



Your Guide to **Beelines**





Introduction

What is Beelines North East?

Beelines North East was a government-funded, green project that was created to boost both jobs and nature recovery in the region, which ran from October 2021 to April 2023. Funded by the Green Recovery Challenge Fund, a key part of the Prime Minister’s 10 Point Plan to kick-start nature recovery and tackle climate change, the project worked across 41 nectar-rich public sites, planted 3,700 trees, created 12 hectares of new meadow, restored 6 hectares of grassland, created 1,800 sq metres of pollinator friendly formal borders and planted almost 42,000 bulbs. The project created opportunities for young people by opening 5 new jobs, was supported by 150 new volunteers and worked with 16 schools across the region.

What were Beelines’ long-term goals?

Beelines North East’s mission was to create and protect wildlife-rich landscapes so pollinators can thrive, by working in partnership with landowners, local authorities, and businesses and communities to create a sustainable, long-term nature network across the region.

We believe the North East should be rich in wildlife so our pollinators can prosper, as nature is central to our health, happiness, and economic welfare. We aimed to create a lasting message beyond the lifespan of this individual initiative by educating and engaging with communities to drive long-term change, and worked with 13 different community groups throughout this project.

We aimed to create a society where nature matters - where people understand the value of nature and take action for it. Beyond this project, we do this by inspiring thousands of people every year, and reconnecting them with their local environment through our visitor centres, events, campaigns and engagement programmes.

What is the purpose of this toolkit?

The purpose of this toolkit is to:

- Provide you with information and activities that you can share with your groups and communities as a way to engage people in the North East and show the importance of maintaining our nature and green areas for the benefit of our pollinators.
- Help you to share our message in order to help people in the North East make the necessary adjustments to drive positive change within their own lives and communities, so nature in the North East can flourish.
- Give you the tools to encourage others to make their homes and local areas more pollinator-friendly by providing important information on how to create and maintain your own pollinator-friendly space.

How can this toolkit be used?

This toolkit can be used as a reference point for any information regarding pollinators, their behaviour, and the science behind their importance for our ecosystem. It can be used to inform and educate both yourself and others, to spread key messages to drive positive change within the North East, teach you how you can create your own pollinator-friendly spaces, and how you can get involved in our events and projects past the end of Beelines.

Contents

Introduction	3
What is Beelines North East?	3
What were Beelines’ long-term goals?.....	3
What is the purpose of this toolkit?	3
How can this toolkit be used?	3
Information	4
What is the science behind pollinators?	4
Fact sheet for younger audiences	6
Fact sheet for older audiences	7
Free activities and events	8
Year-round planting advice	10
Interactive and engagement activities	12
Outdoor session plans	12
Quizzes	15

Information

What is the science behind pollinators?

