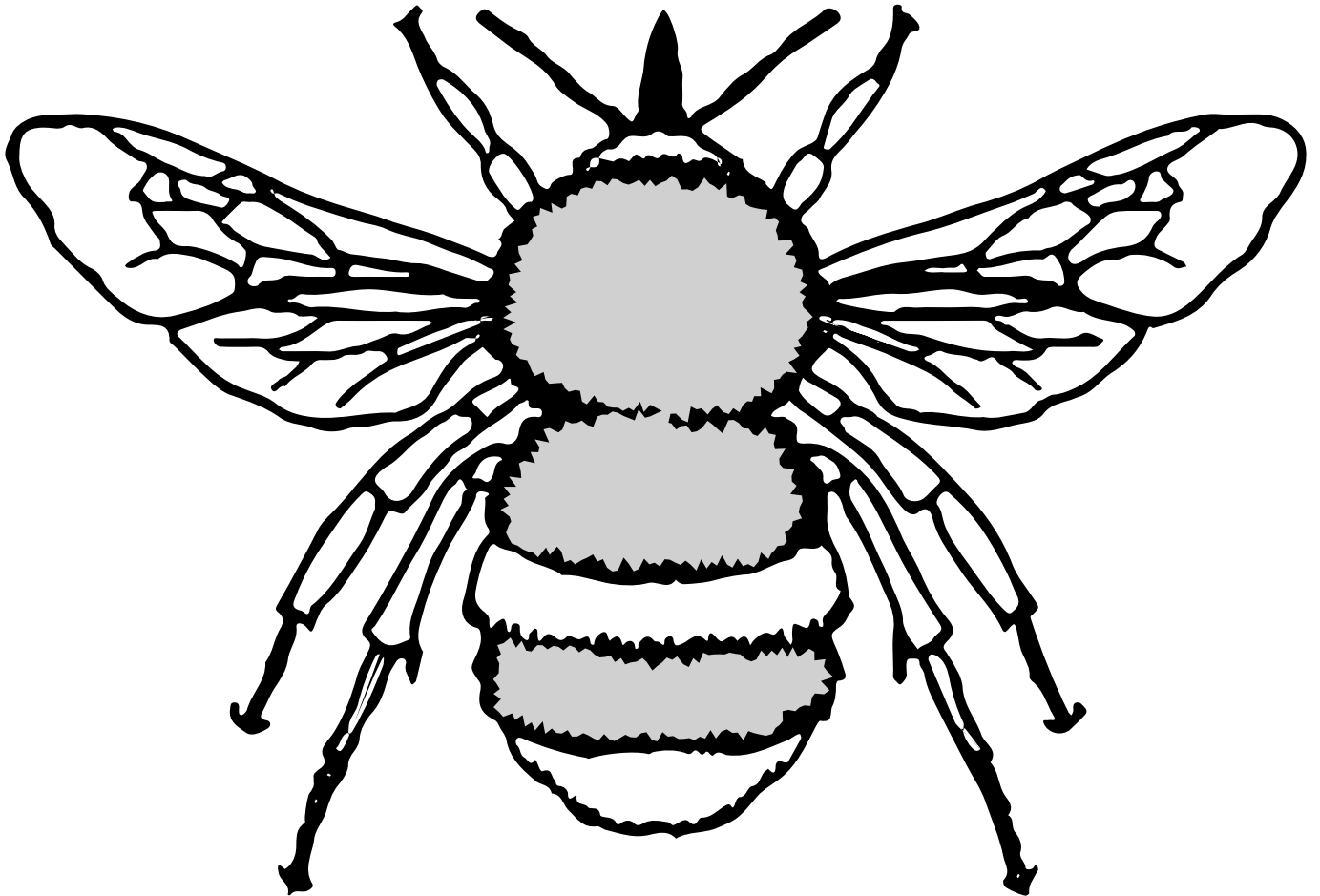
Younger classes might enjoy colouring a pollinator drawing.



