Education Pack:

Key Stage 2

This pack contains the basis of what you need to teach children about hedgehogs.

The pack is designed to align with the National Curriculum, specifically Key Stage 2: Science.

Pupils are encouraged to explore the local environment throughout with outdoor activities and games.

Lower

Plants: Pupils are encouraged to think about the parts of the plants they have found on the Spotter Sheet which may be used by hedgehogs and why e.g. leaves for bedding, stems for structure. The plants that hedgehogs use for nesting could be used as examples in learning how plants grow, their requirements and life cycle.

Animals, including humans: Pupils learn the unique features of a hedgehog and use a Spotter Sheet to identify and name common insects that hedgehogs eat to get their nutrition. They learn that hedgehogs are omnivores with teeth like humans, and about how they fit into food webs and chains. They learn about the special muscle that hedgehogs use to roll up.

Rocks: Pupils learn about hedgehog fossils and how we can tell when hedgehogs came about.

Light: Pupils learn that hedgehogs are nocturnal, coming out at night to avoid predators and find insect food, that may otherwise dry out in the heat of the day. They learn how important their hearing and smelling senses are in the dark of night to find their food

Living things and their habitats: Pupils learn that hedgehogs are mammals. Insects seen using the Spotter Sheets could be classified. Pupils learn that changing environments can be dangerous to hedgehogs, including changing weather that is difficult for hibernating animals.

States of matter: Pupils learn about temperature requirements for hibernation.

Sounds: Pupils learn that hedgehogs make lots of different sounds for different reasons and listen to some. These could be used to explore the scientific principles behind sound.

Upper

Living things and their habitats: Pupils learn about the life cycle of hedgehogs. Hedgehogs could be used as an example mammal to demonstrate life cycles and reproduction, as well as when exploring classification of animals.

Everyday materials: Pupils brainstorm which, and how, man-made materials might be used to help wildlife. They are encouraged to compare and contrast the properties of these materials and why some may be better to use than others.

Animals, including humans: Hedgehogs could be used as an example to discuss parts of the body and circulation, as well as talking about how heartbeat and breathing rates differ during hibernation.

Evolution and inheritance: Pupils learn about hedgehog fossils and how mammals came into their own after the dinosaur extinction. Could also discuss the high numbers of "blonde" hedgehogs on some British islands.

The pack comprises the following:

1. Lesson Plan
2. PowerPoint slides (divided into four parts)
3. PowerPoint slides with accompanying teacher notes
4. Activity "Games" Sheet
5. "Food Scramble" Activity Sheet
6. "Spot the Nesting Plants" Activity Sheet
7. "Spot the Insects" Activity Sheet
8. "Quiz" Activity Sheet
9. "Survey Objects" Teacher Resource Sheet
10. "Match the Footprints" Activity Sheet
11. Activity "Footprint Survey" Sheet
12. Activity "Identify Footprints" Sheet
13. "Ten Point Plan" Take-home Sheet

Pupils across Key Stage 2 are encouraged to *work scientifically* by using a footprint tunnel within the school grounds. They use the survey equipment to gather and record data to answer the question of whether hedgehogs are present or absent. They identify and classify footprints found, and can use features and measurements to do so. They can also explore how reliable these results might be.

Hedgehogs and the Curriculum: Key Stage 2 (Years 3-6)

Learning Objectives

1. To understand how hedgehogs are adapted to their habitat
2. To understand a hedgehog's habitat requirements
3. To understand why hedgehogs are under threat and why we survey for them
4. To set up a survey for hedgehogs in the school grounds
5. To brainstorm ideas to make the area hedgehog-friendly

Resources required:

- Projector/SMART board, laptop, presentation
- Activity sheets
- Large paper sheets to brainstorm
- Hedgehog tunnel kit

Activity	Duration			Reference
1	15 mins	Introduction to Hedgehog Conservation	**PowerPoint Presentation to introduce the species** Introduce terms and key concepts of hedgehog conservation, adaptations to the environment and their requirements. To include the hedgehog's life cycle and hibernation. *For upper years: Look closer at the biology of the hedgehog and how the spines work.*	KS2 PowerPoint (Part 1)
2	Variable	Hedgehog adaptations	**Indoor/Outdoor Activity** Play games to demonstrate hedgehog senses (hearing, smell), rolling into a ball and hibernation. *For upper years: Activity sheets.*	Activity - Games (2, 4 & 6); Activity sheet - Food Scramble
3	Variable	Hedgehog habitat	**Outdoor Activity** Explore importance of plants in providing suitable habitat and insects as a food source. Use activity sheets to spot different plants used, and insects eaten, by hedgehogs in the school grounds. Investigate micro-habitats: log piles, under rocks, bug houses. Identify insect food. Consider materials for a hibernation house and good locations to site one. *Additional: Create suitable habitats - leaf piles, compost heaps, sow wildflowers.*	Activity sheets - Spot the Nesting Plants & Spot the Insects
4	15 mins	Hedgehogs under threat & People	**PowerPoint Presentation to look at threats to hedgehogs and understand why their numbers are reducing** Talk about hedgehog decline and possible reasons why. Brainstorm ideas on ways to mitigate hazards. Effects of replacing hedges with fences and plants for artificial man-made products (e.g. astro-turf, plastic plants). Look at reusing/recycling man-made materials to benefit wildlife. *Additional: Design and create shelters/dens, feeders, bug homes.* *For upper years: Impact of new housing developments, transport networks, native plants vs invasive species, and intensive farming practices.*	KS2 PowerPoint (Part 2a); KS2 PowerPoint (Part 2b); Activity sheet - Quiz

Hedgehogs and the Curriculum: Key Stage 2 (Years 3-6)

5	15 mins	Working Scientifically: Hedgehog Survey Task	**Indoor Activity** Divide class into small groups; each is given a laminated survey object related to hedgehog detection. Groups to work together to decide how objects are used to find out where hedgehogs have been. Use large paper to write down answers/draw diagrams. Invite answers from each group. Use slides to talk about how to survey for hedgehogs. Ask children to match the footprints and talk about the different features of the prints.	Teacher Resource Sheet - Survey Objects; KS1 Powerpoint (Part 3); Activity Sheet - Match the Footprints
6	15 mins	Working Scientifically: Hedgehog Survey Task	**Optional: Outdoor Activity** Set up a footprint tunnel in school grounds. Demonstrate how to set tunnel and how to remove and replace papers. Ask where children think the best place to put their tunnel is and why. Ask children to draw a map of the area making a note of fences, hedges and other features.	Activity - Footprint Survey and Identify Footprints
7 & 8	15 mins	Design of results form for survey & design of Nature area	**Optional: Indoor Activity** Design a results table/chart for recording the results for the footprint tunnel survey. Children to return to class to add to their maps ideas for making the grounds more hedgehog-friendly. Also to consider how other wildlife might use this nature area. *Additional: Ask children to do the same for their own gardens.*	Activity - Footprint Survey and Identify Footprints

Hedgehog Survey Task

Resources required:

- Hedgehog tunnel kit, including white paper, ink, food
- Wildlife camera (optional)

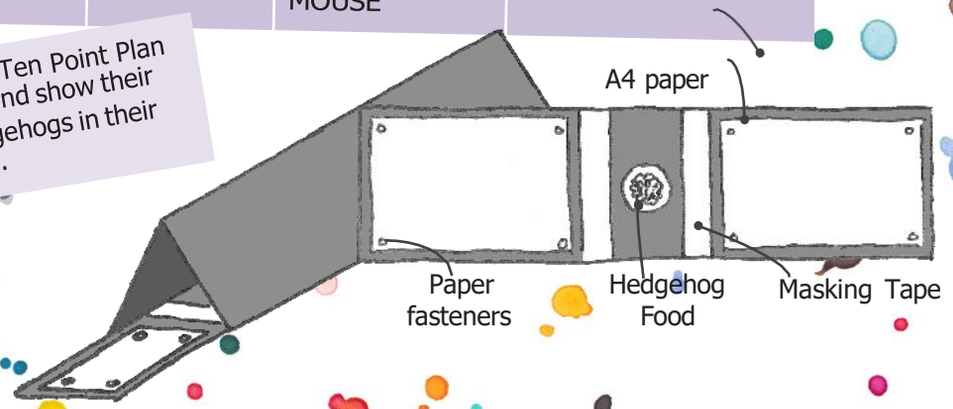
Decide how you will monitor the footprint tunnel and how pupils will be involved. Make and decorate results table to fill in as the tunnel is monitored over time.

Results could be recorded as a large pictorial results table 'display' for the classroom. This could be decorated with hedgehog art and images of animals and any footprints collected from the tunnels and cameras.

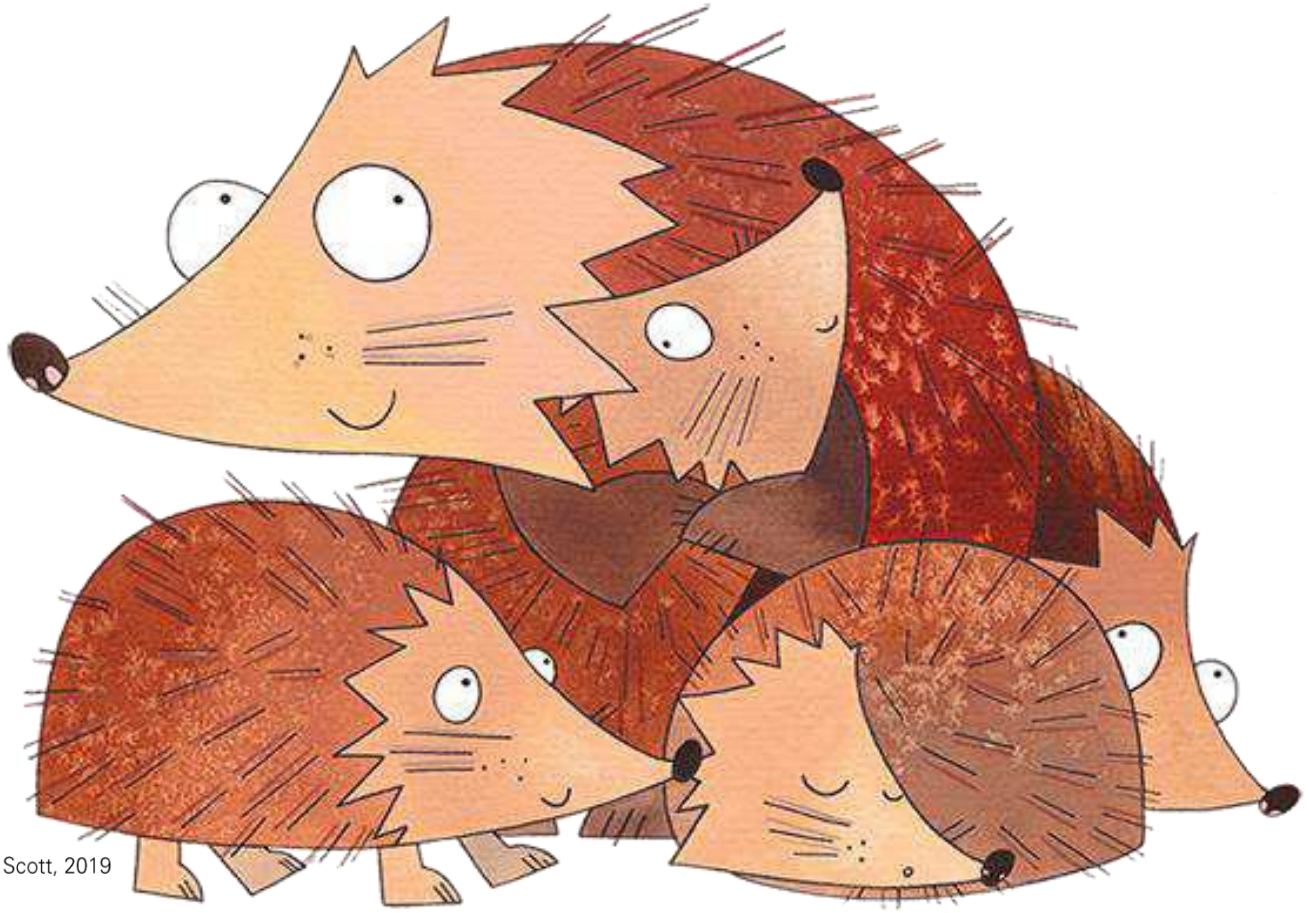
Tables should always include information in the table to the right but could include more information – eg, the weather, time animals were spotted.

Tunnel Number	Date	Footprints?	Which animals made them?	Was the food eaten?
e.g. Tunnel 1	12/03/19	YES	HEDGEHOG CAT MOUSE	YES - SOME

Give children a copy of the Ten Point Plan to take home with them and show their parents ways to help hedgehogs in their own garden.



KS2 Hedgehogs: Part 1



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What is a hedgehog?

Prickly

Omnivore

Mammal

Snuffle & snort

Solitary

Hedgehogs as we know them came about **15 million years** ago

Fossil of a hedgehog-type spiny mammal dates back to **125 million years** ago

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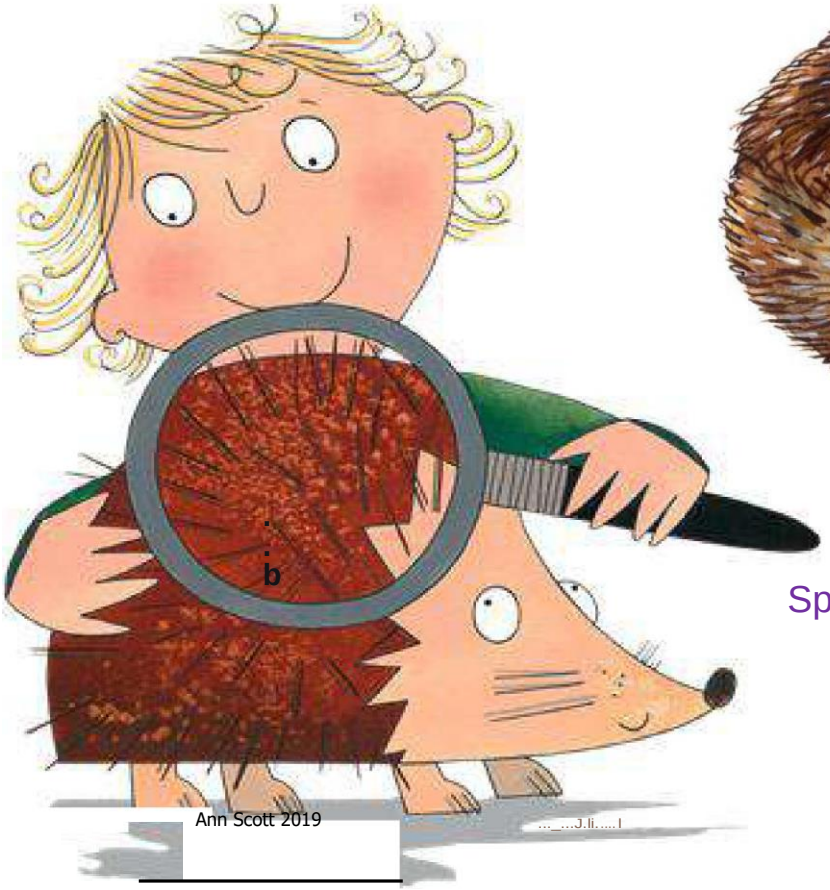
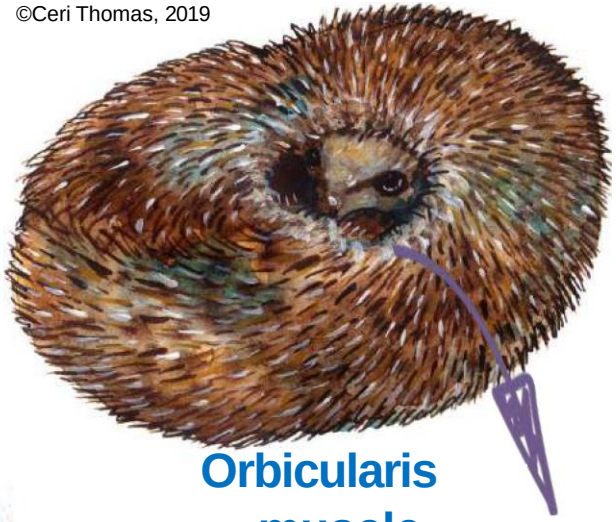
What adaptations do hedgehogs have?

