MAYOR OF LONDON

LONDON CURRICULUM

KEY STAGE 2

WILD ABOUT LONDON

THE LONDON CURRICULUM

PLACING LONDON AT THE HEART OF LEARNING

The capital is the home of innovations, events, institutions and great works that have extended the scope of every subject on the school curriculum. London is the perfect classroom. It lends itself to learning unlike anywhere else in the world. The London Curriculum aims to bring the national curriculum to life - inspired by the city, its people, places and heritage.

To find out about the full range of free resources and events available to London schools please go to:

www.london.gov.uk/curriculum

I have someone I'd like you to meet...
This is Fen the Fox from Fenchurch Street.
He likes to creep about the city,
To inspect and explore green spaces so pretty.
Join him on his journeys to discover
The secret world of London uncovered.
Look out for him along your way,
He might have something interesting to say!

HOW TO USE THIS PACK

This learning pack is flexible, so you have control over what you teach and when. The resources all sit within the 'Wild about London' theme and promote cross curricular teaching. It has activity plans to address learning objectives in the following National Curriculum subject areas:

- **Science; Art & Design**
  Topic: Plant protectors!
- **Geography; PE; PSHE & Citizenship**
  Topic: Waterways and wellbeing
- **Maths; PE**
  Topic: Finding out with field study
- **Science; PSHE and Citizenship; Design Technology; English**
  Topic: Love your local habitats
- **Geography; Art & Design**
  Topic: Planning the perfect park

A rough timescale is given for each activity plan. It also highlights KS2 learning objectives linked to activities. The activity plans on specific topics often follow on from each other, and the work modules are closely linked. You should aim to teach these in succession.

The topic-based activity plans are structured similarly to the lesson plans in our Key Stage 3 resources.

Learning is split into three phases:

- **Discover**
  Presenting and analysing background information relating to the given topic

- **Explore**
  Contextualise learning from the Discover activities by exploring ideas in action by visiting London's green spaces and other related institutions

- **Connect**
  Task-based activities connecting the background information in Discover activities with the real-life understandings from the Explore visit

WILD ABOUT LONDON

London is already one of the greenest cities in the world. In 2019, it became the first ever **National Park City** to help all Londoners make our city greener, healthier and wilder. This means:

- a city that is greener in the long-term, where people and nature are better connected
- a city which protects parks and green spaces and where public spaces aren't defined only by concrete, glass and steel
- a city where all can enjoy high-quality green spaces, clean air, clean waterways and where more people choose to walk and cycle
- a city that is rich with wildlife where every child benefits from exploring, playing and learning outdoors.

Learn more about these aims in the National Park City Charter: **http://npc-london-charter.netlify.com** Fen is on hand to help your class champion these goals:

- Learn about London's amazing trees and create a game to help others protect them
- Discover London's many winding waterways, their historical uses and how they improve our wellbeing
- Get hands on with field study techniques to understand the wild spaces around us and discover top tips to welcome wildlife into your neighborhood
- Find out what makes the perfect public park and design a thriving green space of your own.

LONDON NATIONAL PARK CITY SCHOOLS*

Why not join the **London National Park City Schools Network**: **www.nationalparkcity.london/schools-network**

CONTENTS

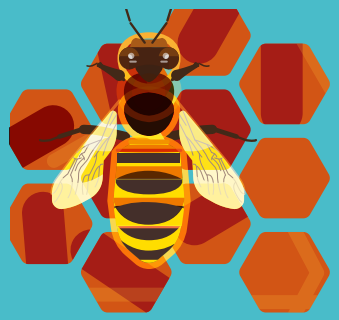
PLANT PROTECTORS!

Making it our mission to look after london's trees

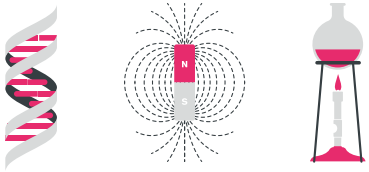
SCIENCE

COMPUTING

ART & DESIGN

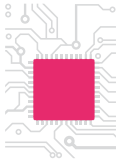


Learning objectives for pupils:



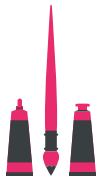
SCIENCE

- Using straightforward scientific evidence to answer questions or to support their findings.
- Explore the requirements of plants for life and growth and how they vary from plant to plant.
- Recognise that environments can change and that this can sometimes endanger living things.



COMPUTING

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.
- Solve problems by decomposing them into smaller parts.
- Use sequence selection, and repetition in programs.
- Work with variables and various forms of input and output.
- Choose, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing. This includes evaluating and presenting data and information.



ART & DESIGN

- Students should be taught to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design.

