Learning through Landscapes

S3 Pollinators and Flowering Plants Survey

The longest survey and quite challenging. Please set aside plenty of time!

About you

Name of your school

How many participants are in your survey group?

What country are you participating from?

What is the average age of the participants?

Aims

- To become familiar with how to measure distance and angles to create a sampling area
- To transfer real world habitats into a diagram and be able to estimate their coverage
- To become familiar with identifying different pollinator groups using some key features
- To estimate flower coverage and begin to observe and identify differences between flowers

What you will need

Essential

- 'Practitioner Guidance' document
- Identification Guide and Habitat Guide from S1
- Pen, pencil and eraser
- Metre long stick(s) and/or 5 metre rope
- Timer

Helpful

- Coloured pencils/crayons
- Suitable tool for creating right angles
- Camera (can use mobile phones if suitable)
- Identification aids (see guidance)

Funders and partner organisations

Green Recovery Challenge Fund

Department for Environment Food & Rural Affairs

The National Lottery Heritage Fund

Environment Agency

Natural England

Leicester City Council

Wildlife Gardening Forum

Co-funded by the European Union

BirdLife Malta

SEO BirdLife

Lund University

Naturskolan i Lund

Lunds Kommun

Survey preparation

Please ensure you have completed the 'School Grounds and Habitat' survey (S1) and recorded the coordinates of your school and the measurements of your school grounds.

1. Record the date on which the survey was completed (e.g. 01/01/21)

00 00 00

2. Record the time that you started the survey (e.g. 10:25 AM)

00:00 AM/PM

3. Circle the symbol which best describes the weather today.

4. What is the temperature at the moment?

00 °C

Use a thermometer to record the air temperature. To do this, place the thermometer in a shaded area for at least 10 minutes, about 1 metre above the ground. Then take reading.

5. How windy is it at the moment?

- ☐ Leaves still
- ☐ Leaves moving gently all the time
- ☐ Leaves moving strongly

Survey method

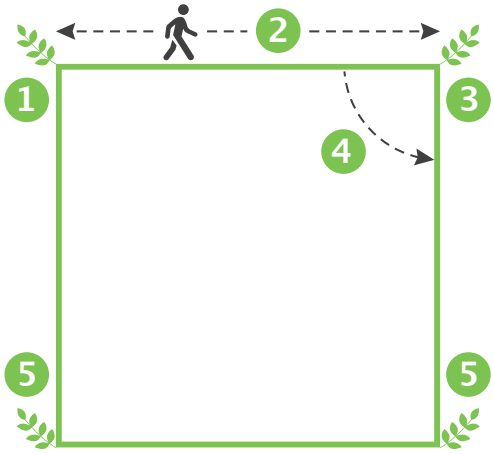
Step 1. Choose your survey site

Choose a site that is a typical representation of green environments in your school grounds. There should also be some flowering plants present. The size of the area must be at least 5x5 metres.

If you are planning to make changes in your school grounds, please choose the location where this will take place.

If you lack a green area:
Pick somewhere suitable that you want to make changes to and conduct the survey here to collect data beforehand. If you plan to make changes later this should be declared in the 'School Grounds and Habitat Survey' (S1).
For learning purposes only, you can redo this survey in nearby green space.

Step 2. Measure 5x5 metre area according to steps 1-5



1. Place a marker on the ground (e.g. a stick or cone).
2. Walk in a straight line for 5 metres.
3. Place a new marker on the ground.
4. Turn 90 degrees clockwise.
5. Repeat steps 2-4 until you have a 5x5 metre area.

Try not to move within the square during the following steps!

You may want to mark every 1 metre, perhaps with an object or a mark on the rope; this may aid in drawing the different habitats more accurately later on.