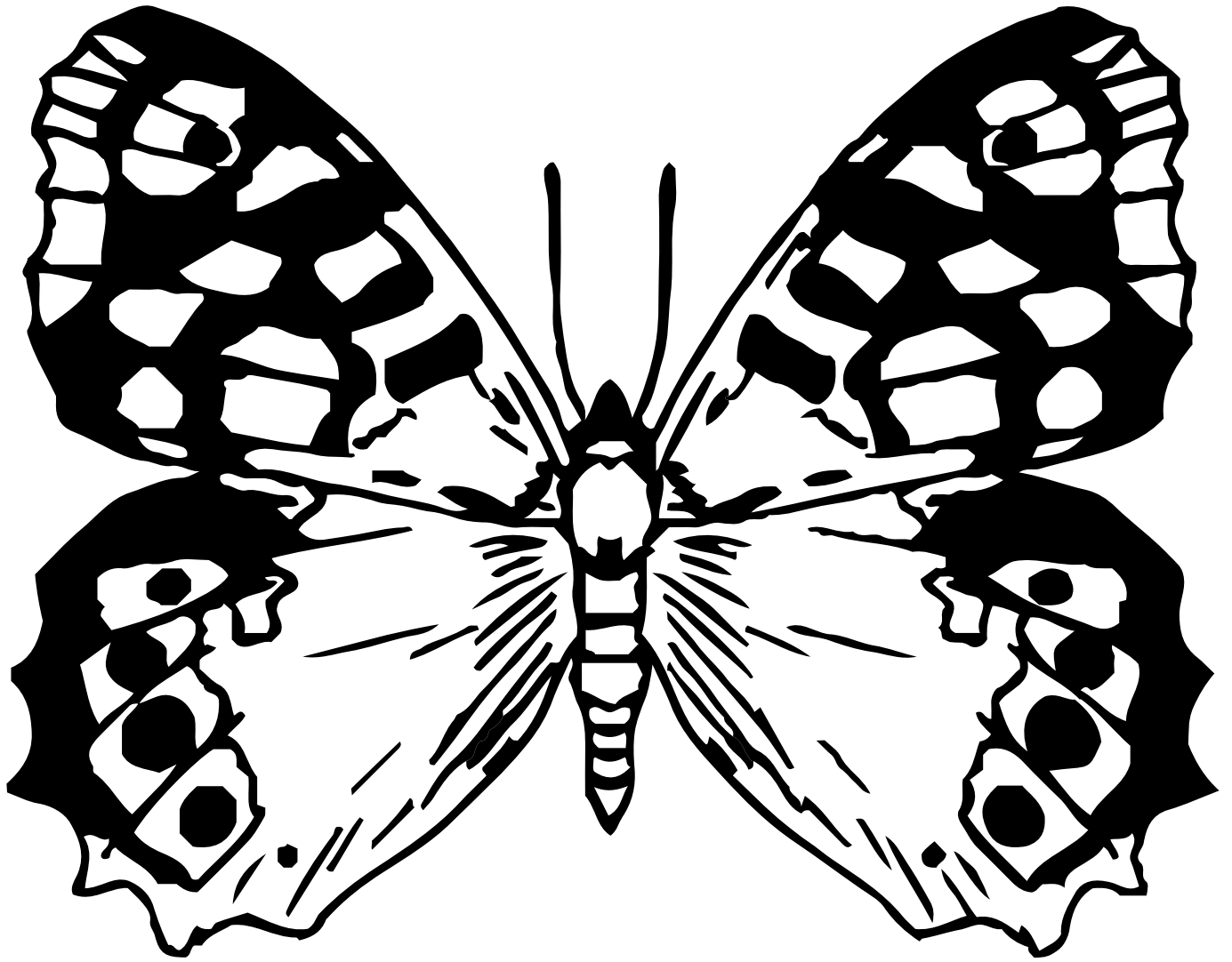
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Oideacháis Laoise**
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Buff-tailed Bumblebee, **Bombus terrestris**