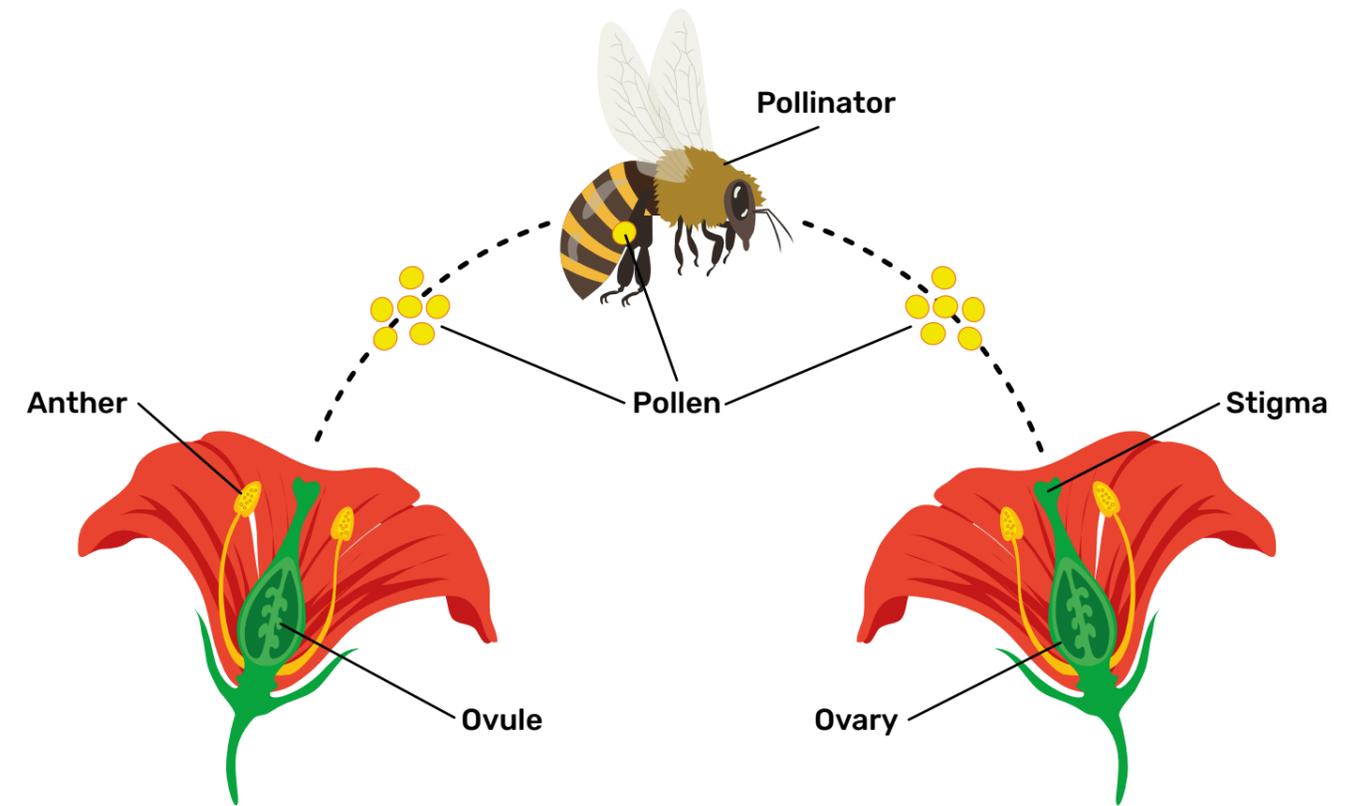
Bees and other pollinators like butterflies and moths play a crucial part in the cycle of life as they help in the reproduction of plants and crops, which are vital for both humans and animals, which is proven by over 80% of flowering plants relying on animals for pollination. Bees are a particularly important group of insect pollinators, responsible for pollinating 60–70% of the world's total flowering plant species, including nearly 900 food crops worldwide.

Over millions of years flowering plants have evolved alongside

pollinators and have developed mutually beneficial relationships. Plants have evolved to produce nectar, which is an attractive meal for pollinating insects. In turn, plants benefit from pollinators, such as Bees, transferring pollen between plants whilst they forage for food. For example, they have branched hair called scopae or bristles called pollen baskets (corbicula) which allows pollen to easily attach to their body whilst they feed on nectar. They carry this pollen with them as they fly from flower to flower, fertilizing them in the process and thus, pollination occurs.

Pollinators are an important part of biodiversity, we depend on them for survival and without them, crucial and complex food chains would suffer and cease to exist. It has been estimated that UK pollinators such as bees, moths, and butterflies pollinate £690 million worth of crops annually, with up to 1/3 of fresh fruits and vegetables are relying on insect pollination.

Notes: It is estimated that 87.5% of flowering plants depend on animal pollinators for reproduction (Ollerton et al., 2011 [sciencedirect.com/science/article/pii/S2468265922000166#bib64](https://www.sciencedirect.com/science/article/pii/S2468265922000166#bib64)).





Information

Fact sheet for younger audiences

If you work with children and younger people, this fact sheet will help you simply explain key information about bees and pollinators so they become interested and engaged.

1 Why are bees/pollinators important?

- Bumblebees are great pollinators who allow flowers and crops and help produce a lot of the food that we eat.
- They also help flowers and plants to reproduce, which helps many other animals.

2 What do they eat?

- Nectar and pollen from flowers and plants.
- When a bee lands on a flower, it uses its long tube-shaped tongue (which is called a proboscis) like a straw to drink the sweet nectar inside the flower.
- While the bee is busy getting a drink, tiny grains of pollen often get stuck to the bee. These grains of pollen come from the male part of the flower, the stamen.
- Queen bees need nectar when they awake from hibernation. It can be dangerous if they can't find a source of nectar or pollen quickly.

3 What plants do they like?

- Some bees like deep-shaped flowers like bluebell, and others need more open flowers such as daisy. Providing a mix will support a broader range of species.

- Bulbs, bare root trees, fruit trees and shrubs are also good to plant.

4 Where do they live?

- The queen bee will emerge from hibernation and begin looking for a good nest site.
- They prefer dark and dry spaces, like old mouse holes and under sheds.