Spines

2 cm **long, banded brown & cream**

Modified hair made out of **keratin,** the same material as your hair and nails





Orbicularis muscle

Spines act as a **Shock absorber** & are raised when sense **Danger**

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What adaptations do hedgehogs have?

Great sense of smell

Excellent Hearing

Nocturnal

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What do hedgehogs eat?

Insects & Creepy Crawlies

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Food chain

Producer

Consumer

Consumer

Consumer

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Food web

Predators

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Hibernation

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Hibernaculum: a winter refuge

November - March

Heartbeat slows

Breathing slows

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Where are hedgehogs?

West European Hedgehog

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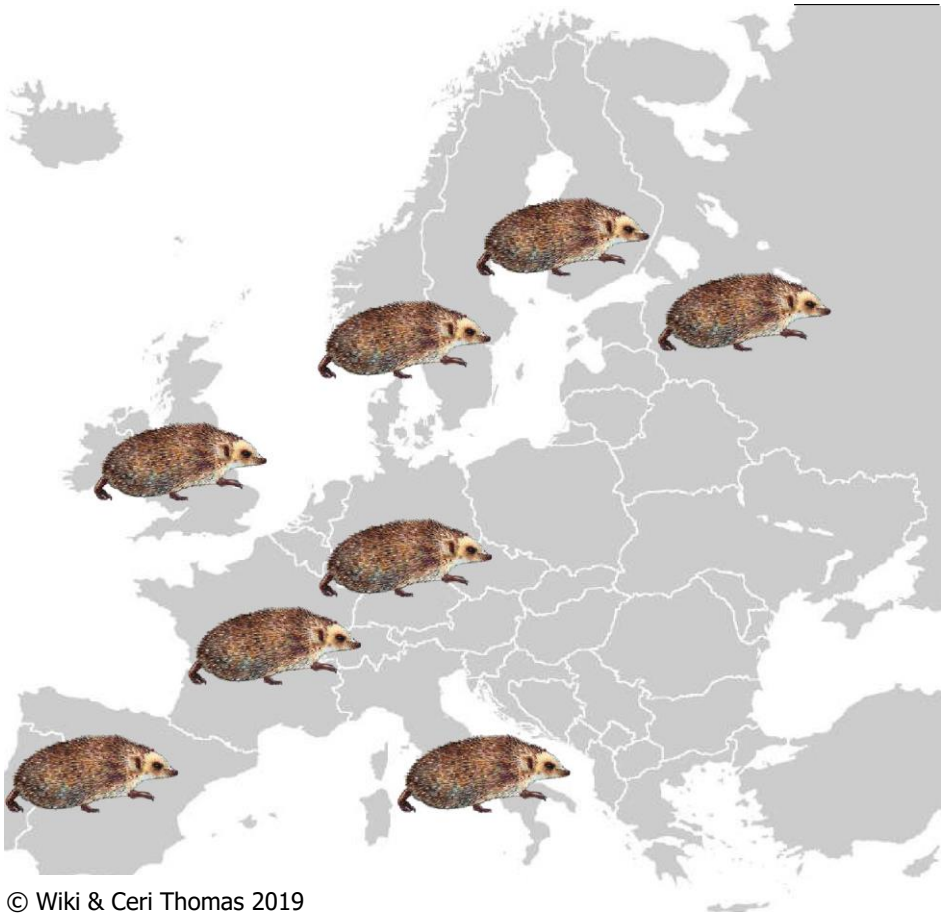
17 species in the world



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Hedgehog Year

SPRING
April - June
Emergence, feeding & looking for a partner

SUMMER
June - September
Hoglets born, independent at 6-8 weeks

WINTER
November - March
Hibernation

AUTUMN
September - November
Feeding & late **litters** born

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Hoglets

Quiz

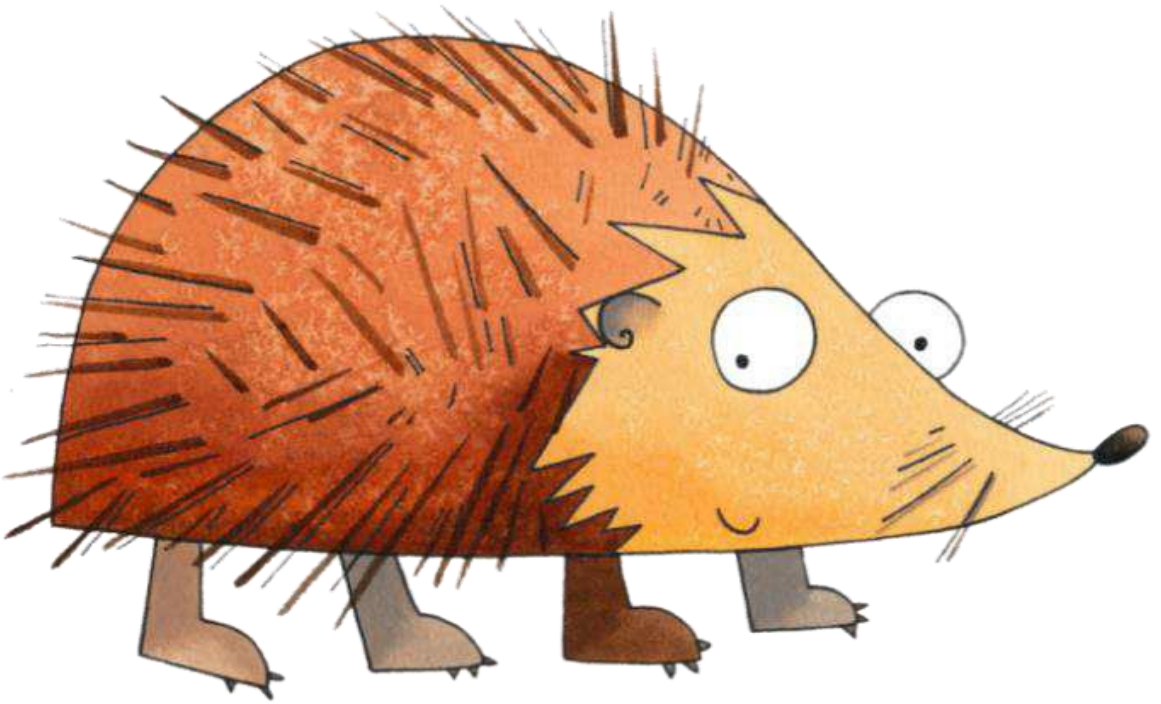
1. Which special muscle, starting with the letter O, helps a hedgehog to roll up into a ball?

2. How many spikes does a hedgehog have?

3. What is the name of a hedgehog's winter nest, starting with the letter H?

4. How many different hedgehog species are there in the world?

Time to be a hedgehog!



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Hedgehog Habitat

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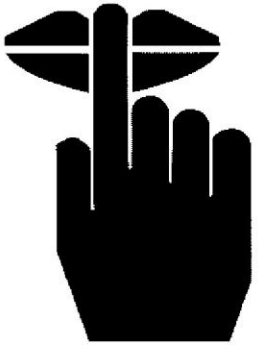

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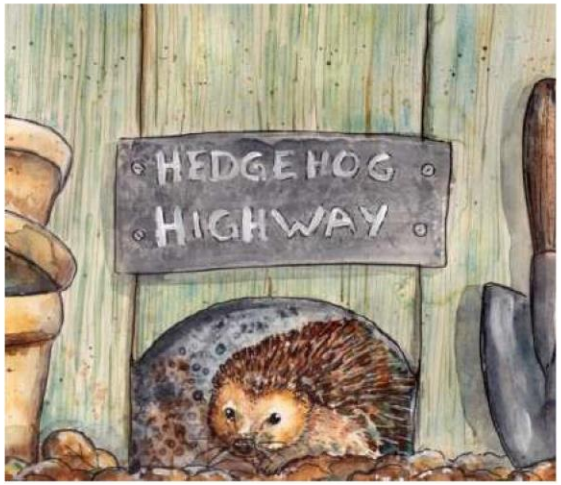

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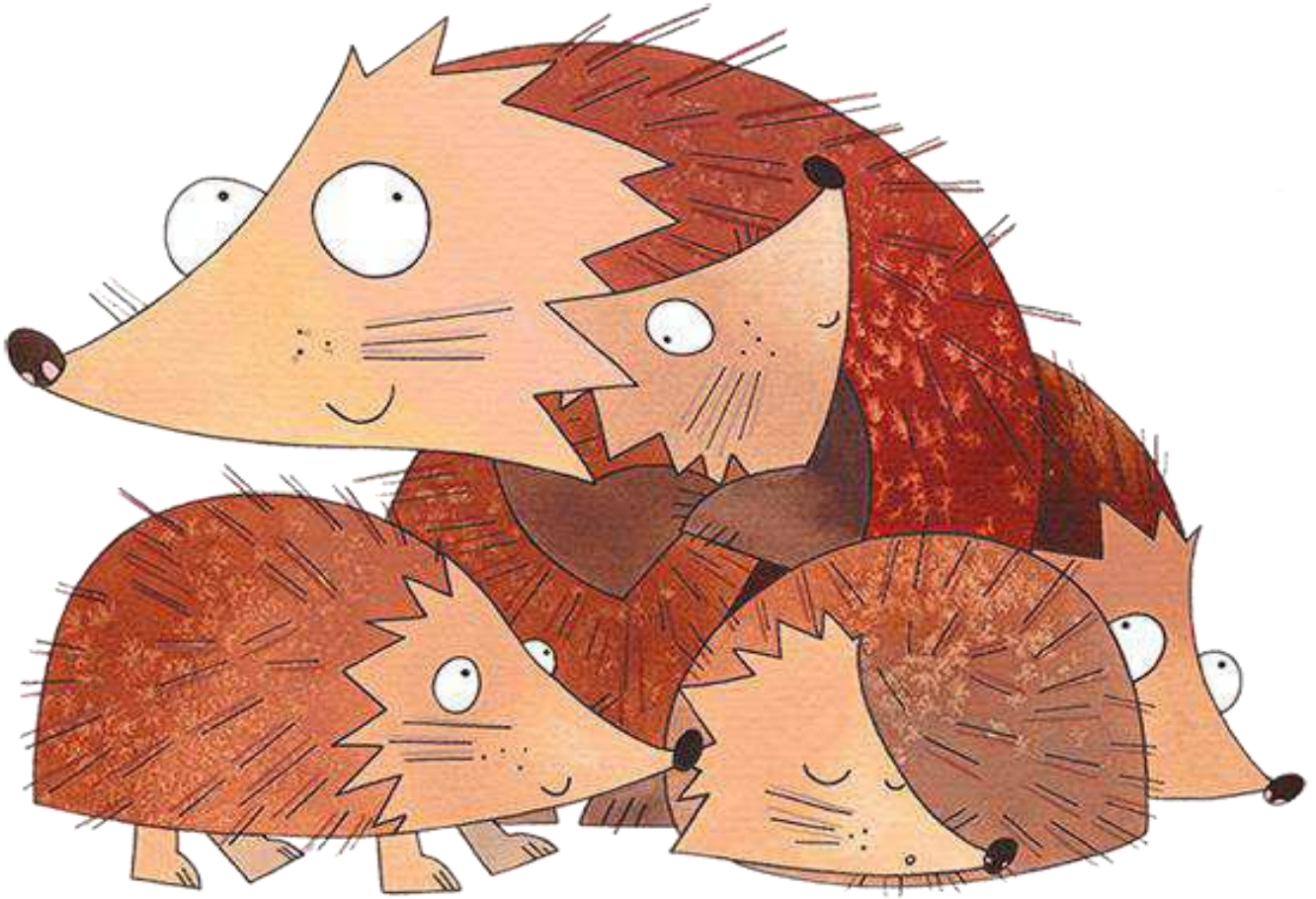
KS2 Hedgehogs: Part 2a



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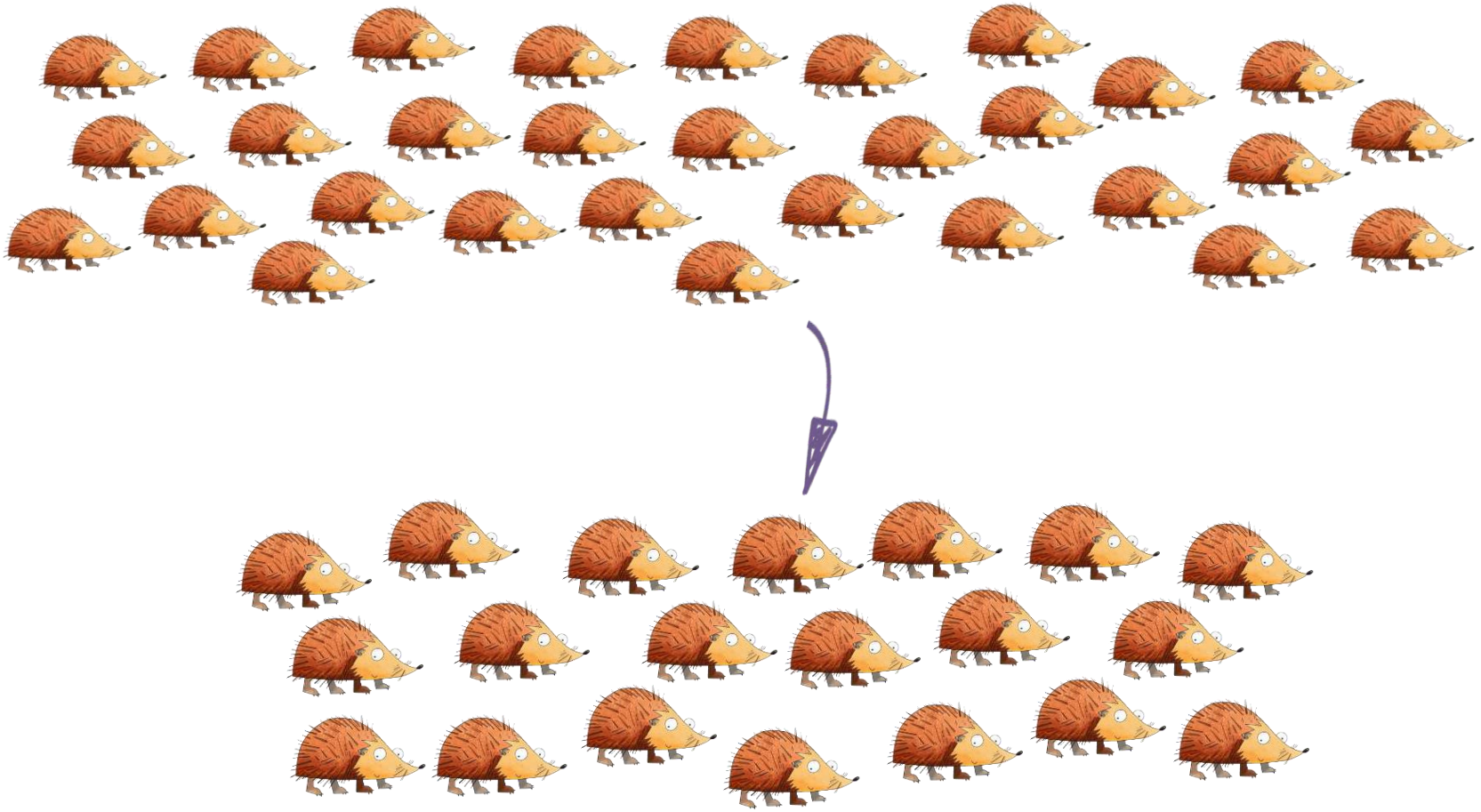
Hedgehog Numbers