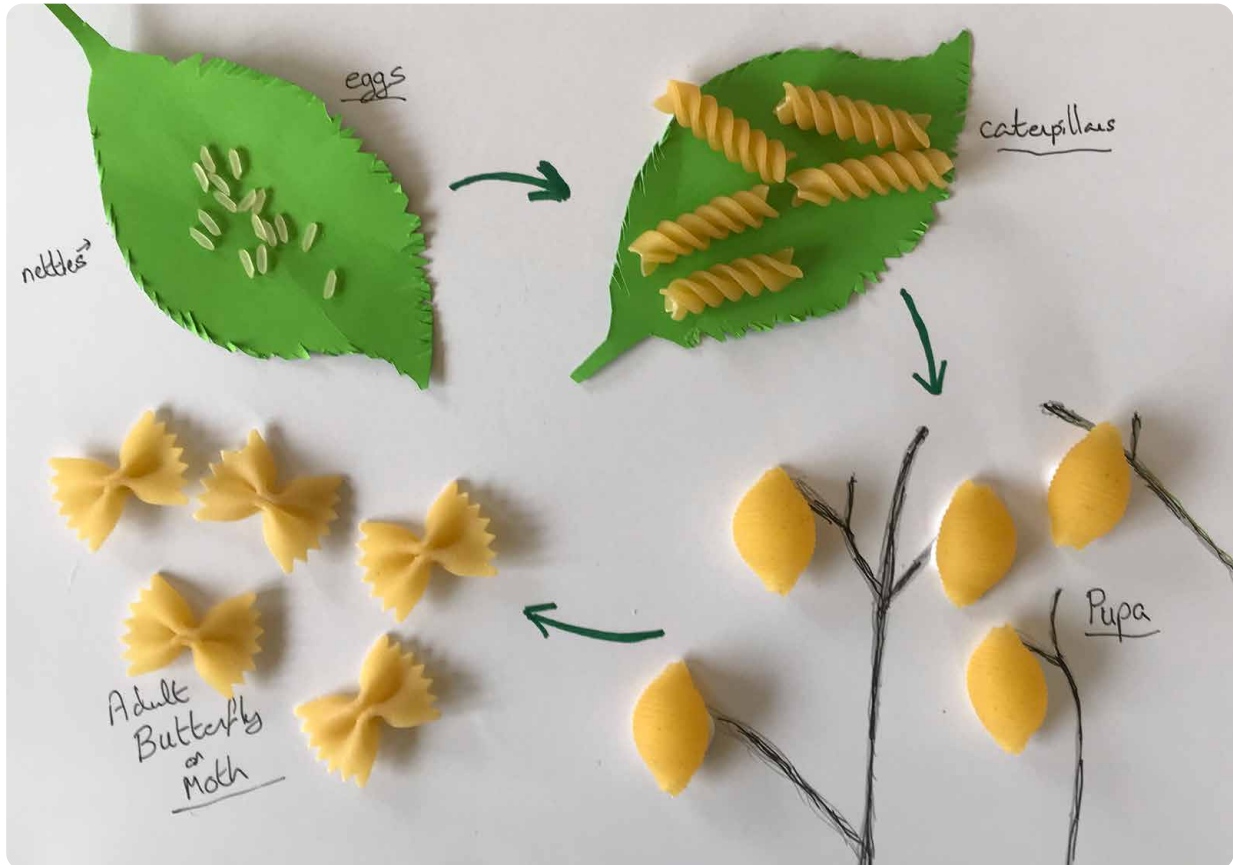
Speckled Wood Butterfly, *Pararge aegeria*



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Recreate the Life Cycle of Moths & Butterflies using pasta and rice!



*Moths are important pollinators too.

What you need:

- ✓ Small amounts of rice, Fusilli, Bow Tie, and Shell pasta.
- ✓ Paper and pens/marker/pencil.
- ✓ Glue.

Instructions:

- 1 Plan your page and glue on rice and pasta where appropriate to represent each stage of the life cycle.
- 2 Label each stage: Butterflies and Moths lay their tiny eggs on the leaves of plants that will provide food for their caterpillars. When the caterpillar emerges (caterpillars can be represented by fusilli pasta) it eats and eats. When it has grown enough, it forms a 'chrysalis' (pupa) represented by the shell pasta. Within the chrysalis the caterpillar transforms into a butterfly or moth. Finally, a butterfly or moth emerges from the chrysalis. Bow-tie pasta can represent a moth or butterfly.



Activity - Pollinator Scavenger hunt:

Simple for Junior Infants to 2nd Class

Get your students out into the garden, observing pollinators in action!

This activity works anywhere that you have lots of colourful flowers, whether in your own schoolyard, a garden, or on a field trip.

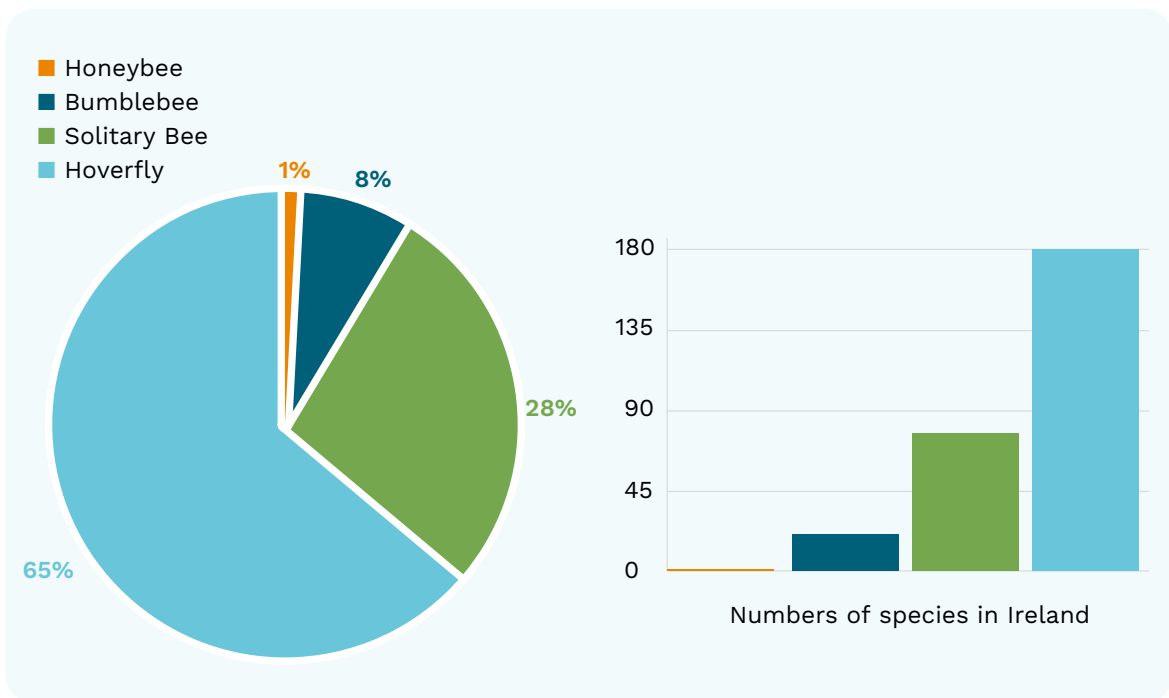
Scavenger hunts are one of those rare things that can truly be done with all ages. Younger students will enjoy simply finding and observing bees and butterflies, identifying flower colours, and learning to use a chart.

| | | Check off the insects you see on your scavenger hunt ✓ | What colour was the flower it was visiting? |
|-----------|---|--|---|
| Bee |  | | |
| Hoverfly |  | | |
| Butterfly |  | | |
| Moth |  | | |
| Wasp |  | | |
| Beetle |  | | |

Activities for 3rd Class to 6th Class

Create a chart to represent Ireland's different pollinating species.

In Ireland we have **1 honeybee** species; **21 bumblebee** species, **79 solitary bee** species and **180 Hoverfly** species. These are the most important pollinators in Ireland.



Activities for 3rd Class to 6th Class - Pollinator Count

Older Classes can carry out an ecological survey, counting the numbers of each insect group and you can go into more detail in learning to identify the various groups.

Teachers can download this simple introduction to help identify the broad insect groups you will see:

https://biodiversityireland.ie/app/uploads/2022/05/Identifying-different-insect-groups_2022.pdf

Broad Insect Groups

Bumblebees



Solitary Bees



Honeybee



Wasps



Hoverflies



Other Flies



Butterflies and Moths



Beetles (>3mm)



Small Insect (<3mm)



Other Insects



Activity Objectives:

For older students the Scavenger Hunt can set the stage for later lessons and great conversations and projects around what pollinators need and will help to start them thinking about food resources around the school for pollinators.

Download this simple guide to help you identify the broad insect groups:

https://biodiversityireland.ie/app/uploads/2022/05/Identifying-different-insect-groups_2022.pdf

Sample Identification tips from this guide:

Bumblebees

- ✓ Very hairy
- ✓ Long antennae that are often elbowed
- ✓ Have bands of distinct colours
- ✓ Eyes at the side of the head
- ✓ May have a pollen basket on back leg
- ✓ Two pairs of wings - this is difficult to see as hind wings are smaller and underneath the main wings



Hoverflies

- ✓ Ireland's 180 species of hoverfly also come in lots of different types and might be difficult for beginners to distinguish
- ✓ Fast fliers and can hover in the air
- ✓ Large eyes covering most of head
- ✓ Antennae short and stubby, sometimes feathered (bees and wasps have long antennae)
- ✓ Many are shiny & black with yellow or other pale markings
- ✓ One pair of wings
- ✓ Will never have a pollen basket