5 How far can they travel for food?

- Some species of bumblebees have been known to go as far as 10km away from their nest.
- But the further the bees have to fly to find food, the less successful their colony is likely to be.

6 What can we do to help them?

- The number of good habitats with pollen and nectar for bees has gone down a lot over the last 100 years. You can help by providing plants full of pollen and nectar where you live, in school, or in your local community.
- If you have a garden, you could ask your family to leave some areas in the corner, to let long grass, brambles and flowers like dandelions, daisy and buttercup grow, to provide suitable habitats.
- By having these good habitats, it could also help bumblebees find a good place for a nest.

Fact sheet for older audiences

If you work with adults, this fact sheet will help you to share information and answer questions around pollinators and why they matter.



1 Why are bees/pollinators important?

- Bumblebees are well known for being great pollinators, therefore a key role that they play is helping to produce many of the commercial crops that we eat such as tomatoes, peas, apples, and strawberries. According to the Bumblebee Conservation Trust, insects are estimated to contribute over £600 million per annum to the UK economy (2015), and in doing so prop up the £108 billion-per-year food and drink industry in Britain.
- As well as helping to produce food, bees also help reproduce many species of flowers and plants, which play a vital role in many complex food chains. Therefore, without bees, many other animals would suffer.

2 What do they eat?

- Bees eat sugary nectar using their long tube-shaped tongue called a proboscis, and pollen from flowers and plants, which provides protein and other nutrients.
- Early sources of nectar are vital for newly emerging queen bees. Queens have extremely limited energy resources when they wake up from hibernation, and if they can't find a source of nectar and pollen quickly, they could die before being able to establish a nest.
- One of the main roles of the first brood of bees will be to forage for nectar and pollen from flowers. The nectar and pollen are mostly brought back to the colony to feed the workers and the next batch of offspring.
- They require a lot of food to keep the workers and new broods fed to keep the colony alive.

3 What plants do they like?

- Some bees like deep-shaped flowers like comfrey or fuchsia, whilst others need more open flowers such as lavender. Providing a mix will support a broader range of species.
- Early flowering spring bulbs, such as crocus, English bluebells and native daffodils provide a great source of pollen and nectar.
- Blossom bearing trees, such as fruit trees and native shrubs are also good to plant.

4 Where do they live?

- Different species of bees will prefer different habitats, for example buff tailed bumblebees

prefer dark and dry spaces and will often set up a home in old mouse holes or under sheds. Whereas Tree Bumblebees tend to like higher nest sites such as empty bird boxes, and lofts.

- A well-established bumblebee nest may contain up to 400 bees, whereas a honeybee nest can contain up to 50,000.
- Solitary Bees don't live in nests at all, they lay their eggs in tube-like holes in earthen banks and old brickwork, sealing the nesting holes up with mud or leaves depending on the species.

5 What can we do to help them?

- The amount of nectar and pollen-rich habitat has significantly reduced over the last 100 years. A major factor in this is the loss of 97% of wildflower meadows across the country since the 1930s. You can help to fill the gap left behind by providing pollen and nectar-rich plants where you live, work, or in your local community.
- You can help by planting bulbs, hedges, and shrubs in your garden, as well as leaving some areas in the corner of your garden to grow wild with long grass and brambles to provide suitable habitat.
- Providing good habitat for small mammals, which will in turn provide potential nest sites for bumblebee queens. Planting hedges and shrubs and leaving some areas in the corner of your garden to scrub up with long grass and brambles will help provide suitable habitat.
- Easy plants to start with are herbs, nasturtiums, sunflowers, or your very own tomatoes.
- RHS 'Plants for Pollinators' have downloadable PDF documents with extensive lists of many garden plants, wildflowers, and plants of the world that you can use to help pollinators. These lists give a lot more detail about the time of year to best plant them, in what conditions/environment and where in the world.
- You could also help provide additional forage for bees simply by letting your lawn grow long during the summer months, this allows common garden plants like dandelions, daisy, and buttercup to flower.
- Hibernating queens are often found in compost heaps and dug over soil. Creating some of these areas in your garden will benefit bees, and plenty of other wildlife as well.

Information



Activities and events

We feel the best way to learn about and enjoy nature is to explore and experience it, here are just some of the things that people of all ages can get involved in:

Educational activities

We offer educational experiences for all ages, allowing you to discover the natural world through outdoor learning and play. Activities vary from planting to bug hunts to nature arts and crafts.