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Problems for hedgehogs

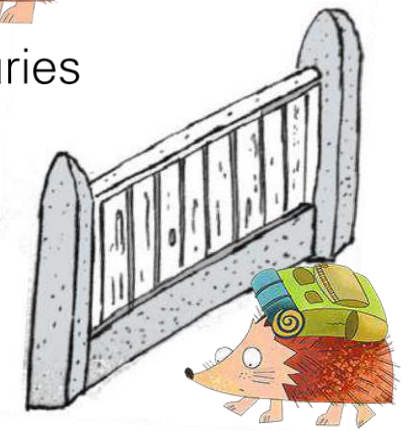
Fewer hedgerows

Chemicals

Injuries

Roads

Competition for food



Habitat fragmentation

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Problems for hedgehogs

Native hedge

= easy access & safety

VS

Walls & fences

= barriers

Problems for hedgehogs

© Amy Lewis 2019

Natural lawns with longer wild areas and wild flowers

VS

© Project Manhattan

Astro Turf – artificial grass & plants

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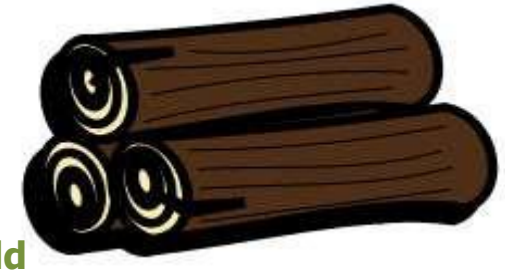
Helping hedgehogs

Leave some areas wild

Make a log pile



Bonfire night

Check before mowing

Make ponds safe

Don't use slug pellets

Pick up litter

Link your garden

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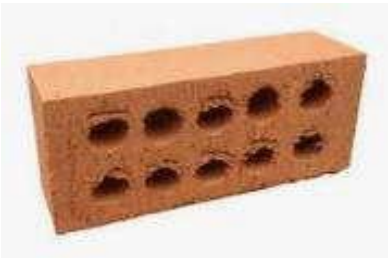
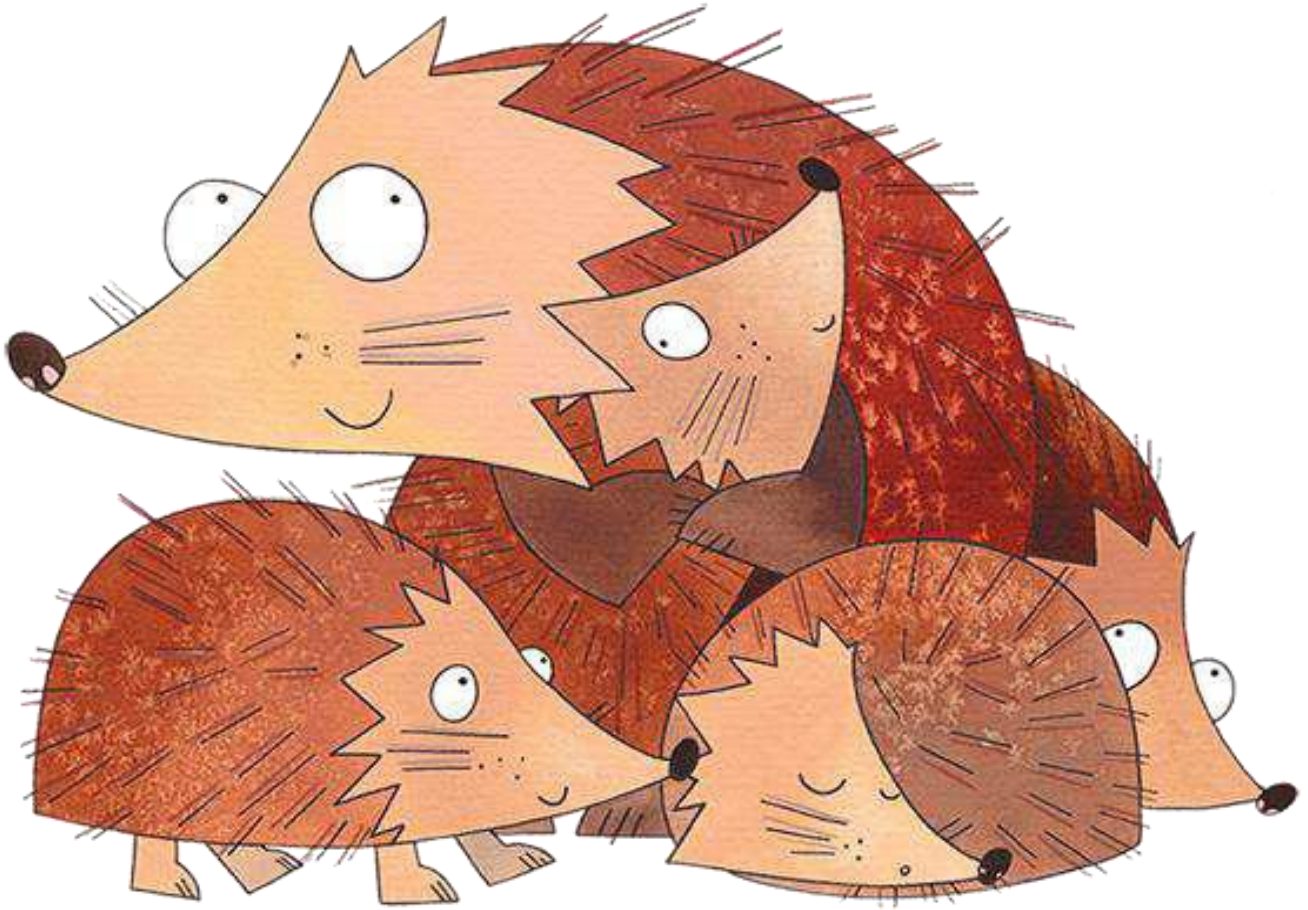
Get Creative

What materials could we reuse to benefit our wildlife?



KS2 Hedgehogs: Part 3



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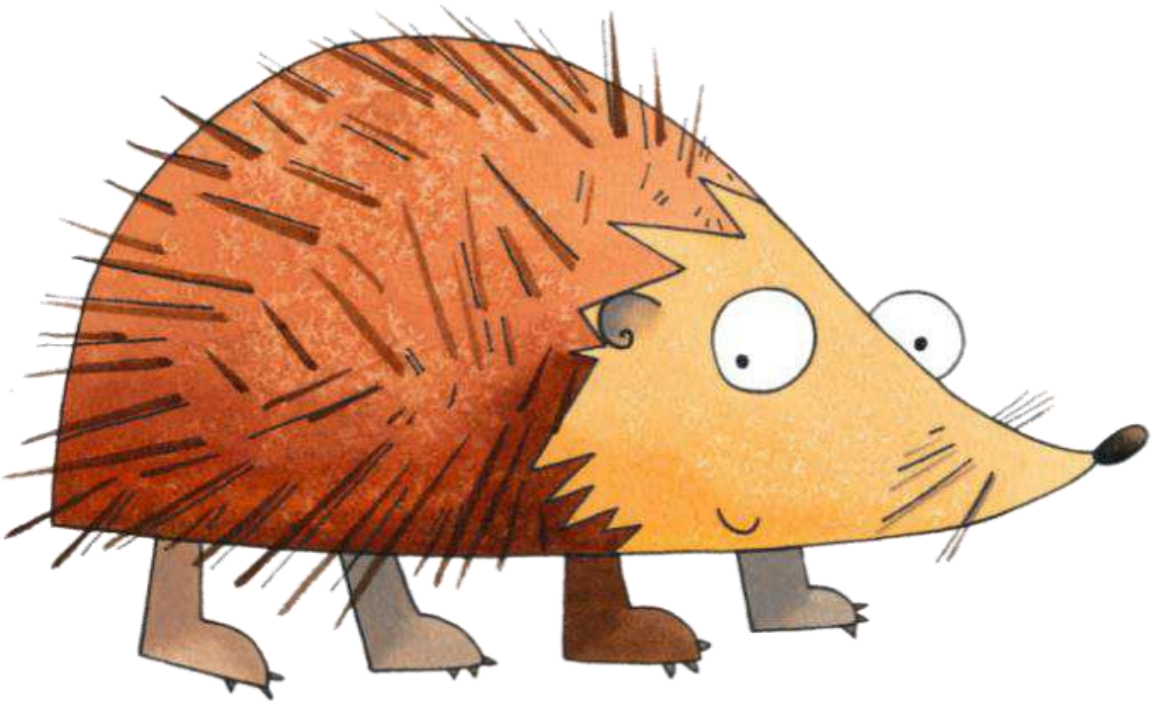
Finding hedgehogs



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Torchlight surveys

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All night searches by torchlight

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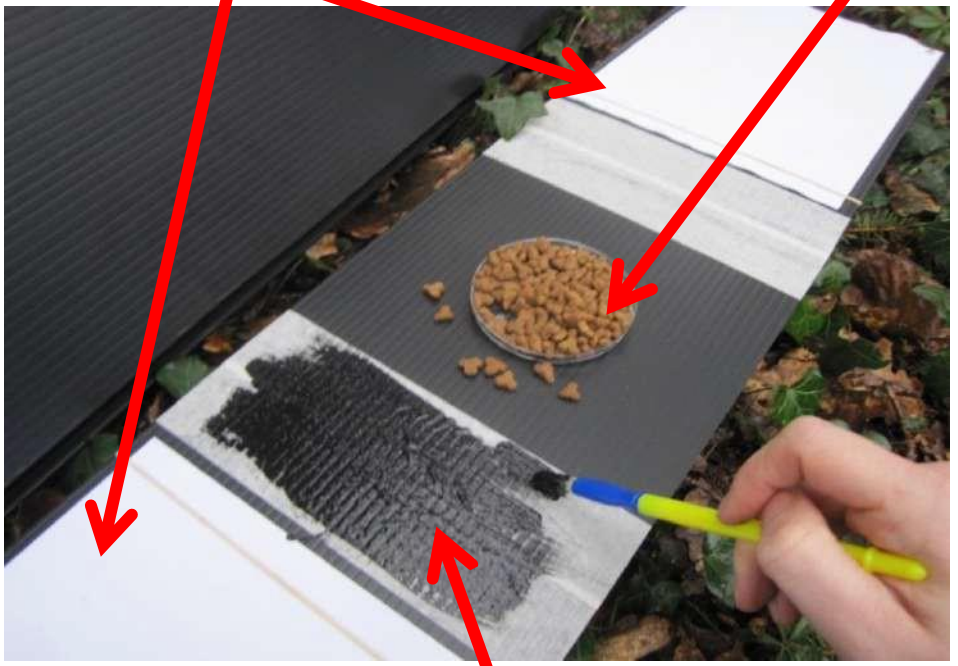
Footprint tunnel surveys

White paper

Hedgehog food



Place on an edge and leave overnight

Vegetable oil & charcoal

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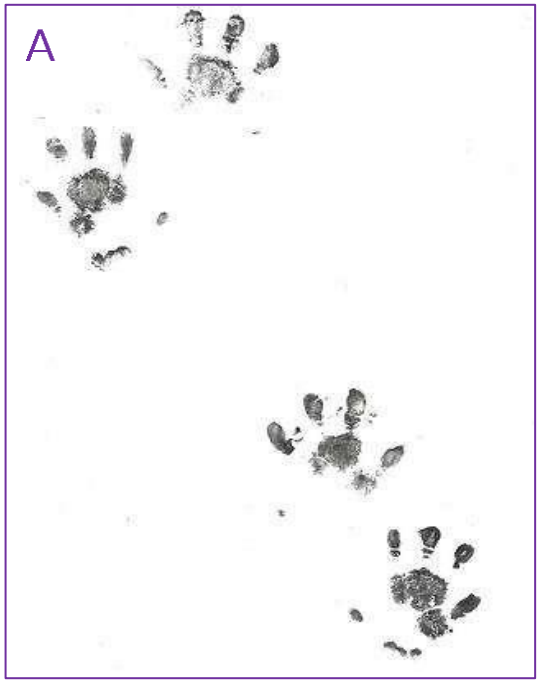
Footprints



Plantigrade

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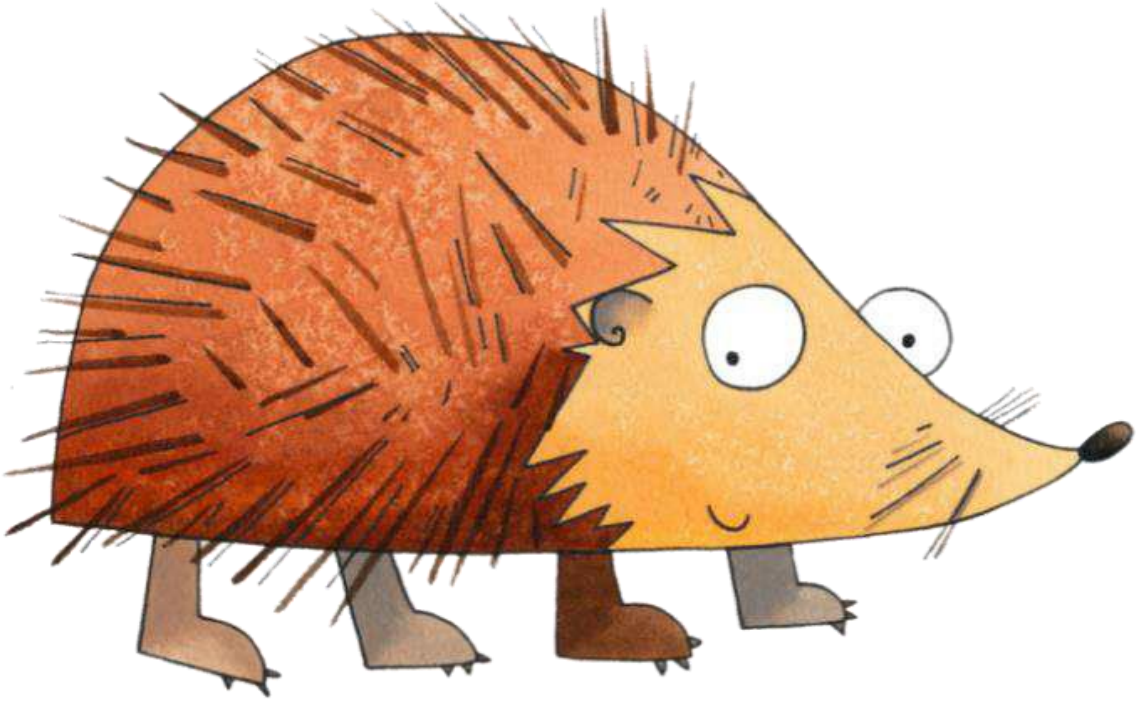
Hope you enjoyed learning about our prickly friends!