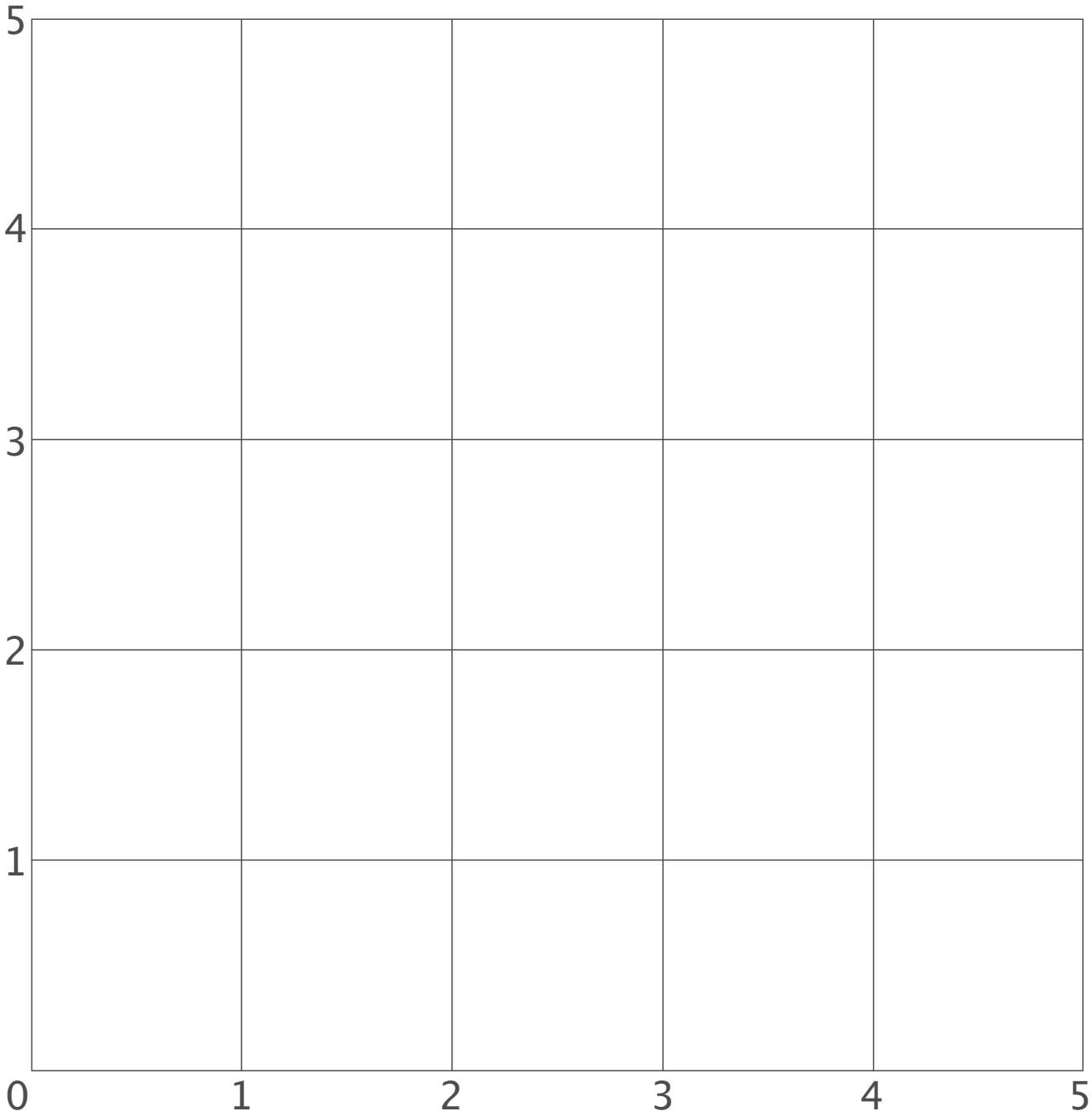
Step 3. Map your survey site

You will need to use the same 5x5m sampling area for this survey and the Minibeasts and Leaves survey, so it is important that you map it accurately. Take a photo of the sample area and leave markers so the location is clear within your grounds.

If possible, enter the coordinates of the site here (please see practitioner guidance for how to mark site coordinates).

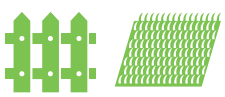
Step 4. Draw different habitats

Draw the different habitats that are in the site (5x5m) into the grid pattern below (see 'Practitioner Guidance' if you need help and examples).