All sessions aim to involve time outdoors, whether its in your outdoor space, a local green space or on one of our reserves. To schedule your activity, email mail@northwt.org.uk.

Events

We run a range of events across the region. To find out what's on visit our website, www.nwt.org.uk/events or our Facebook page @northumberlandwt.

Activities you can do yourself:

There are many ways you can do your part to help pollinators thrive, at home and around your local community. This can include:

- Make a bee hotel using wood, reeds, bamboo canes, and hollow stems
- Plant pollinator-friendly bulbs
- Go on a bug safari in your garden or local park
- Build a bird box to put on a wall or fence
- Make and plant seed balls using wildflower seeds, soil, flour, and water
- Make a bee bath using a shallow dish and some stones

More information and links to instructions can be found on our website.



Information Year-round planting advice

Spring

1 If you missed your opportunity to plant out bulbs in the autumn, you can plant bulbs 'in the green' now for early sources of nectar for pollinators. Native bulbs are best, as cultivars are not always good sources of nectar or pollen.

2 Now is a good time to sow any annual plants ready for summer. The RHS 'Plants for Pollinators' has an extensive list of options, but easy plants to start with are herbs, nasturtiums, sunflowers or even tomatoes.

3 If you are creating your own wildflower meadow, early spring is a good time to give the grass a first cut. This will keep any coarse grasses from dominating and outcompeting any flowers you may have sown the previous autumn. Keep your blades at a high setting, and ensure you collect the cuttings. If your meadow is already established, then this cut will unlikely be necessary. You should aim not to cut after the middle of April.

Summer

4 Now is the key time to provide lots of nectar and pollen. If you have a garden, you can fill your borders with a mix of plants that will flower throughout the summer, providing nectar and pollen across the season. You could also look to plant flowers that have different structured flowers. Some bees like deep shaped flowers like comfrey or fuchsia, whilst others need more open flowers such as lavender. Providing a mix will support a broader range of species.

5 If you don't have much space you can still do your bit for bees. A small planter on a window ledge or balcony can provide a welcome snack for hungry pollinators.

Autumn

10 Planting shrubs can provide a great forage resource for pollinators and need much less care and attention compared with a perennial flower border. Good shrubs for pollinators include buddleia, viburnum, hebe, daphne and honeysuckle. It is important to plant 'single flowered' cultivars as you will often find that double flowered plants that have been bred for their aesthetic will not be any good for pollinators.

9 Autumn is also the prime time to plant bare root trees and shrubs ready for next year. Garden centres or tree nursery will supply bare root trees from November onwards. Fruit trees are great for pollinators, with the added bonus of providing food for home baked goods!

8 Autumn is prime time for planting in preparation for next spring. Bulbs such as crocus, English bluebell, native daffodil (variety called 'Lent Lily') and winter aconite all provide early forage for emerging queens. Why not try scattering bulbs in your lawn and enjoy the shock of colour in the spring?

7 Keep your lawnmower in the garden shed. No Mow May is a popular campaign to reduce the amount of mowing across the country. You don't have to restrict yourself to just May. Leave a patch of lawn across the summer and this will continue to provide forage and habitat for pollinators and other wildlife.

6 If you have created your bee buffet, you could put up a bee hotel for solitary bees to nest nearby. These are readily available from garden centres, but homemade ones are just as effective. Find instructions to make your own here - wildlifetrusts.org/actions/how-make-bee-hotel.

Winter

11 Early Autumn is the time to be establishing your wildflower meadow. Clear an area of as much vegetation as possible and sow your wildflower seed. If you are sowing into an area that was previously a lawn, then it is important to ensure that parasitic plants such as yellow rattle are included in your seed mix. These plants will inhibit the growth of coarse grasses, allowing the wildflowers to thrive.

12 If you have already established a wildflower meadow, then now is the time to cut it and remove the arisings to prevent the nutrients from enriching the soil. It is good practise to leave about a quarter of your meadow long through the winter. This provides good areas for hibernation for insects and small mammals.

13 Winter is a quieter time as most pollinators have entered hibernation. It is, however, the perfect time to plan what you will do for pollinators next spring and summer. You can spend some time preparing the areas for planting in the spring.

14 If you don't have a garden, now is a great time to influence those who manage land near where you live or work. You could encourage land managers to reduce the amount they mow the grass or encourage them to plant more pollinators friendly plants.

Interactive and engagement activities

Outdoor session plans

Below are some outdoor activities you can incorporate into your sessions.

These activities are accompanied by free downloadable resources, which you can find on our website, www.nwt.org.uk/beelines-north-east.



Teaching point



Action

ACTIVITY 1: Habitat hunting

- **Age:** Ideal for KS1 and KS2
- **Guided time to spend on activity:** 25 minutes
- **Materials needed:** Printed copies of 'Habitat Bingo' worksheet ([download here](#)), clipboards, pencils/pens

This activity is all about discovering different habitats in your outdoor space.



Question for the class: What do you think the word 'habitat' means?

A habitat is a home for living things. They should provide food and shelter. Different animals like and need different habitats- some animals will like the shade of a tree whilst others like dark and damp underground.

Question for the class: What type of habitat do you think pollinators might need?

- Flowers
- Trees
- Bushes
- Log piles
- Pond/water



Hand out the 'Habitat Bingo' sheets (ideally on a clipboard), alongside a pencil/pen to each person.

The group can explore the green space and try to find as many different habitats they can find on their bingo sheet (ticking them off as they go)- can anyone get a full house?

See if you can spot some wildlife living in these habitats and discuss who potentially lives where.

For example, a tree can be a home for birds, squirrels, bumblebees, spiders, and more!



Remind the group that best behaviour for spotting wildlife is to approach areas quietly. Try not to run up to them too close as it will frighten them all away! It is best to leave habitats undisturbed as best we can.



Follow the habitat hunt with a group discussion.

Potential questions for the class:

- What habitats did you find/not find?
- Did you find any wildlife in these habitats?

Encourage the group to think about how the area could be improved for wildlife...

Question for class: How could we improve the area for wildlife?

- Examples:
- Plant more flowers
- Make a bug hotel
- Litter picking
- Make a bird box
- Create a wildflower meadow

ACTIVITY 2: What's on the nectar menu

- **Age:** Ideal for KS2
- **Guided time to spend on activity:** 25 minutes
- **Materials needed:** Printed copies of 'What's on the Nectar Menu' worksheet ([download here](#)), clipboards, pencils/pens, camera (optional)

This activity is all about flowers and their different characteristics (from scent to colour to shape).



When a pollinator visits a flower, they need access to its pollen and nectar (which they can eat and/or take back to their nest)

Flowers come in lots of different shapes and sizes- some are shaped so that lots of different types of insects can visit them, but others have special shapes so that only certain types of insects can visit them

Question for the class: Why do you think flowers often have bright colours and strong smells?

- Plants want to attract insects to their flower's nectar/pollen, so that the insects can pollinate the flower (this helps the plant reproduce)
- They often use bright colours and smells to do this
- For example, a bee's favourite colour is purple!

★ Hand out the 'What's on the Nectar Menu' worksheet (ideally on a clipboard) and a pencil/pen to each person.

Explore the green space in look for different flowering plants.

Stop and look at different flowers and their characteristics. Choose a couple of flowers and use them to fill out your worksheet, recording their shapes, colours, smells etc. There is even some space to get creative and draw your chosen flowers.

Tip: it can be great to take photographs of the flowers you find, as then you can find out what species they are. Perhaps you have stumbled across a rare species! Seek by iNaturalist ([download here](#)) is a great app for identifying and recording plants and wildlife (and suitable for all ages!).

After everyone has completed their worksheet, encourage your group to report back their findings.

Example questions for the class:

- Did anyone find some flowers that had a smell? A bright colour?
- Were there any flowers that had insects visiting them?
- Did anyone have a favourite flower?
- What kind of flower would you like if you were an insect?

You could couple these outdoor sessions with an activity from your Activity Pack or check out our downloadable resources on our website www.nwt.org.uk/beelines-north-east, or scan the QR code.