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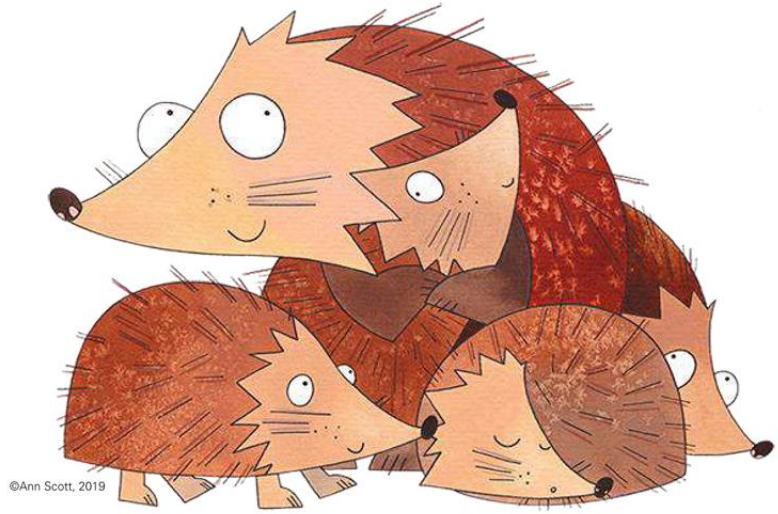
KS2 Hedgehogs: Part 1



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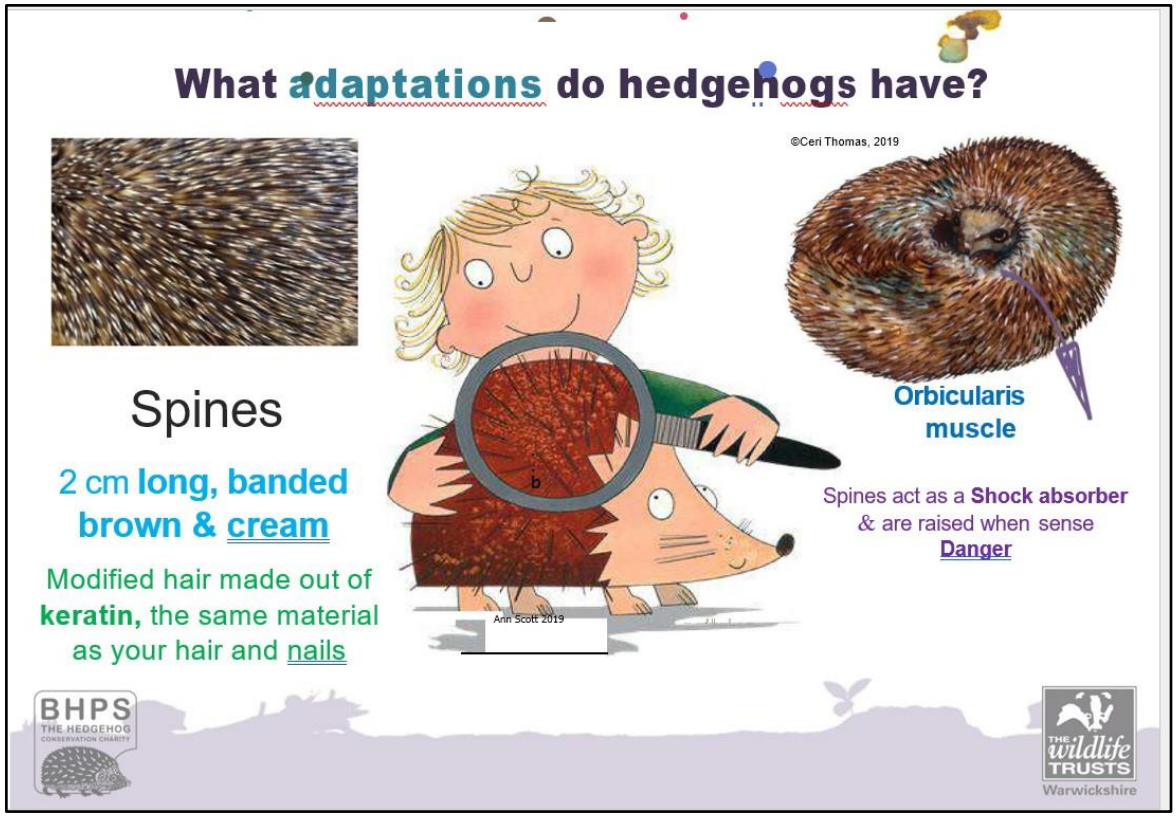
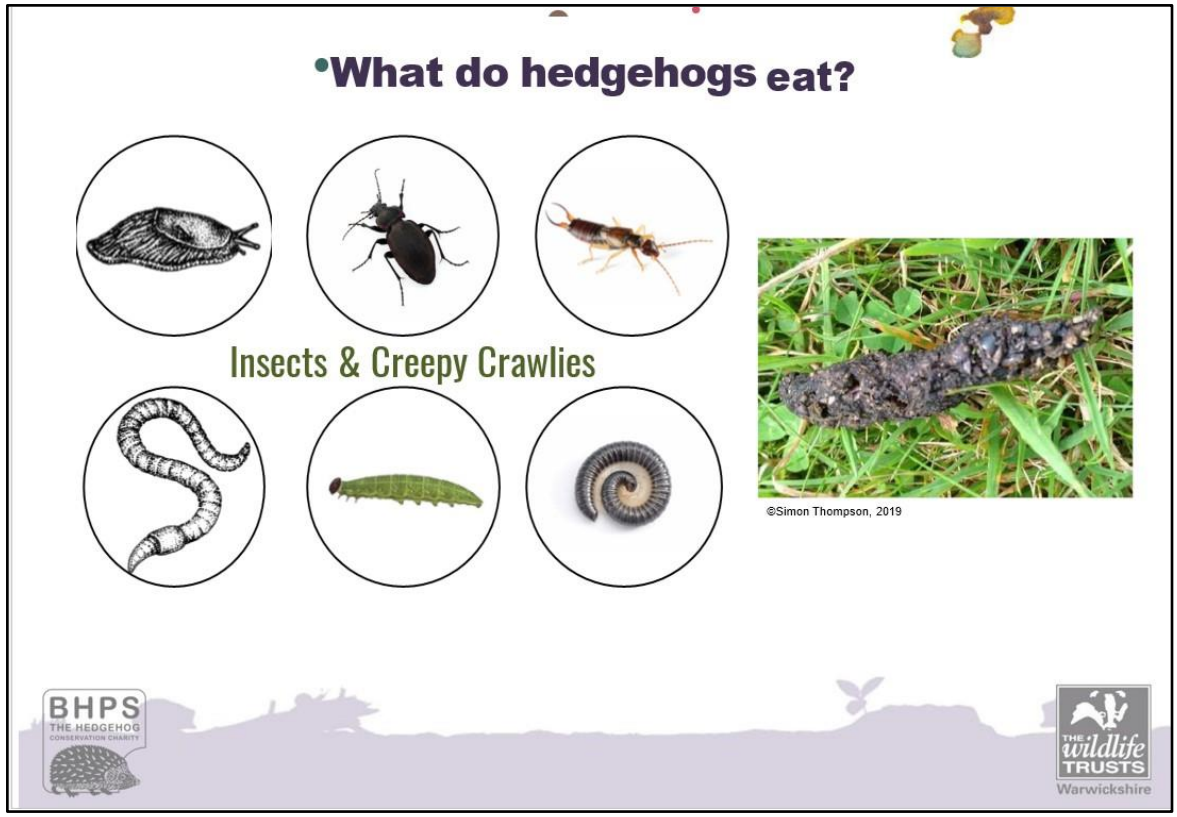
Ask the class what they think a hedgehog is.
It is prickly! Covered in spines.
It is a mammal.
It is solitary and does not live in groups like Badgers or Rabbits.
It is an omnivore. *Ask children what omnivore means*: it means it eats both meat and fruit/vegetables.
It snuffles & snorts! It got its name as it likes to live in hedges and snuffles like a pig.
Hedgehogs make loads of different noises: Head to http://hedgehog-rescue.org.uk/sounds/noises.php to explore the noises.
Hedgehogs go back millions of years, with similar mammals living in Spain 125 million years ago!
For upper years: Discuss in relation to evolution and mammals coming into their own after the Cretaceous period when dinosaurs died out.
Occasional blonde hedgehogs much more common on some offshore British islands
For upper years: Discuss recessive genes and foundation populations on islands e.g. Alderney, where there were a few blonde hedgehogs to start with, and so there are lots of their offspring that are blonde.

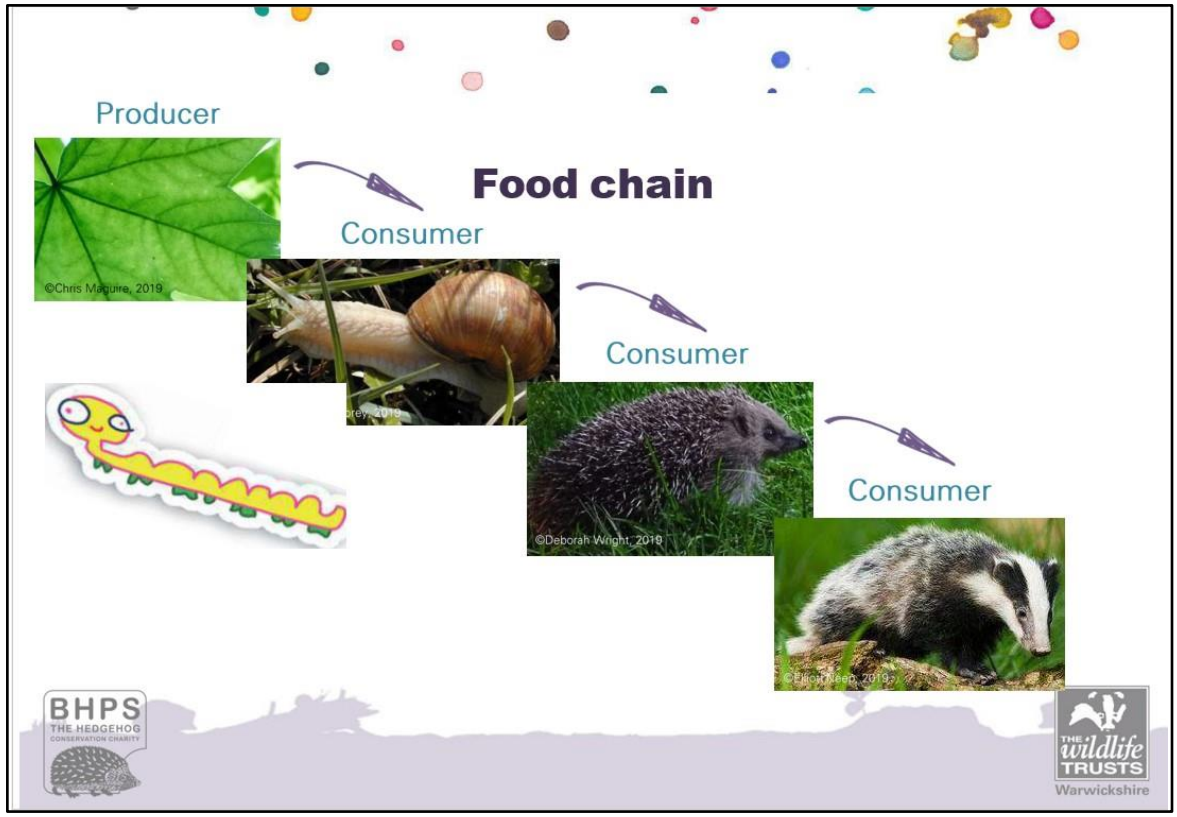


*Ask children how many **spikes** a hedgehog has.*
Hedgehogs have up to 7000 spikes, hollow and prickly versions of our hair to protect them from harm.
Show the children using hands by crisscrossing fingers how spikes can be used to defend from above – spikes are attached to individual muscles so that spikes point in different directions.
Ask children what hedgehogs do when they are scared.
Hedgehogs raise their spikes and **curl up into a ball**, using a special **orbicularis muscle** that closes in on itself like a drawstring bag.

Hedgehogs have a **great sense of smell** and also excellent hearing, which helps them find their food. These help compensate for poor eyesight.
They are **nocturnal** – *ask children what nocturnal means*: they come out at night and sleep during the day.



Ask children what do hedgehogs eat.
Hedgehogs eats a wide range of insects, as well as birds eggs, frogs and occasionally fruit, hence they are omnivores.
Hedgehog poo is dark, about the size of an adult's little finger and contains the crunched up remains of a favourite food: beetles. This means it often glints and shines in the sunlight!
Only use find 1 or 2 droppings and often not very obvious – hedgehogs are **not territorial** so do not use droppings as markers.



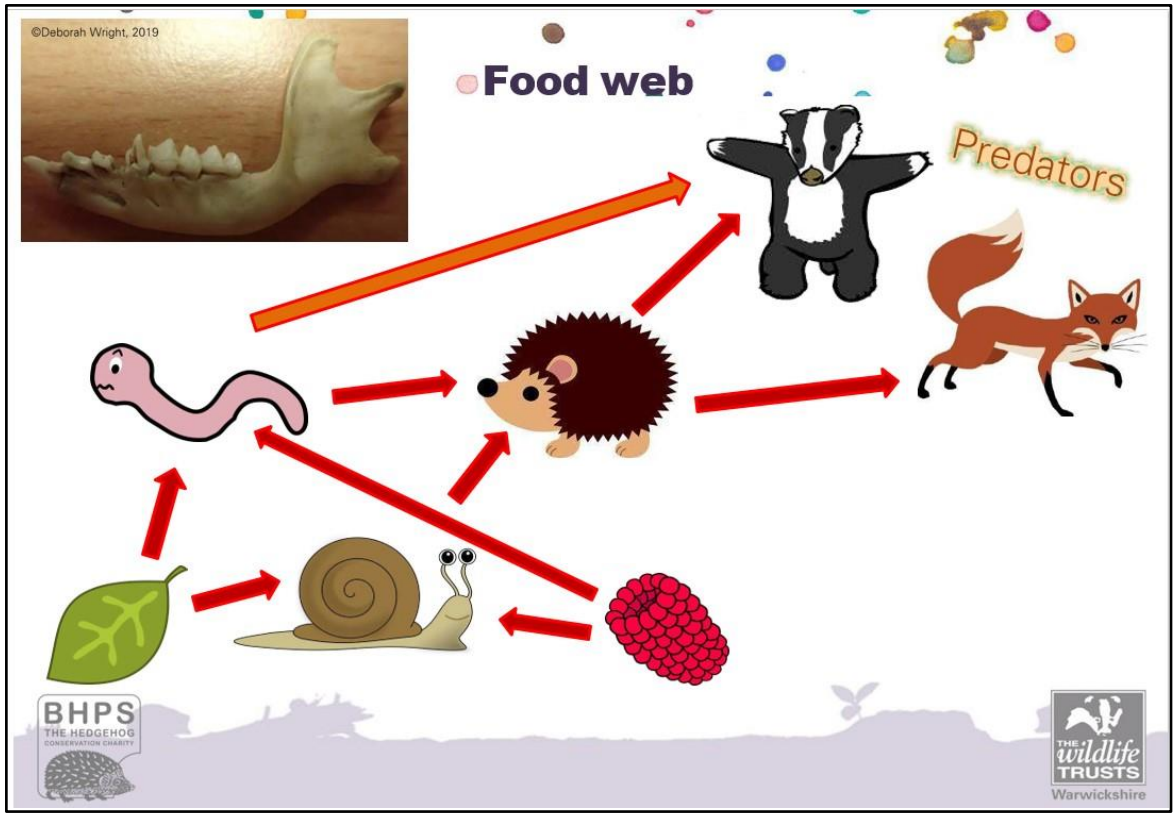
All living things need to consume something like food for energy. Because of this, all living things are part of a food chain.

All living things need energy from food to grow, repair themselves and reproduce. Plants get their energy from sunlight in **photosynthesis**. Animals need to eat plants or other animals to get their energy.

The flow of energy from one living thing to another is shown in the arrows in a **food chain**. In the food chain, the arrows represent the flow of energy.

Ask children to think about how hedgehogs fit into the food chain – what other examples of consumers are there?

Discuss possible problems that can occur if the food chain is disrupted or changed. Changes in food chains affect all the living things in them.



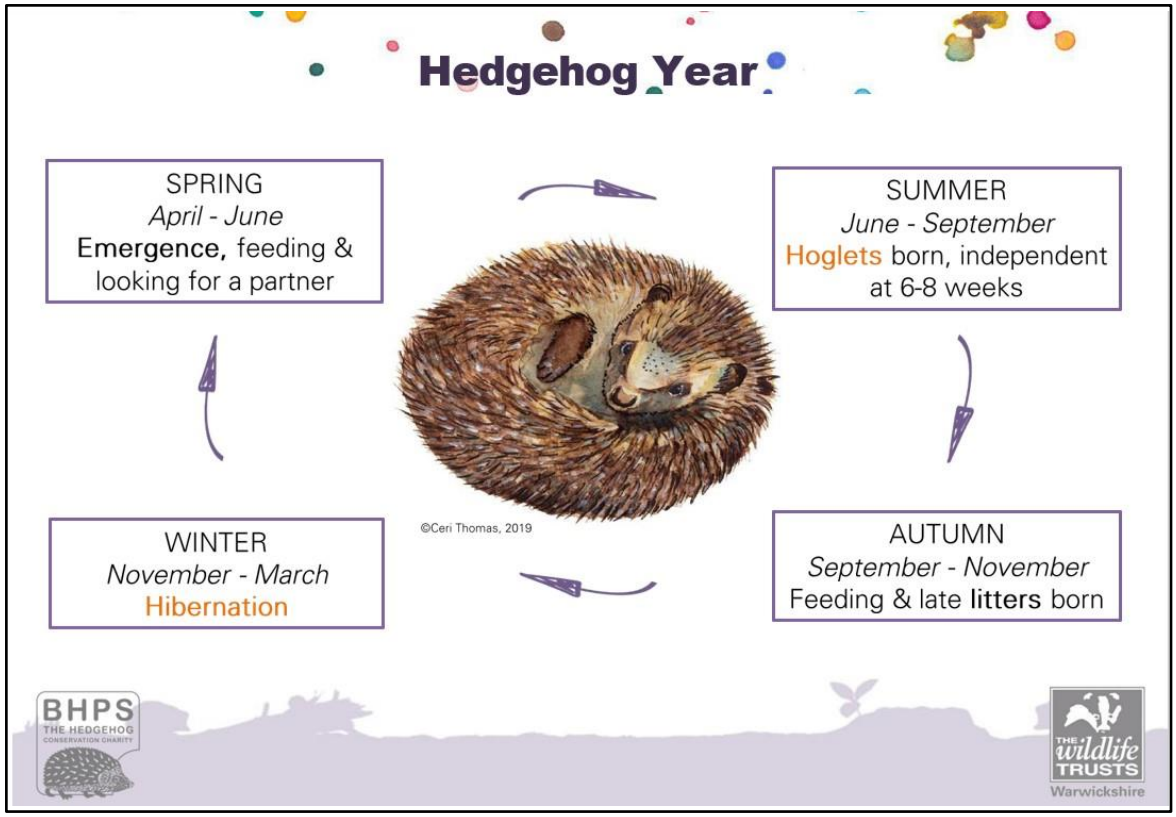
Badgers and foxes may sometimes eat or **predate** hedgehogs.
But the food web shows that badgers also like to eat worms, like hedgehogs. So they are **competitors** for the same food too.
Talk about hedgehog teeth in relation to their omnivorous diet.

Hibernation is the hedgehogs way to survive winter. What happens in winter? It gets colder, it might snow, food is harder to find.
They curl up in a safe place – they make a nest of leaves under a hedge or in the compost pile or in a house we have made for them.
Their heartbeat and their breathing slows right down to save energy.
Demonstrate the heartbeat slowing with clapping and get the children to join in – clap once per second and then once every 3 seconds.
Ask children which speed uses more energy.

Hedgehogs hibernate in nests called a **hibernaculum** – a winter refuge that can be artificial (you can buy one) or made by the hedgehog. It is usually a sturdy structure made under a hedge or brambles and is made up of leaves. In the summer, they often make flimsier **day nests,** or **nursery nests** for the babies.

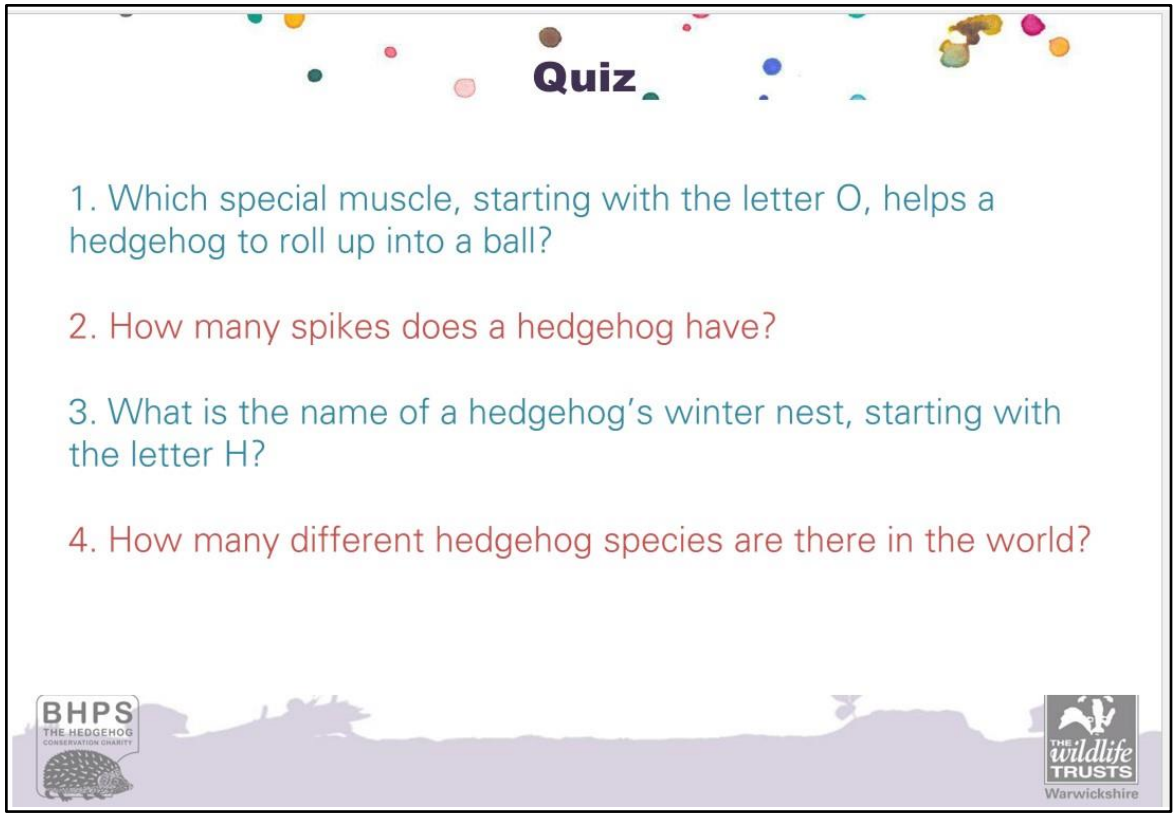
Hedgehogs ideally need a constant cold winter to sleep through. Changing weather patterns can mean that hedgehogs waste energy waking up lots during warm spells when there is little eat. They do not want to freeze so hedgehog body temperature shouldn't be below 0 degrees, but they don't want it to be too warm, or they will waste too much energy.

We only have one hedgehog here that is widespread across western Europe.
There are 16 other species though in the world.
Ask children if they have been abroad. Get them to point out where. Have they seen other hedgehogs? What were they like?



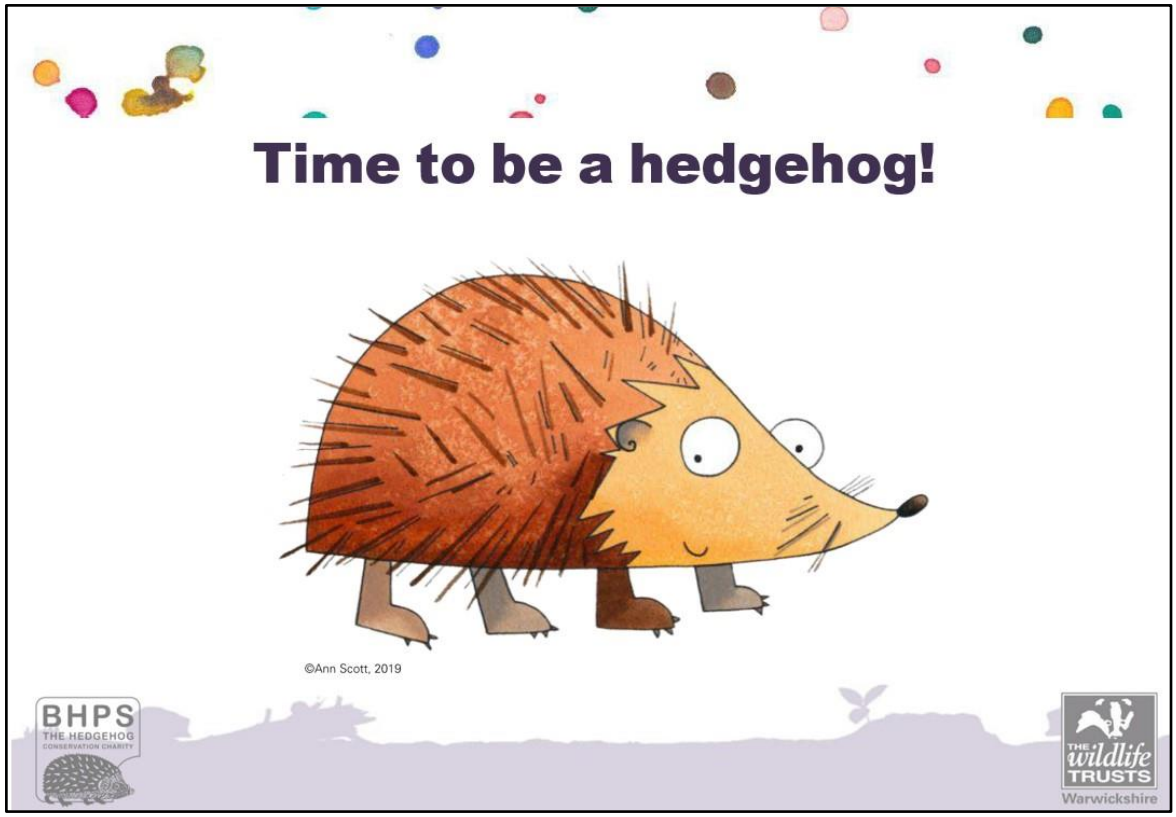
In spring, hedgehogs come out from their winter hibernation hungry – they are very active looking for food as well as looking for a partner.
In summer, they have **litters** of baby hedgehogs – **hoglets,** emerging after 4 -5 weeks **gestation**. They usually spend 4 weeks in the nest when they are totally dependent on mum, then they have up to 4 weeks out **foraging** with their mum before they are independent.
In Autumn, if the weather has been good, there can be late litters of hoglets. Autumn is all about last minute feeding to get their weights up ready for hibernation. They must be at least **450g** to survive the winter.
Winter is when they hibernate as there is little food available.

Picture 1 – just born, hoglets are born with their eyes and ears closed and with their spines covered by a thin sack of skin. There are usually 4-5 of them in a litter.
Picture 2 – a few hours later their baby spines start to appear. They are not able to fully roll up into a protective ball for at least 11 days so are very vulnerable.
Picture 3 – a few weeks old with more adult spines.
Hedgehogs live for an average of **3-5 years** in the wild, but can live for longer.



1. Orbicularis
2. Up to 7000
3. Hibernaculum
4. 17

Play games to demonstrate hedgehog senses (hearing, smell), rolling into a ball and hibernation – see Activity Games sheet for ideas.
For older years: Activity Sheets.



Play games to demonstrate hedgehog senses (hearing, smell), rolling into a ball and hibernation – see Activity Games sheet for ideas.

Ask the children where a hedgehog would like to live.
Somewhere quiet where there's food, there are leaves to make their nests and where they can get to easily.

OUTDOOR ACTIVITY:
Let's go outside and investigate our nature area using Spotter Sheets and Game 6.