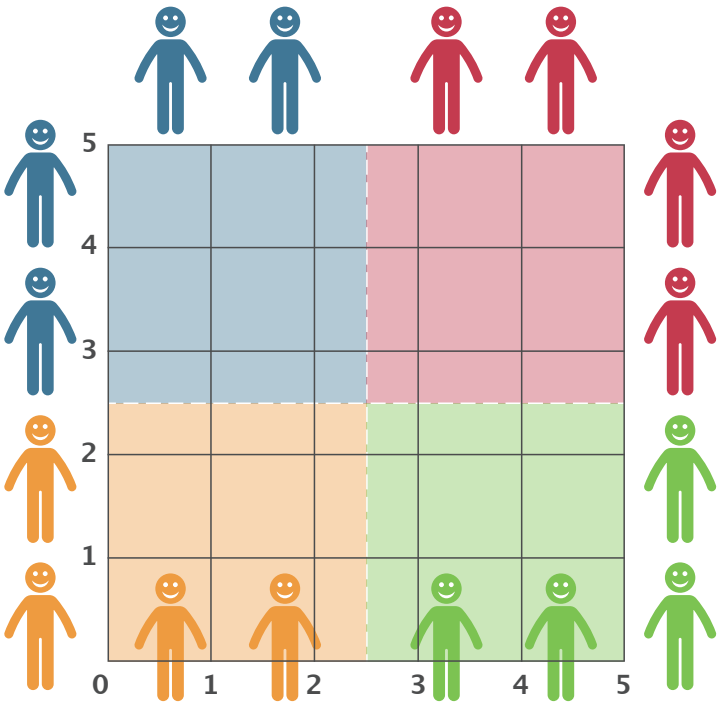
Step 5. Enter habitat types into table

Based on your drawing in the 5x5m area, estimate the number of square metres that each habitat type covers. Enter the number of square metres for each habitat type in the table below.

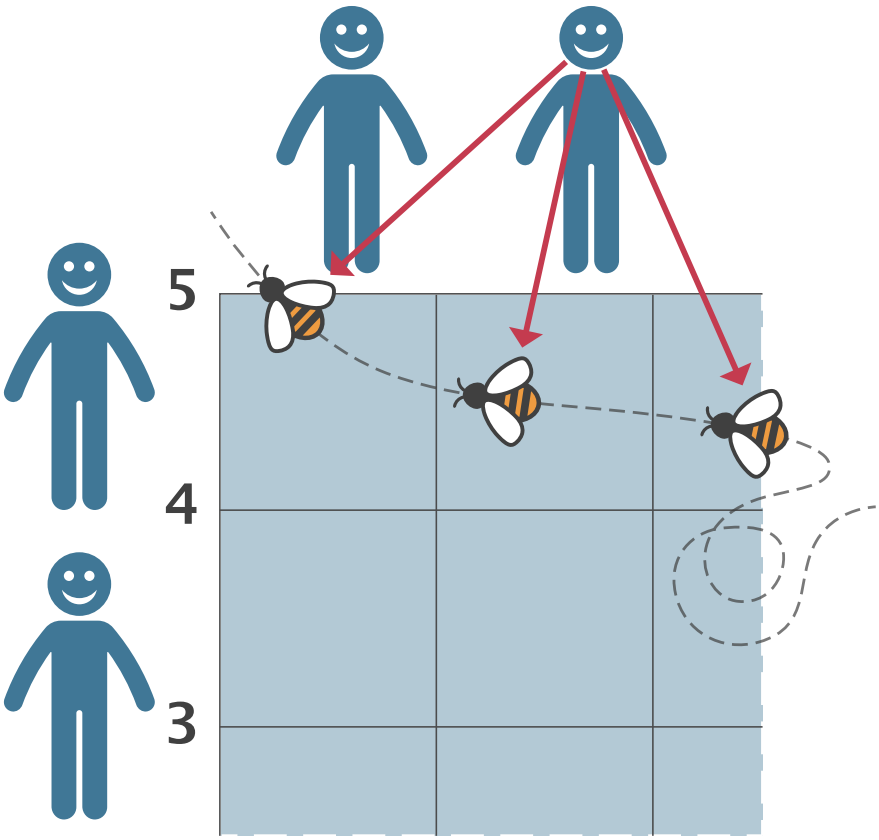
Table 1. Type of habitat			Estimate of m²
Food resource 	Plant beds or flowerpots		
	Tall grass, wildflowers		
	Crown cover of trees and shrubs		
Nesting places and shelter 	Bare ground (soil, sand, gravel, etc.)		
	Number of man-made homes overall _____	Bird homes (e.g. bird boxes)	
		Wild bee homes (e.g. bee hotels)	
		Honeybee homes (e.g. bee hives)	
		Minibeast homes (e.g. bug hotels)	
		Others (e.g. rubble, stone walls, hollow stems, dead wood) Specify below:	
	Damp places		
Other 	Short grass (e.g. mown as lawn)		
	Bare walls or fences		
	Concrete or tarmac		

Step 6. Observing pollinators

1. Spread out along the outside of your 5x5 metre survey site. Approximately the same number of students should be on each side.
2. Each student observes their closest quarter of the area.
3. Note for 5 minutes (use a timer) any pollinators that pass or stop in your survey site.
4. You can allocate one student as 'photographer' to take photos of any pollinators to compare with additional material.
5. Please use the Identification Guide.
6. Enter your results in the table on the next page.