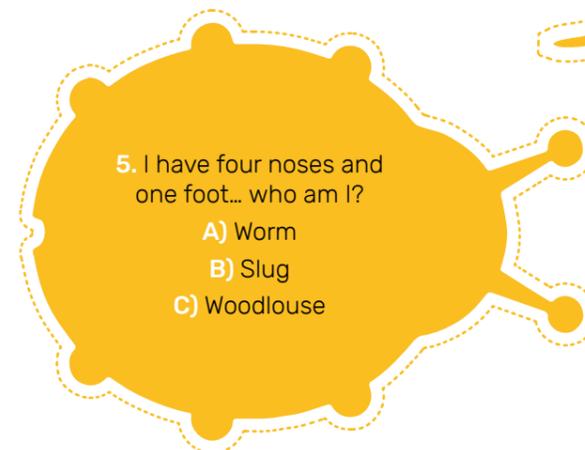
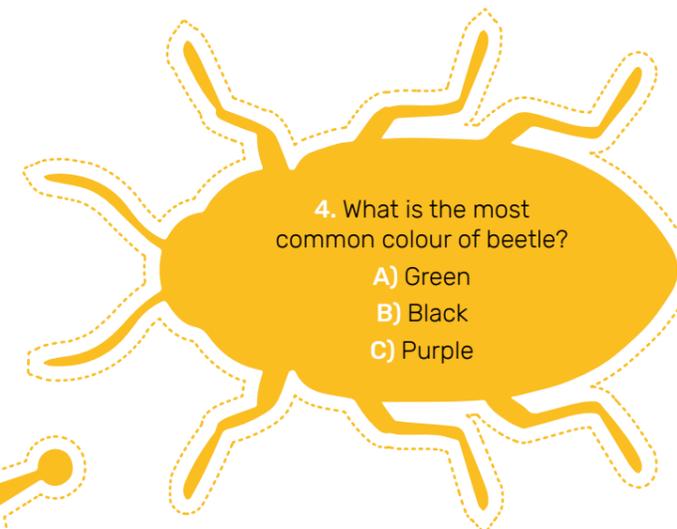
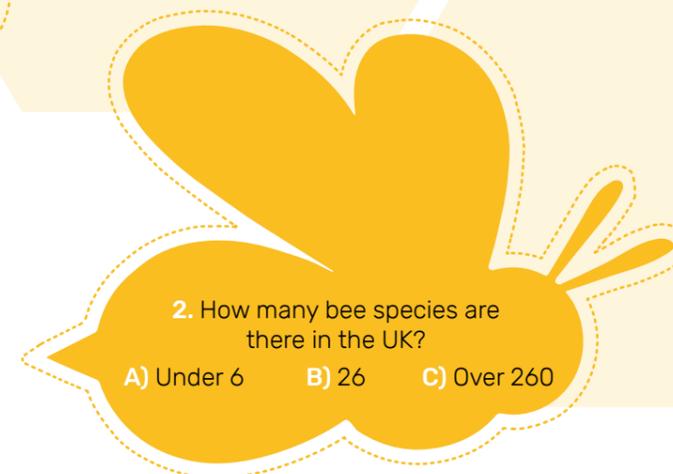
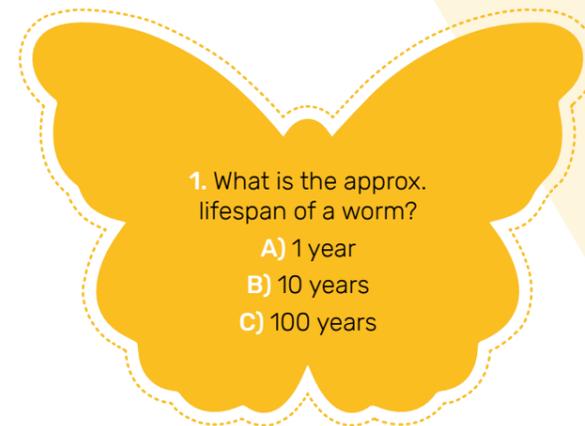


Quizzes

Below is one of our quizzes you can incorporate into your sessions. Our resources are free to download from our website, www.nwt.org.uk/beelines-north-east.

Minibeast quiz

Can you answer these 5 questions correctly? Perhaps you can also spot these minibeasts in your outdoor space?



Answers: 1. B 2. C 3. C 4. A 5. B



◆ Find out more

Urban Green Newcastle

Ouseburn Parks Visitor Centre
Red Walk
Jesmond Dene
Newcastle upon Tyne
NE7 7BQ

urbangreennewcastle.org

info@urbangreennewcastle.org

 [urbangreennc1](https://www.facebook.com/urbangreennc1)

 [@urbangreennc1](https://twitter.com/urbangreennc1)

 [@urbangreennc1](https://www.instagram.com/urbangreennc1)

Northumberland Wildlife Trust

Garden House
St Nicholas Park
Gosforth
Newcastle upon Tyne
NE3 3XT

nwt.org.uk

mail@northwt.org.uk

 [northumberlandwt](https://www.facebook.com/northumberlandwt)

 [@northwildlife](https://twitter.com/northwildlife)

 [@northwildlife](https://www.instagram.com/northwildlife)



Green Recovery Challenge Fund



Department
for Environment
Food & Rural Affairs

The
National Lottery
Heritage Fund



Environment
Agency