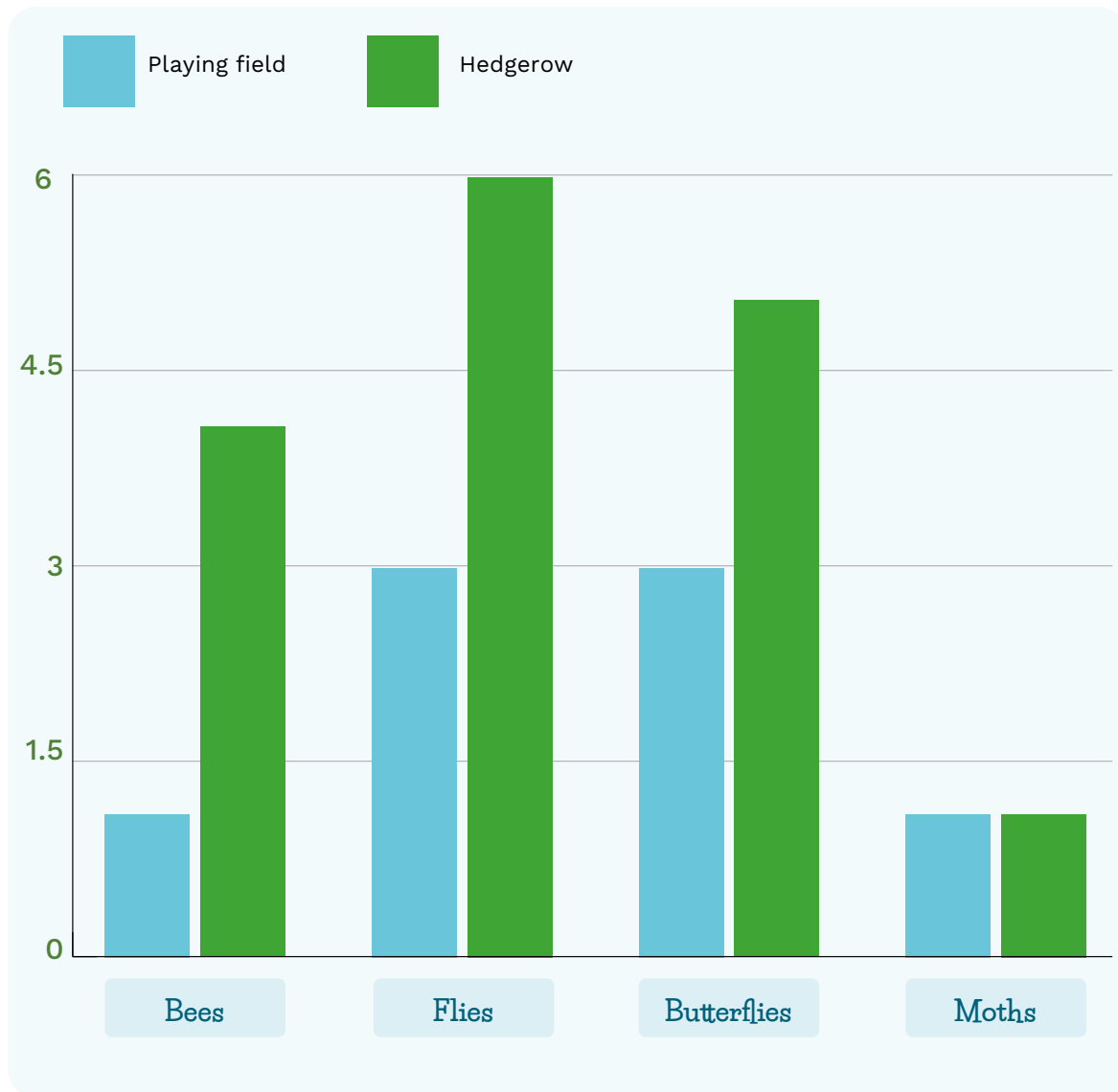


Pollinator Scavenger hunt:

(This becomes more detailed for older classes).

| | | Check off the insects you see on your scavenger hunt ✓ | What flower did you see it on? | Can you name the flower? | Where? Hedge, lawn, flower bed? |
|-------------|---|--|--------------------------------|--------------------------|---------------------------------|
| Bee |  | | | | |
| Hoverfly |  | | | | |
| Butterfly |  | | | | |
| Moth |  | | | | |
| Wasp |  | | | | |
| Other Flies |  | | | | |
| Beetle |  | | | | |

Make a graph to show the number of insects you found in different areas



Conversation questions on Survey Results:

- 1 Which habitat seems to be the best for insects?
- 2 Why do you think this is?