If someone follows each insect with their eyes until it leaves the survey site, you avoid the same insect being counted several times.



Student A: "I see the yellow and black fluffy bee!! I have recorded it!" (as a bumblebee).

Student A: "Yellow and black fluffy bee has now left the square!!"

Table 2: **Pollinator table**

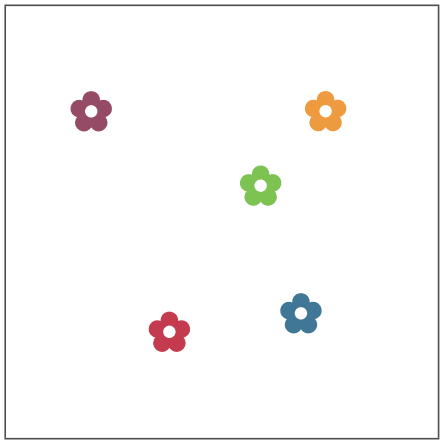
Tally the total number of each group you see and tally the total number of different species within that group. Include the name of the species if you know it!

Species group	Picture aid (Not all look like these – use photoguide!)	Total number seen	Total number of species (If you know the species/see features you can make a note here)
Example		𝍸 ||	|| Red-tailed White-tailed
Bumblebees			
Honeybees			
Solitary bees			
Wasps			
Beetles			
True bugs			
Butterflies			
Moths			
Hoverflies			
Other flies and mosquitos			

Step 7. Survey of flowering plant coverage

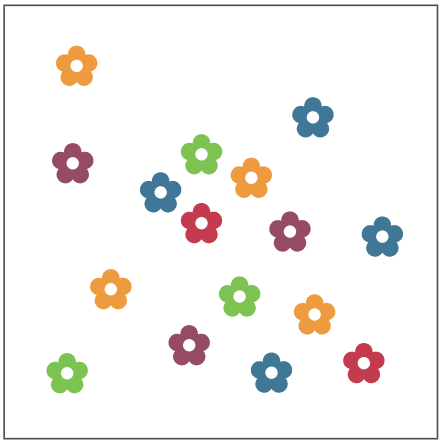
Look at the images below.

Which most closely matches your 5x5m sampling area? 1,2 or 3?



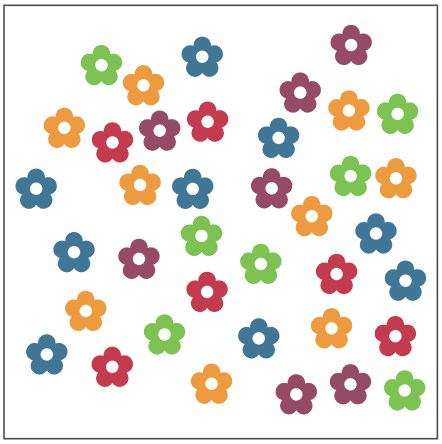
1

Roughly 0 - 10 flowers



2

Roughly 11 - 100 flowers



3

>100 flowers

Step 8. Survey of flowering plant species

1. You will now make an inventory of all flowering plants in bloom within the sampling area.
2. As in Step 6, you can divide the work into quarters of the 5x5m area.
3. Walk carefully inside the survey site and try not to step on too many flowers.
4. Focus on leaf shape, flower shape, flower colour, number of petals (see practitioner guidance).
5. If possible, take photos of each of these features to aid identification. Take a photo of both flower and leaf of each species. Remember which flower belongs with which leaf!
6. Use available resources, field guides, apps etc. to differentiate between plants.
7. If you cannot identify a species: aim to get it to a group or write 'Unknown' and give it a number. Differentiating between flowers is more important than identifying them.
8. For both known and unknown species/groups you can practice drawing and describing their basic features in the boxes to the right if you find this useful (good for learning!).

Table 3: **Name of flowering plant species**

Species/Group	Describe/Sketch
Example 1. Buttercup (*Ranunculus spp.*)	 Yellow, 5 petals, rounded petals  Toothed + three offshoots (lobes)
Example 2. Unknown 1 (actually a Daisy, *Bellis perennis*)	 Yellow + white, many petals  Small + rounded

Table 3: **Name of flowering plant species cont.**

Species/Group	Describe/Sketch

Add up how many different species of flowering plants you have found in your 5x5 metre surface.

Total number of species of flowering plants: ☐

Feedback

Thank you for completing this survey.
Please rate this survey out of 5 stars.

Please describe any issues or practical problems that arose during the survey process.

Please also let us know if you have any questions and/or comments regarding survey content.

Name: