



The Lit & Phil is celebrating 200 years at home by inviting young creative thinkers to participate in a Little Inventors challenge!

Foxes hiding in our gardens, kittiwakes nesting on the Tyne Bridge, otters on the Ouseburn, the occasional seal bobbing its head to the river surface. **There are plenty of wild animals who live in or visit Newcastle!**

But we know life can be hard for them: lack of green space, noise, traffic, pollution, and humans everywhere.

Everything in the city has been invented, from how we move, to where we live and how we enjoy ourselves - and so it can be reinvented!

Could you make a lamppost better for birds? Invent a bench for wildlife to relax on? Or find clever ways to help us share the city with our fellow animals?*



We are challenging you to invent something fun, clever or unusual to make life better in the city for wildlife!

* Invention drawings uploaded to litandphil.littleinventors.org by Friday 13 June 2025 will be considered for inclusion in an exhibition at the Lit & Phil!



This challenge is inspired by the collections of the Lit & Phil, an amazing library with over 200,000 books on all subjects including History, Natural Sciences, Engineering and Poetry.

Many great people have come through its doors to take inspiration from its books, attend lectures and think up new ideas (like Joseph Swan in 1879, who demonstrated one of the first electric incandescent light bulbs!).

And now it's your turn!

If you are in Newcastle why don't you pop in to find inspiration, or head to your own local library to see what you can find.

Some books we've loved at the Lit & Phil!

- *History of Quadrupeds*, illustrated by Thomas Bewick, 1800

Beautiful engravings and interesting descriptions of four-legged animals drawn by famous North East naturalist and illustrator Thomas Bewick

- *Ultra Wild*, by Steve Mushin, Allen & Unwin Children's Books, 2023

A detailed journey into what cities could look like if we redesigned them for Nature.

- *Very Heath Robinson*, by A. Hart-Davis, Sheldrake Press, 2017

Some of the best invention ideas were created just to make us laugh and think, and those of W. Heath Robinson (1872-1944) are a great example.

- *Ingenious Women* by Deborah Jaffé, Sutton 2003

Explore ingenious devices and gadgets invented by women from as far back as 1637!

- *Eighteenth Century Inventions*, by K.T. Rowland, Newton Abbott, 1974

Inventions take many years to be perfected, so it's great fun to look back at how some of them started.

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Help wildlife in our city!

Which wild creature will you choose to help?

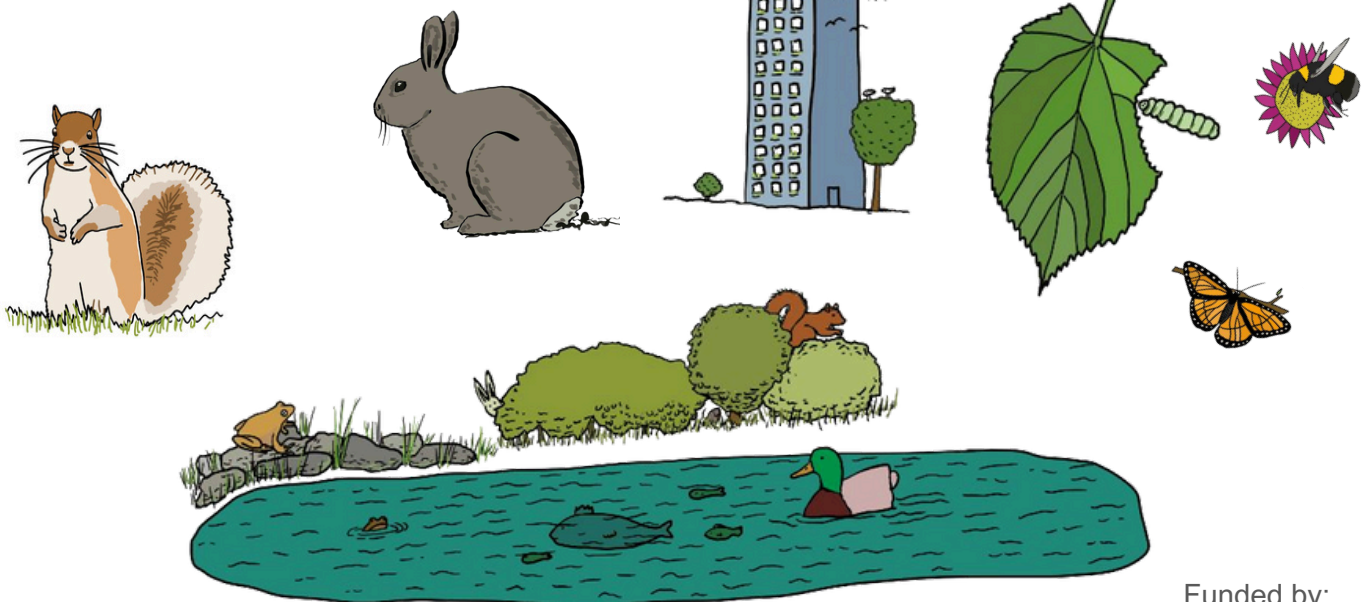
Look up, look down, and all around you, what animals and insects can you see or do you know about?

What do they enjoy doing? Do they have any problems you could help with?

There are many creatures living in or visiting our city, so we've given you some inspiration on the next pages to get you started.