KS2 Hedgehogs: Part 2a

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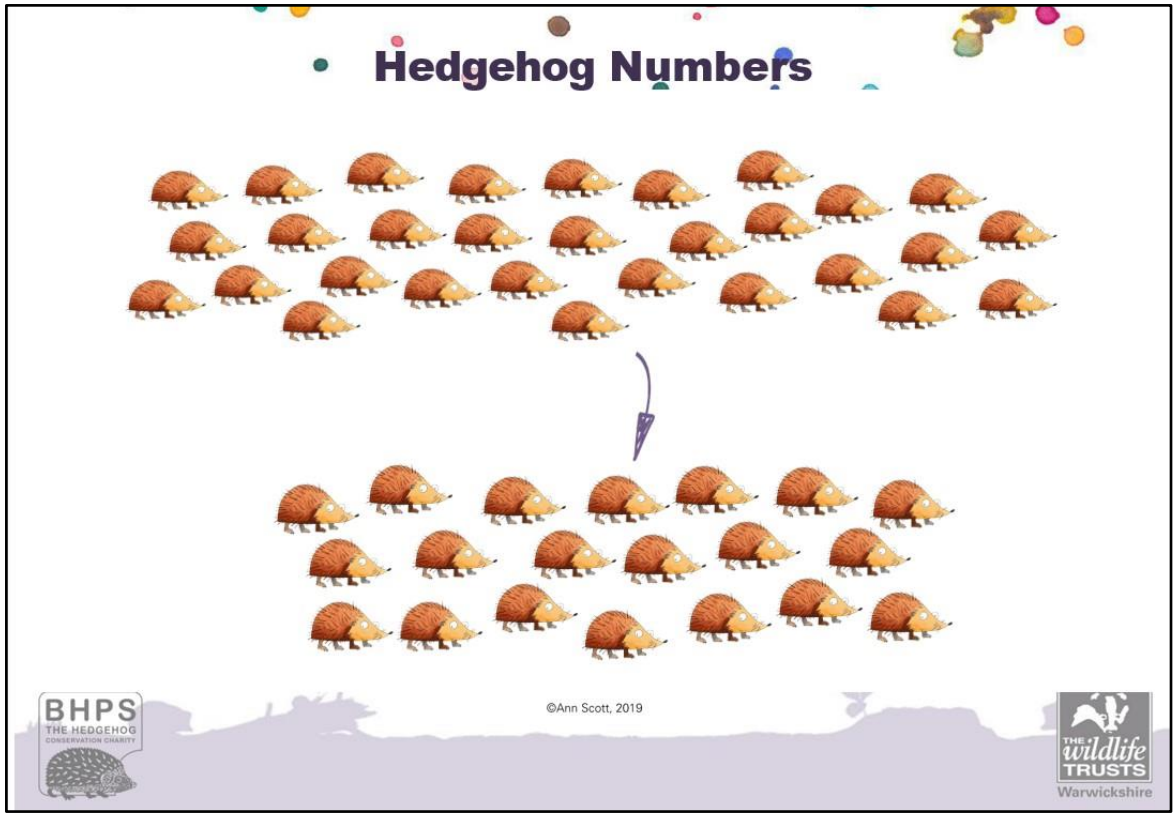
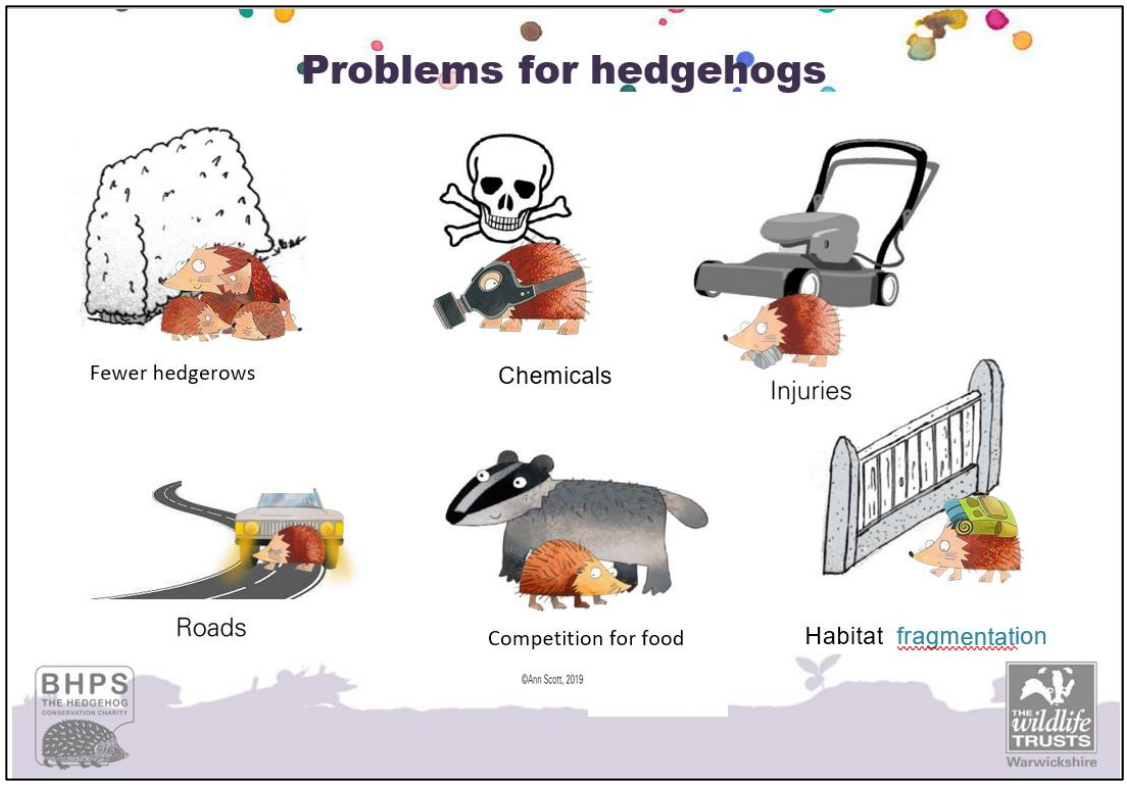
BHPS THE HEDGEHOG CONSERVATION CHARITY

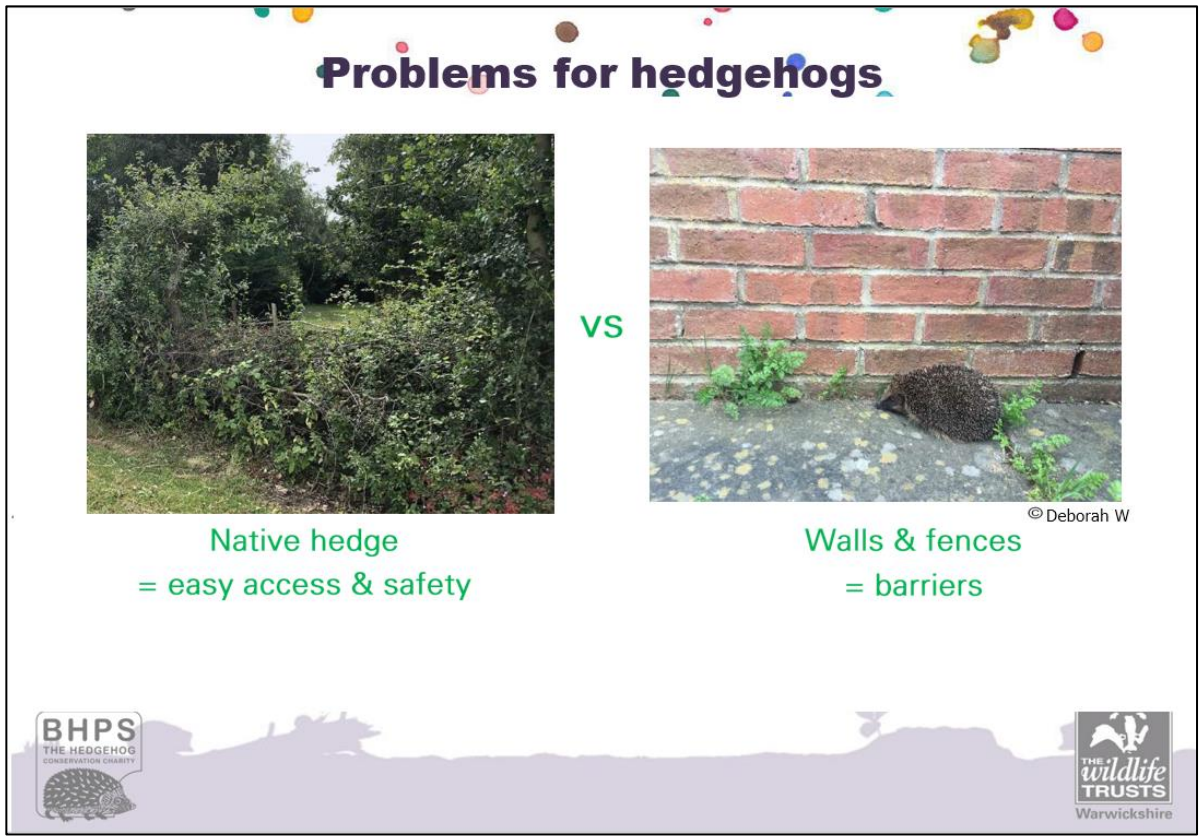
The Wildlife Trusts Warwickshire



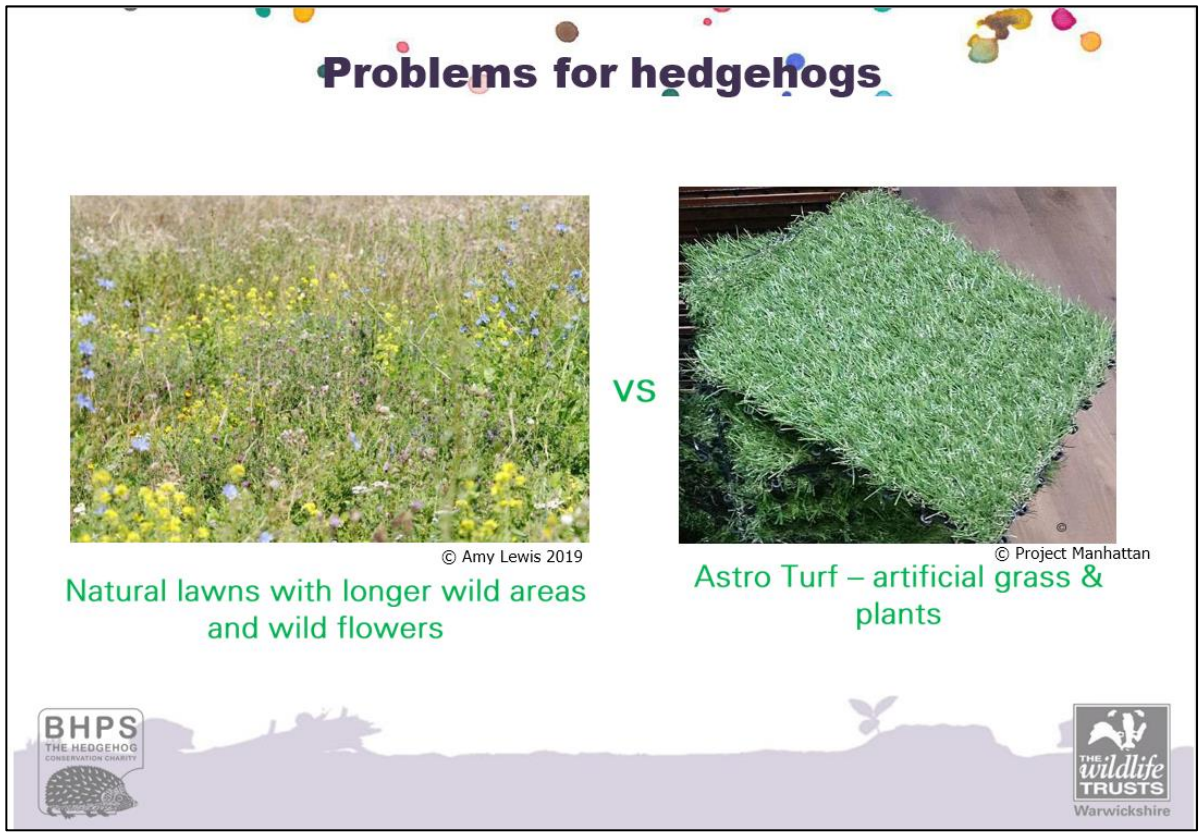
Hedgehogs are in decline, which means there are fewer around than there used to be. We have lost between 30% and 75% of our ‘hogs since the Millennium.



Ask the children why they think there are fewer hedgehogs around today.
There is not as much green space for them because we build a lot.
We use a lot more slug pellets and anti bug sprays. This means there are fewer bugs for them to eat.
They can hurt by lawn mowers and other tools.
There are more roads and a lot more cars than there used to be.
They have to **compete** with other animals for food and space.
There are more walls and fences stopping them from moving around. They can no longer get into the gardens as people have put up barriers.



Ask the children which one is better for a hedgehog and why.
Hedges **connect** the landscape and provide food, shelter and access with gaps at the bottom for hedgehogs to travel through.
Fences and walls divide and **fragment habitat** stopping them travelling between green spaces.



Ask the children which one is better for a hedgehog and why.
Changes to gardens: lawns being replaced with easy care Astro Turf – artificial grass and sometimes plants too.
What does this mean for our wildlife? – less food as no insects in plastic grass. Can't construct nests from plastic grass and plants.

Ask the children for ideas to help hedgehogs.

Look at recycling man-made materials to benefit wildlife.
Ask the children to name these items.
Ask the children to think about what we could use them for:

- Shelters
- Bug hotels
- Bird feeders
- Hedgehog feeding station
- Frog & Toad homes

KS2 Hedgehogs: Part 3

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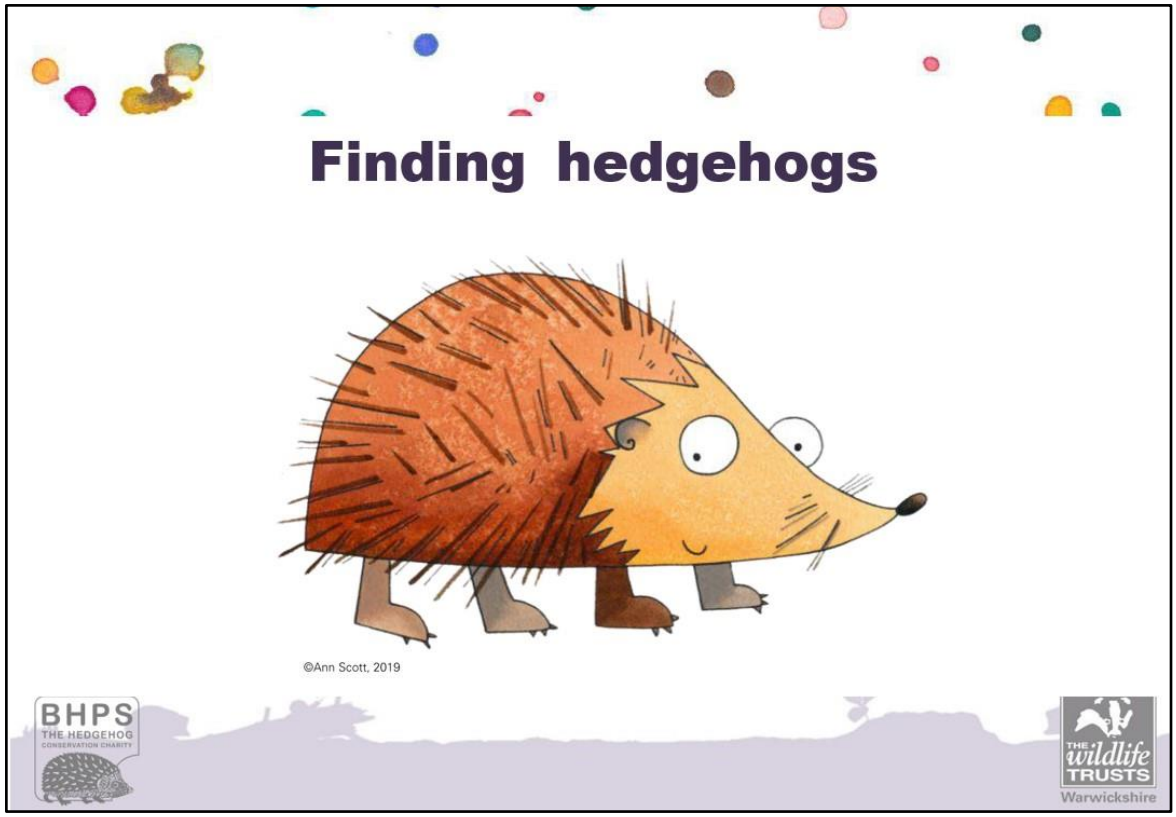
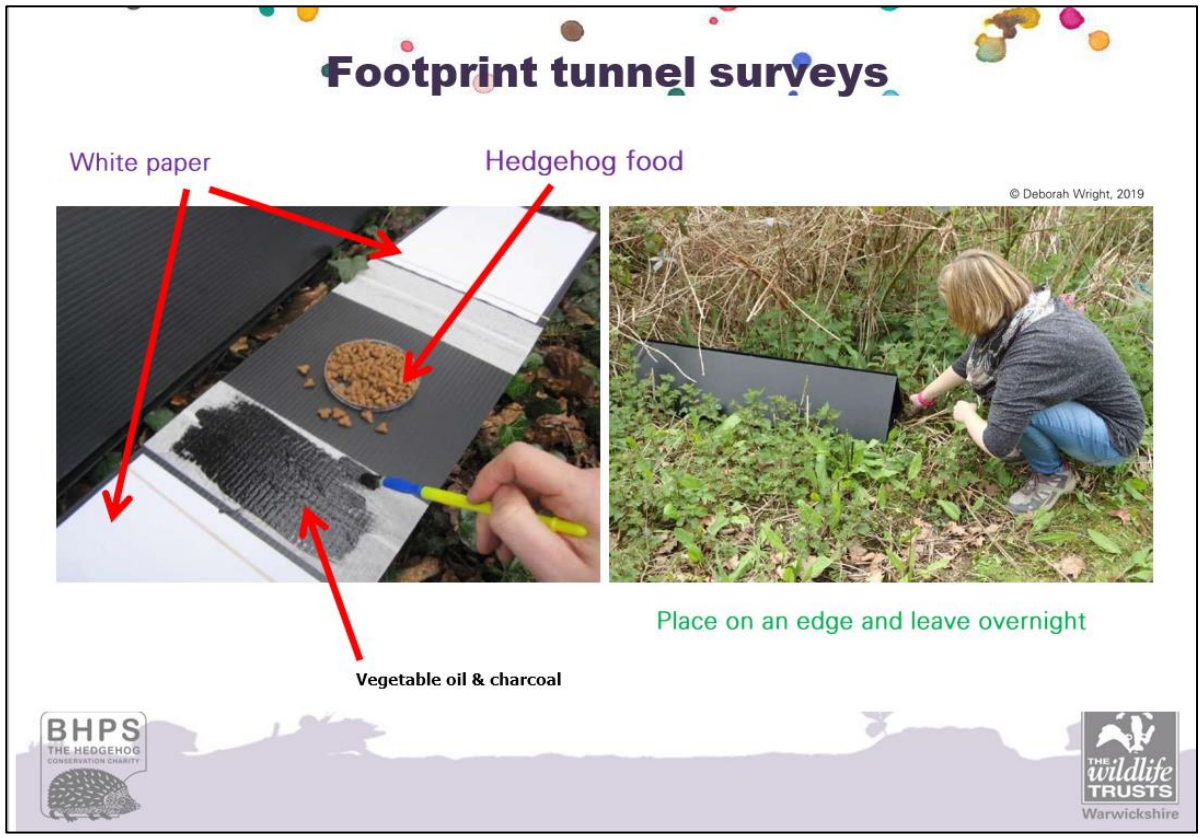


INDOOR ACTIVITY
Use Teacher Resource Sheet - Survey Objects.
Split class into groups to decide how these objects are used to find out where our hedgehogs are. Could write down answers/draw a picture on large sheet of paper or just nominate a speaker from each group to announce their ideas to class.

Two main ways to survey for hedgehogs.

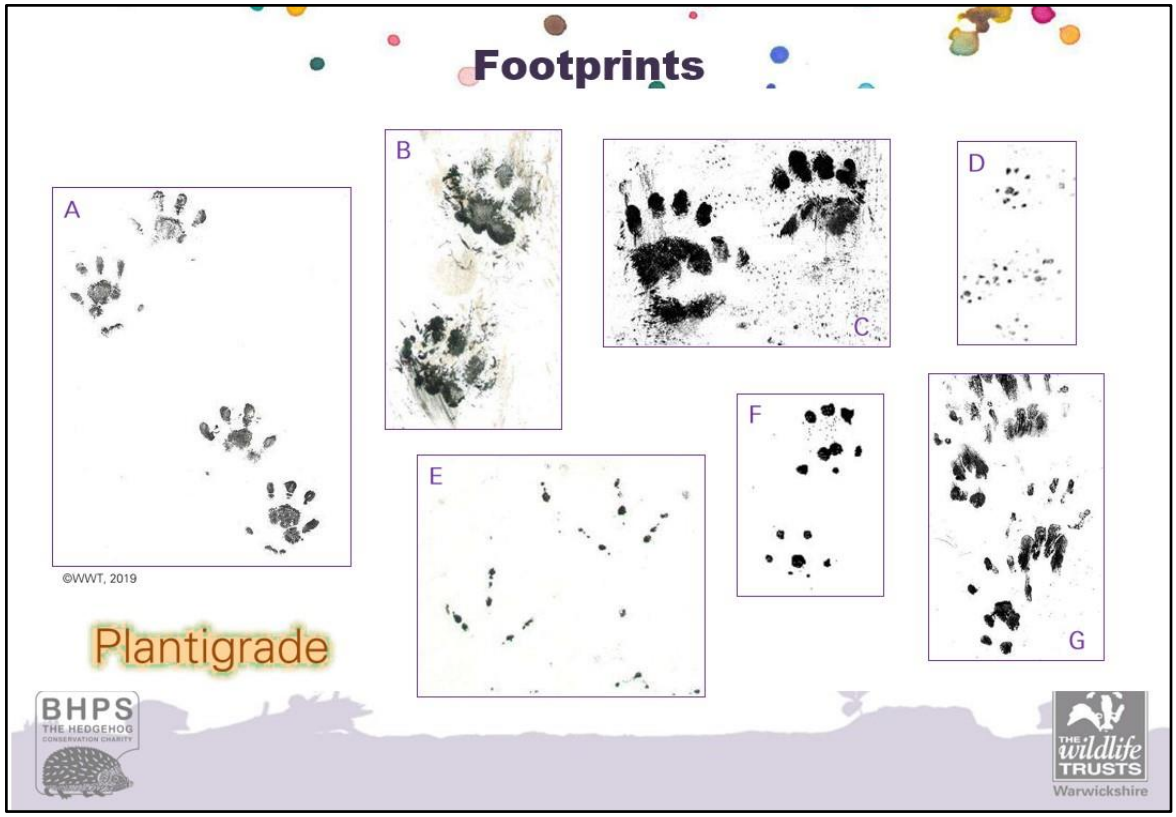
1. Torchlight survey



2. Footprint Survey

Demonstrate how we use footprint tunnels to find out if hedgehogs are in the area.

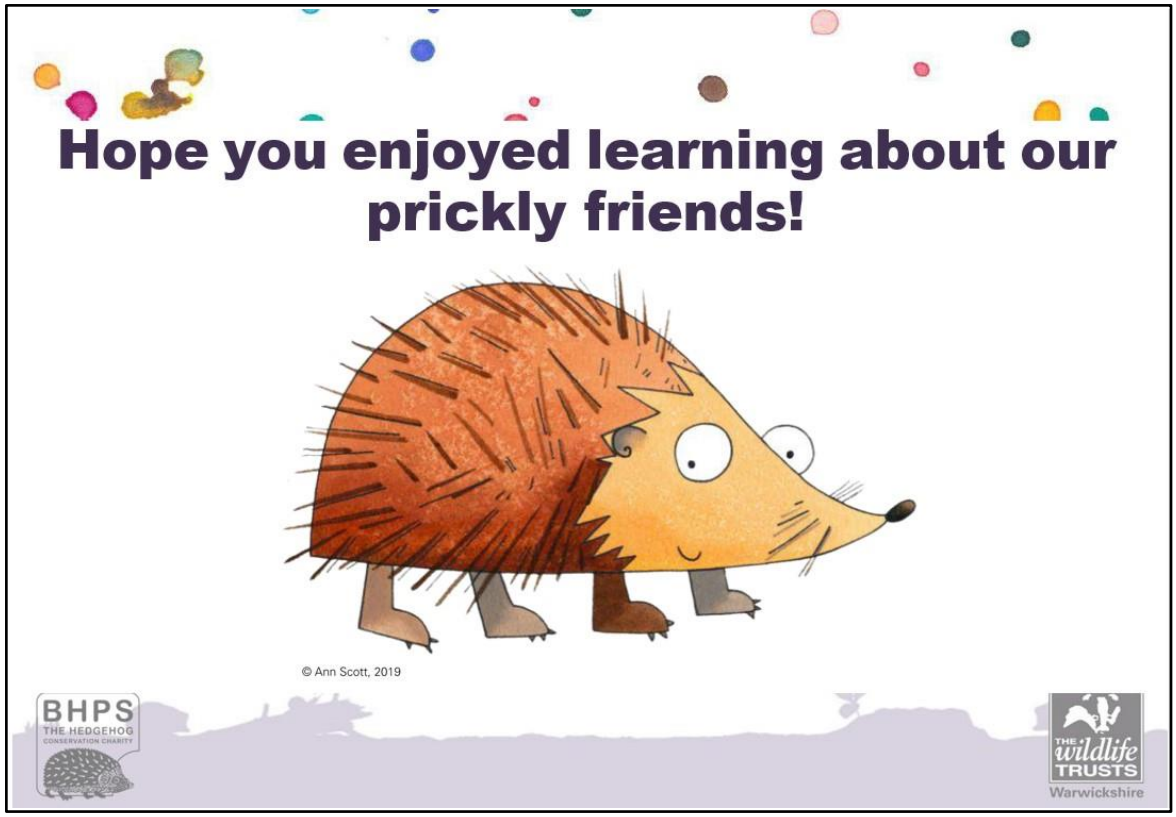
They smell the food we put inside and tread on the black charcoal and vegetable oil so that they leave their footprints behind when they go.



Ask the children to guess the footprints.

A. Hedgehog
B. Cat
C. Badger
D. Small rodent
E. Bird
F. Rat
G. Squirrel

Hedgehogs have a **plantigrade** stance, meaning that they walk by placing their entire foot on the ground – this makes a solid print which is easy for us to identify.



INDOOR ACTIVITY
Activity Sheet – Match the Footprints

Activity:

Games

Danger: Adaptations & Habitat

Game 1

Learning objective – Hedgehog's ability to roll into a ball and escape danger

All the children wander around making hedge-hoggy snuffling noises. You then shout "DANGER!" The children have to roll into a ball as quickly as they can.

Game 2

Learning objective – How habitat relates to having a safe place to shelter

Half of the children wander around making hedge-hoggy snuffling noises. Half of the children stand in a line, holding hands, they are a hedge.

You then shout "DANGER!" The children have to run behind the hedge to safety and roll in a ball. The last person to hide (or first to get caught in subsequent rounds) becomes a predator and has to try to catch one of the hedgehogs on the next round.

Each round shorten the hedge, making less and less space for children to hide behind, and more predators.

Nocturnal: Noises & Noses

Learning objective – Nocturnal animals rely on senses other than eyesight

Game 3

Noses

All of the children get given a cup, with either nothing, or something smelly in (herbs & plants). Choose a smelly cup from the circle, and let the blindfolded hedgehog sniff it. You then guide the hedgehog around the circle trying to locate the right smelly thing which they smelled.

Highlight how often nocturnal animals have a very well developed sense of smell and how this can be an adaptation to low light conditions.

Game 4

All of the children stand in a circle. One child is chosen to sit in the middle and wear a hedgehog blindfold (or you can make a hedgehog mask).

Noises

You jangle a bunch of keys or something else noisy in front of the hedgehog and put them on the floor in front of them. You then walk around the outside of the circle and tap one child on the shoulder, selecting them to go and pick up the keys and quietly take them back to their place in the circle. All children place their hands behind their backs, the blindfold is removed and the hedgehog has to point to who they think took the keys. The hedgehog will have needed to listen carefully using their hearing sense.

Vary difficulty by asking children to do different things: e.g. key taker shakes the keys; key taker walks around the outside of the circle before returning to their place first; the circle of children all make snuffling noises to disguise the sound of the keys; the children all drum on the ground to sound like footprints etc.

Highlight that hedgehogs listen for noisy prey like beetles, and listen for the noise of danger. Highlight the impacts noise pollution can have on animals relying on sounds.

Hibernation & Houses

Learning objective – Hedgehogs hibernate to save energy and need a safe place to shelter.

Game 5

Ask the children to walk around in a circle. When you shout "go to sleep", they must all curl up in a ball. Cover a child with a blanket, then shout "who's hibernating?" The children must guess who's hidden under the blanket.

Game 6

Tell the children that lots of animals have gone into hibernation at the moment and that they need really nice cosy houses to sleep in. Ask the children what they think the animals would need from their house and what they could make it out of. In pairs or threes instruct them to go off and build a house – you could provide them with a toy hedgehog. Walk round and look and offer advice and ask them questions about them.

Activity Sheet:

Food Scramble

Unscramble these words to find out what hedgehogs like to eat

© Dr Malcolm Storey 2019

latercarslip: _ _ _ _ _ _ _ _ _ _ _ _

marshtower: _ _ _ _ _ _ _ _ _ _ _

steeleb: _ _ _ _ _ _ _

rigewas: _ _ _ _ _ _ _

evsliwe: _ _ _ _ _ _ _

lipeedimls: _ _ _ _ _ _ _ _ _ _ _

alvera: _ _ _ _ _ _

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Illustration © Ceri Thomas 2019

Answers
1.Caterpillars 2.Earthworms 3.beetles
4.Earwigs 5.Weevils
6.Millipedes 7.Larvae

Activity Sheet:

Spot the Nesting Plants

How many of these plants that hedgehogs use to make their nests can you find?