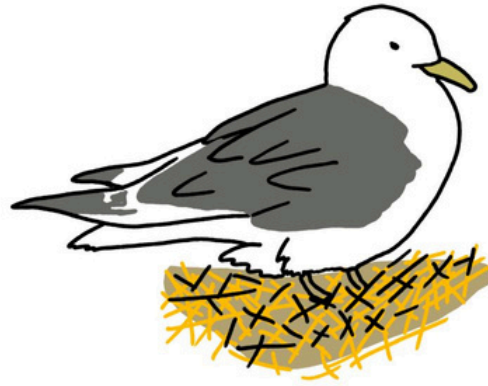
Get inventing!



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Kittiwakes

Hello, neighbours!

- Did you know? Kittiwakes first came to Newcastle in the 1950s!
- Now, more than 1,200 pairs of these amazing birds make their nests on the Tyne Bridge every year!
- This is the most inland kittiwake colony in the whole world — how lucky are we?

What's city life like for them?

- Temporary! Kittiwakes only visit the city to have their chicks — from March to August.
- Picky! They don't like human food and will never pinch your chips. Instead, they fly far away to catch fresh sand eels and other sea creatures. Because of overfishing, it's getting harder for them to find food — we need to protect our oceans to help them!
- Dangerous! Some people put nets on buildings to stop birds nesting, and young kittiwakes can sometimes get hit by cars when they're learning how to fly.

Where can you find them?

- In their nests on the Tyne Bridge and on nearby buildings.
- Out at sea — they fly over the Atlantic Ocean and can even sleep while flying!
- Their long claws help them grip tight to narrow ledges, whether it's a rocky cliff or a metal bridge!

Fun facts!

Special kittiwake hotels have been built to give the birds new places to nest while the Tyne Bridge is being fixed. But... the birds don't seem to like them very much! → **Challenge:** Could you design a better shelter for them — maybe even at the Lit & Phil?

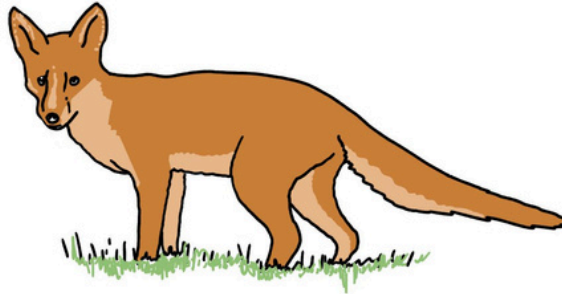
Thousands of birds means lots of poo!

→ **Challenge:** What could we do with all that poo? Or how could we protect people eating and drinking under the bridge?

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Foxes

Hello neighbours!

- Urban foxes started to become common in the 1930s, when cities grew and lots of new green suburbs were built.
- Today, foxes feel just as at home in the city as they do in the countryside! It's actually easier to spot a fox in the city than out in the wild!

How's life in the city for them?

- There's lots of shelter and food for foxes in the city — they often snack on bird food, especially peanuts!
- Sadly, more than half of fox deaths in cities are caused by traffic accidents.
- Foxes have cute little cubs who love to play

→ **Challenge:** Can you think of ways to help foxes and their cubs have fun and stay safe around the city?

Where can you find foxes in Newcastle?

- Foxes live in burrows called earths or dens. In cities, they also like to sleep under decks, sheds, and other small buildings.
- You might spot them in gardens, parks, shrublands, and other green spaces around the city!

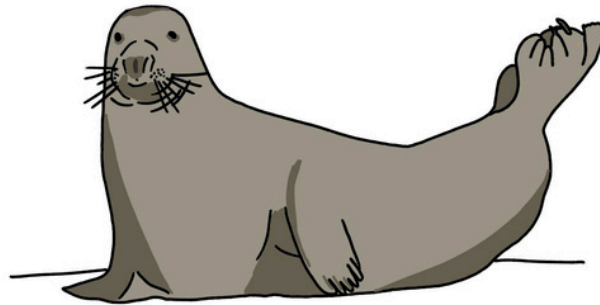
Fun Facts!

- Foxes have special glands on their paws that leave a strong smell behind — like a secret trail they can follow when they're roaming around at night!
 - Foxes are an important part of our culture. There are lots of books, stories, and fables about clever foxes — like *Aesop's Fables*, which were illustrated by Thomas Bewick right here in Newcastle!
- **Challenge:** What do you think a library for foxes would look like?

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Seals

Hello neighbours!

- Seals live on the coast, you can see them at St Mary's lighthouse in Whitley Bay for example.
- They like to haul out on rocks or on the beach, resting and digesting their food.
- Seals used to be hunted in the UK but the Seal Protection Act of 1970 helped their numbers grow again.

What's city life like for them?

- The river has changed a lot over the centuries. We have made it straighter and deeper for our boats, but less interesting for animals who prefer muddy or sandy shores to hard quays. → **Challenge:** could you make the quays better for animals, visiting seals included?
- Plastic waste and water pollution are a big problem. Rubbish that falls into the River Tyne ends up in the sea, where seals live — and it can tangle around them and hurt them.

Where can you find them?

- They are known to travel up the Tyne to find food, often following fish going upstream.
- It's hard to see them as they can stay underwater for quite long.

Fun facts!

- Seals have whiskers — just like cats! They use them to feel the movements of fish and other prey underwater. Even blind seals can still hunt and feed without needing to see!
- Seals have an amazing sense of hearing. But loud noises and disturbances can really stress them out. → **Challenge:** Libraries are some of the quietest places in cities — what would a perfect quiet place for seals stopping by in the city look like?

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The Lit & Phil invention challenge 2025:

Think of an invention idea to help wildlife in our city.

My invention is called...

First name

Age

School

Tell us more about your idea!

Which animal is it for? What does it do? How does it work?

Draw your invention here! Use a black pen, add colours and labels