LIME

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HOLLY

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BRAMBLE

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OAK

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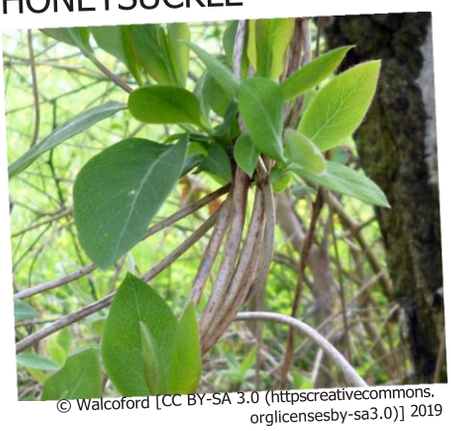
HONEYSUCKLE



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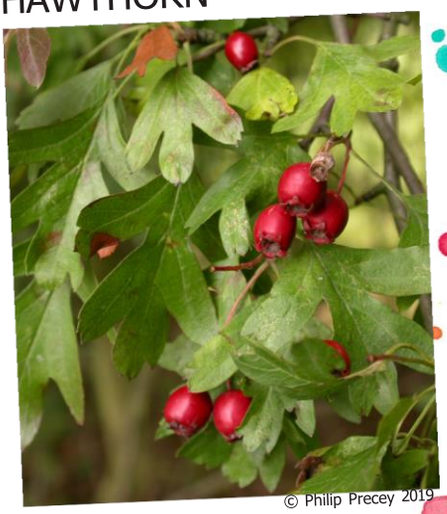
HAWTHORN



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BLACKTHORN

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CHERRY

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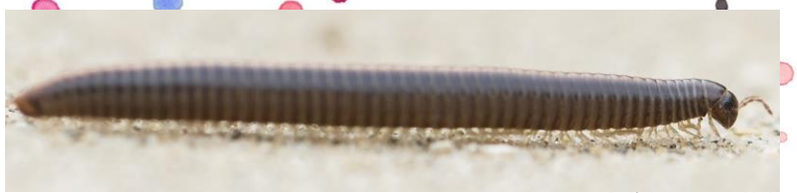
Activity Sheet:

Spot the Insects

How many of these tasty hedgehog treats can you find?

MILLIPEDE



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CATERPILLAR

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EARWIG

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GROUND BEETLE

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EARTHWORM

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SCARAB BEETLE

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CRANE FLY LARVA

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WEEVIL

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Activity Sheet:
Quiz

1. There are 17 species of hedgehog in the world, which one is native to this country?
    a. Long-eared Hedgehog
    b. Four-toed Hedgehog
    c. West European Hedgehog
    d. Desert Hedgehog

What's your score?

2. Name two adaptations Hedgehogs have to protect them in the wild:

3. Circle the correct words that are underlined:
    Hedgehogs hibernate during the winter months – November to March / May to October, which means that their breathing and heartbeat speed up / slow down and they are inactive.

4. Name three places a hedgehog might choose to hibernate:

5. What are baby hedgehogs called?
    a. Puppies
    b. Hoglets
    c. Hatchlings
    d. Kittens

6. Hedgehogs are nocturnal – what does this mean?

7. Name two problems hedgehogs face:

8. Draw a picture of a Hedgehog Highway:

Illustration © Ceri Thomas 2019

9. Why are these important?

10. Tick the actions below that will help hedgehogs:
    a. Make a log pile in your garden
    b. Use slug pellets
    c. Create a hedgehog highway
    d. Have a wild corner in your garden
    e. Leave out netting and rubbish
    f. Cover holes and ditches
    g. Leave out a bowl of water

Answers
1.c 2.Spines/Curling into a ball/Great sense of smell/Nocturnal/Hibernate 3.November to March and slow down 4.Under a hedge/shed/decking/In a compost heap/In a wild corner with long grass/leaves/In a hedgehog house 5.b 6.They are active at night and sleep in the day 7.Roads/Chemicals/Injuries/Bonfires/Predators/Competition/Habitat loss/Habitat fragmentation 9.Connect habitat so hedgehogs can travel through 10.a,c,d,f,g

Teacher Resource Sheet:

Survey Objects

Print the objects with their matching names, cut each one out and laminate

Thermal camera

Hedgehog Poo

Torch

Nighttime camera

Footprint tunnel

Activity Sheet:

Match the Footprints

Draw a line from the footprint to the animal you think made it

1

2

3

BIRD

HEDGEHOG

RAT

FOX

SQUIRREL

TOAD

BADGER

CAT

8

4

5

7

6

Illustration © Ceri Thomas 2019

Answers
1.Badger 2.Toad 3.Hedgehog 4.Rat
5.Bird 6.Cat 7.Squirrel 8.Fox

Activity: Footprint Survey

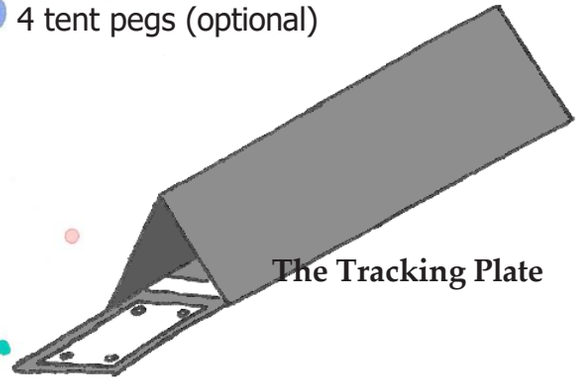
Discovering whether hedgehogs are using your school grounds is easy, fun and a fantastic way to engage the whole class in hedgehog conservation, whilst being outdoors.

Illustration © Ceri Thomas 201

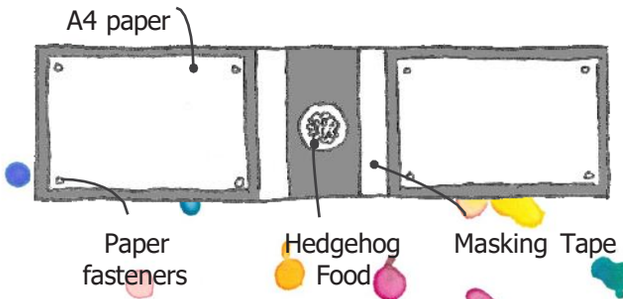
Your footprint survey can take place at any time *between May and September* and should last for *five consecutive nights*. The aim is to draw hedgehogs into a tunnel using hedgehog food as bait. Once inside the tunnel their paws will get covered in an ink mixture and as they exit paw prints will be left behind on white A4 paper inside the tunnel.

What you will need:

1 footprint tunnel
Fine charcoal & vegetable oil
Hedgehog food or meaty cat/dog food
10 sheets of A4 white paper
8 brass paper fasteners/paper clips
1 small, shallow dish for food
1 small square sponge
1 jam jar
4 tent pegs (optional)



The Tracking Plate



1. Prepare your tunnel

Inside your jam jar mix up a 1:1 solution of charcoal powder and vegetable oil. Take the tracking plate out of the tunnel and use the sponge to apply a 2mm thick layer of the charcoal mix to the masking tape strips. Write the date on two pieces of paper and use paper fasteners to attach one sheet to each end of the tracking plate, piercing the plastic if necessary. Add hedgehog food to the bowl and place in the centre of the tracking plate. Carefully put the tracking plate back into the tunnel.

2. Position your tunnel

Your tunnel should be placed lengthways along an edge e.g. hedge. The entrance and exit should be lying flat against the ground to allow the easiest possible access. If you want to anchor your tunnel to the ground, use tent pegs to do so.

3. Survey

Leave the tunnel overnight and return to check it in the morning. Take out the tracking plate, remove the paper and replace it with fresh sheets. Replenish the supply of food.

Hedgehog in tunnel, 2016

If you have recorded footprints use an ID guide to identify the animals which have left their mark. Repeat your survey for 4 more nights and use a table to keep track of your results.

Important Health and Safety

Always wash hands after touching the tunnel. Many small mammals will be in and out of your tunnel. They may leave urine and faeces behind which can be harmful to humans. Rodents can carry Weil's disease so please wash hands thoroughly before eating or drinking.

Getting a Tunnel

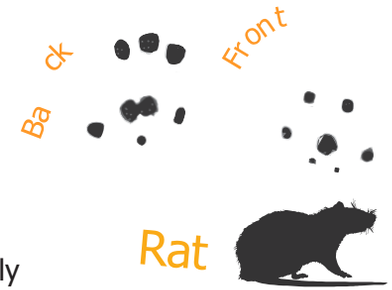
Tunnels can be made from scored correx plastic held together with velcro, masking tape strips for the paint to go on and a petri dish to hold the food. Alternatively they can be purchased from https://www.wildcare.co.uk/tracking-tunnel. You can also make a footprint trap using sand: https://www.wildlifewatch.org.uk/activity-sheets

Activity:

Identify Footprints

The footprints shown on this guide are life size so you can compare them directly with the prints that you've collected to help you figure out which animals have visited your tunnel.
Look closely at the number and position of the toes and the shapes that each print is made of to help you. Good luck!

Hedgehog footprints are really easy to identify. Most simply recognised by their hand-like shape, hedgehog prints often have a very clear 'thumb'; a single toe print which sticks out at a 45° angle to the rest. Adult hedgehogs leave prints about the size of a 50p.



Rat prints are a similar shape to smaller rodents, but they can be as large as hedgehog prints. Remember to look out for the distinctive front footprint made up of seven very round dots.

Cats leave very distinctive prints, four forward facing toes, with very little space between the toes and main footprint. At the heel of a cat print there is a clear downward curve. Dogs and foxes have an upward curve, this is a really useful way to help to tell them apart.

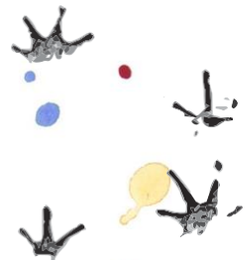
Cats often leave behind other marks on the paper, the swipe of a long tail or furry paws dipped in ink leave dappled or sweeping prints like the tail print to the

Small rodents, like wood mice are regular visitors to footprint tunnels. Look out for lots of very small footprints made up of tiny round dots. Front paws are quite clearly made of seven dots in a group.

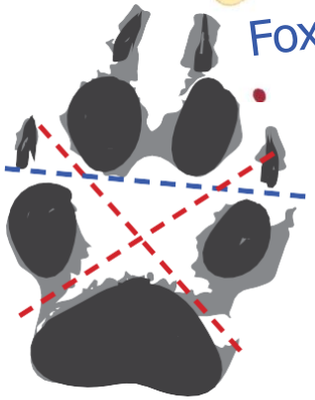
Badgers have a very large print with five forward facing toes. The central pad is very broad, usually as wide as all five of the toes. You often also see marks made by the badger's claws.

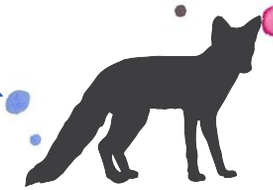
Birds leave groups of prints with three toes facing forward and a single print in the centre at the back. They can be a variety of sizes, from small robin prints to larger blackbird.

Newts leave small, pointy, webbed prints with up to five toes visible in a 180° arc. You can sometimes see round marks left by the tips of the toes.



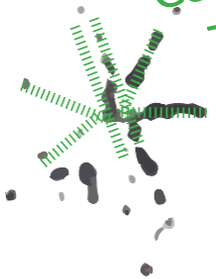
Fox





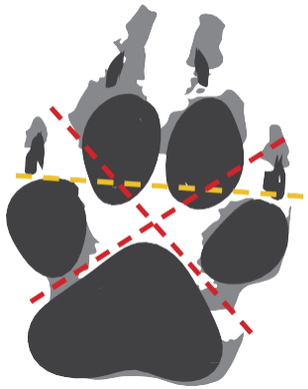
Foxes have an excellent sense of smell and so are fairly regular visitors to footprint tunnels. Their prints have four forward facing toes, often with claw marks above them. There is quite a large space between the fox's pad and the toes. If you have a fox print, you should be able to draw a straight line between the four toe prints, without any of the toes crossing the line; shown by the blue dashed line on the illustration.

Common Toad



Toads leave peculiar prints, often described as 'spidery', their prints are a complex series of blotches arranged in roughly star shaped groups. You can imagine the toad sitting with feet together and toes spreading out in either direction as indicated by the green lines opposite.

Hedgehog



Dog prints are similar to fox with four forward facing toes and often claw marks. There are some clear ways to tell the difference between the two: If you draw a straight line between the four toes of a dog footprint, the line will be crossed by the front two toes; as illustrated by the yellow dashed line opposite.

Dog

Another useful trick to separate fox and dog prints is to draw a cross in the space between the prints, shown with the red dashed lines above. In a fox print you can draw a cross without touching any of the print, however in the dog

Squirrel

Front

Back

Squirrel prints have a similar shape to other rodents, with a symmetrical set of four or five round toe prints visible above a long foot pad. Squirrel prints are noticeably larger and longer than rat prints, owing to their large, tree climbing feet.

ID Tips

Looking at the size of prints compared to others can be a really useful way to help you to identify them. But remember that you might see prints from very big cats, very small dogs or perhaps very young animals like hoglets. Always look at the shape of the footprint as well as its size to help you figure

Found hedgehog prints?

Log your 'hog on a national map through Hedgehog Street: https://bighedgehogmap.org/.

Ten Point Plan

Tick all 10 to create hedgehog heaven

THE wildlife TRUSTS Warwickshire

BHPS THE HEDGEHOG CONSERVATION CHARITY

Hedgehog numbers are in rapid decline and we need to take action to help them.

HOW?

Hedgehog numbers are down by up to 75% in Britain since the Millennium.

Making a 13cm square hole in your fence, the same size as this white box, will let even the largest hedgehogs into your garden.

Once you've made your hedgehog highway, why not talk to your neighbours and ask them to do them same?

01 ☐ Tick Box

Link your garden

02 ☐ Tick Box

Keep a wild area

Hedgehogs need dry, sheltered places to nest.

03 ☐ Tick Box

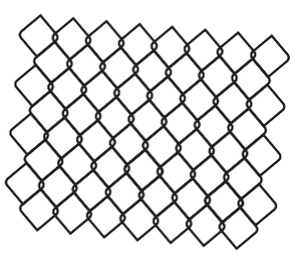
Do not disturb

Avoid disturbing nesting or hibernating hedgehogs.

04 ☐ Tick Box

Check before mowing

Mowers and strimmers can cause serious harm to nesting hedgehogs.



08 ☐ Tick Box

Tie up garden netting

Hedgehogs can get caught in loose netting so keep it 30cm off the ground.

05 ☐ Tick Box

Make a log pile

Rotting wood attracts lots of insects for hedgehogs to eat & provides shelter.

09 ☐ Tick Box

Don't drop litter

Hedgehogs can get caught up in our rubbish and be seriously injured.

06 ☐ Tick Box

Don't use pesticides

Pesticides reduce the food available for hedgehogs and may harm hedgehogs if they consume them.

10 ☐ Tick Box

Log a 'hog

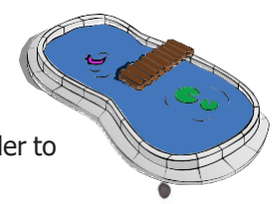
Map your hedgehog sightings with Hedgehog Street: https://bighedgehogmap.org/.

HEDGEHOG STREET

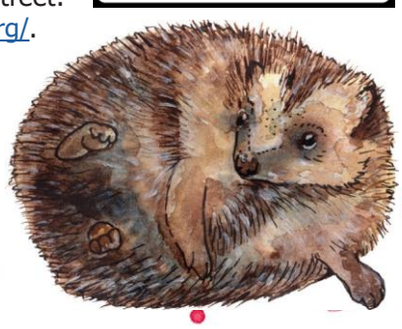
CITY OF WILDLIFE

07 ☐ Tick Box

Make ponds safe



Hedgehogs can get stuck in ponds. Build a ramp or ladder to help them get out.



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