CONTENTS

DISCOVER: EXPLORING LONDON'S TREE POPULATION

Duration: 60–120 mins

Setting the scene

Share the opening question...

Encourage students to think of as many reasons as possible in whole class discussion. Ensure consideration is also given to non-scientific points of view. This could include:

- being nice to look at
- providing shade as well as photosynthesis to produce oxygen
- creating habitats for living organisms etc.

Record their ideas and highlight if any of these reasons are important for an urban environment (such as mitigating air pollution and cooling cities).

London's 'urban forest' comprises all the city's trees including those on our streets, in parks, in woodlands and in Londoners' gardens. The Greater London Authority has committed to maintain and expand London's urban forest and has carried out extensive research into its benefits. This is outlined in the i-Tree Eco Project to Value London's Forests. The Mayor's London Environment Strategy sets a target to increase the area of London covered by trees by 10 per cent of the current area by 2050.

Share Factsheet 1: Benefits of London Trees (p15). This information is taken from the study. Did the students cover all aspects listed here?

Why not...?

Look at further pages of the report to practice data handling skills with the many interesting statistics that were derived?
The full report can be found here:
www.london.gov.uk/sites/default/files/valuing_londons_urban_forest_i-tree_report_final.pdf

DISCOVER:
EXPLORING LONDON'S TREE POPULATION

Activity 1: Investigating London's trees

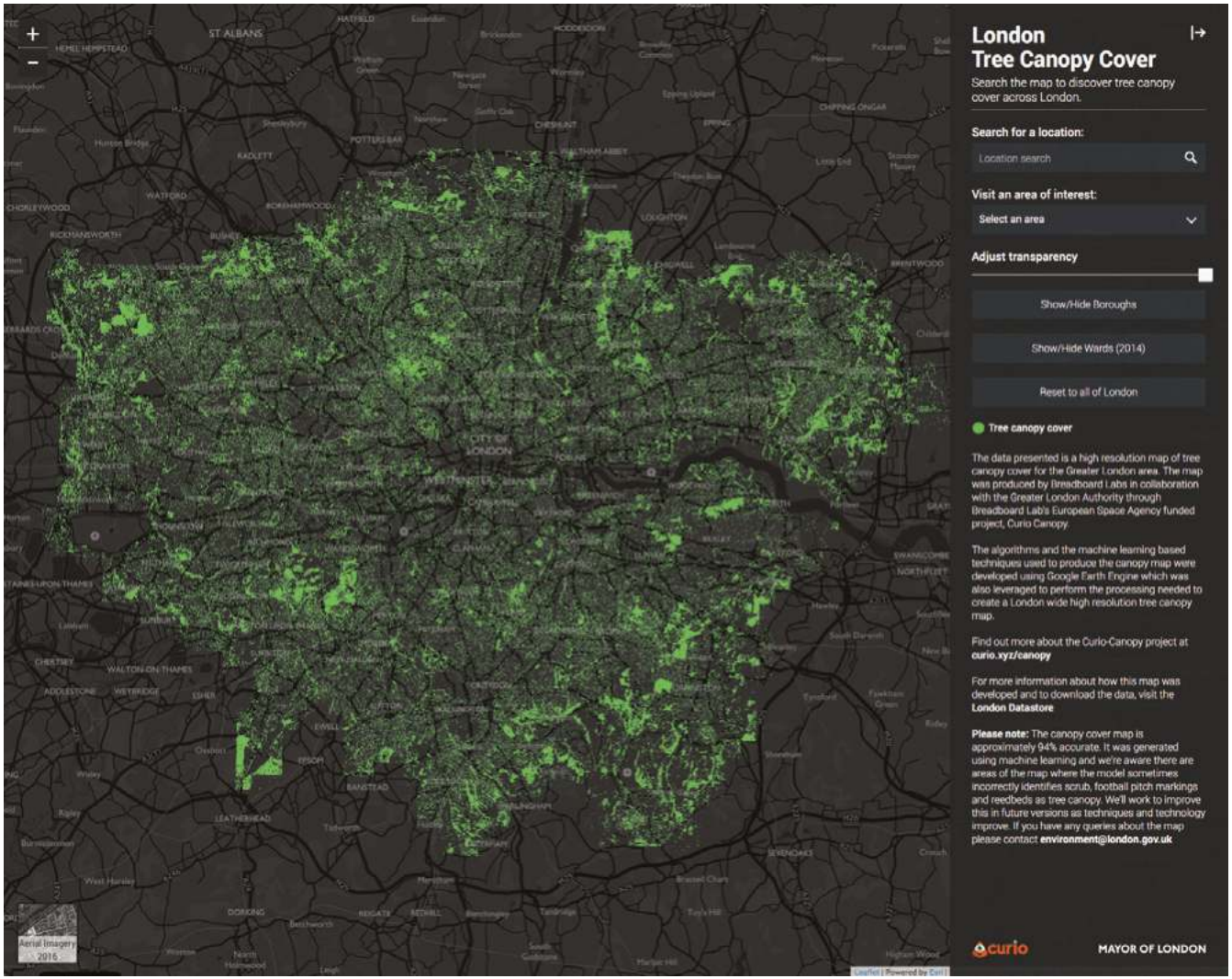
Part 1

Use your white board, or individual/paired IT resources if possible (laptops/iPads), to share the interactive map of London's tree canopy cover. This can give an indication of local tree cover:

https://maps.london.gov.uk/canopy-cover

Students can zoom in on their local area using the interactive tools on the right of the screen, for example by entering your school's postcode.

Can students locate local parks or green spaces where they know from their everyday life that there is a large tree presence?



DISCOVER:
EXPLORING LONDON'S TREE POPULATION

Activity 1: Investigating London's trees continued

Part 2

To take a closer look at the types of tree found in London, access the London Street Tree Map:
https://maps.london.gov.uk/trees/

Share Factsheet 2: London Tree Types (p18).

Encourage students to use the interactive map key to find the examples of the tree types listed on the factsheet – London plane, silver birch, English oak, lime and whitebeam.

Divide the class into five groups.

Encourage each group to research one of the following types of tree and produce an information poster or presentation to share back with the class.

Activity Sheet 1: Tree information task (p19) gives students challenge instructions and prompts facts to include.

DISCOVER:
EXPLORING LONDON'S TREE POPULATION

Activity 1: Investigating London's trees continued

Part 2

The Woodland Trust has more info on the trees at:

London plane
https://bit.ly/2RVXmh8

Silver birch
https://bit.ly/2uZmrPb

English oak
https://bit.ly/36QWjmQ

Lime
https://bit.ly/31lRbFU

Whitebeam
https://bit.ly/36TmxVJ

Why not...?

Take learning outside the classroom and try to identify the types of tree on your school site or nearby streets.

Activity Sheet 2: Tree detective record sheet (p20) can be used to help students make records of what they discover. You may want to suggest they map trees near their home with their family and choose their favourite.

EXPLORE

Royal Botanic Gardens Kew

Kew Gardens

Kew, Richmond, London, TW9 3AE

Digital Image © Board of Trustees, RBG Kew

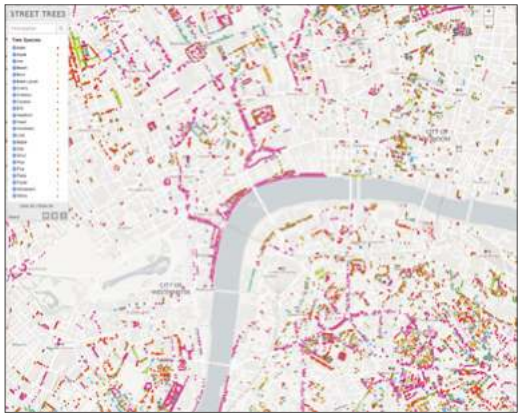
With its iconic glass Palm House, Kew Gardens is at the forefront of worldwide conservation work. It is home to a rich and diverse range of plant life and was officially designated a UNESCO World Heritage site in 2003. Come and see first-hand how scientists are on a mission to unlock the potential of plants and fungi through the power of research.

Kew has many opportunities on offer for primary schools. Self-guided visits are welcome and you can find out more about their KS2 education sessions here: **www.kew.org/kew-gardens/school-visits/browse-sessions/key-stage-2**

It also offers CPD sessions for teachers throughout the year and a free online learning platform – Endeavour (see Connect activities p12).

www.kew.org

London's street trees



You may want to investigate further the Greater London Authority's STREET TREE MAP (shared in Discover p9) which will guide you round the city to discover a wide selection of London's trees in situ. Around 700,000 of London's trees are represented here, but this is only a small proportion of the 8 million trees estimated to be found in the capital. Why not take a walk around the area adjacent to your school and try to mark out street trees on a local map of your own?

https://maps.london.gov.uk/trees/

www.treetalk.co.uk

CONNECT:
FUN & GAMES CHALLENGE

Duration: Flexible – *would work effectively as a "challenge day" or a number of sessions across a week/ half term.*

Endeavour

Taken from the **Endeavour** online learning platform, offered free to schools by Royal Botanic Gardens, Kew. This fantastic resource has several challenge-style resource packs, all complete with engaging stimuli which cover a range of curriculum areas. All promote scientific thinking, creativity and teamwork.

Some challenges are running as competitions where, by uploading your students' work, your school could win £1,000 to spend on science resources!

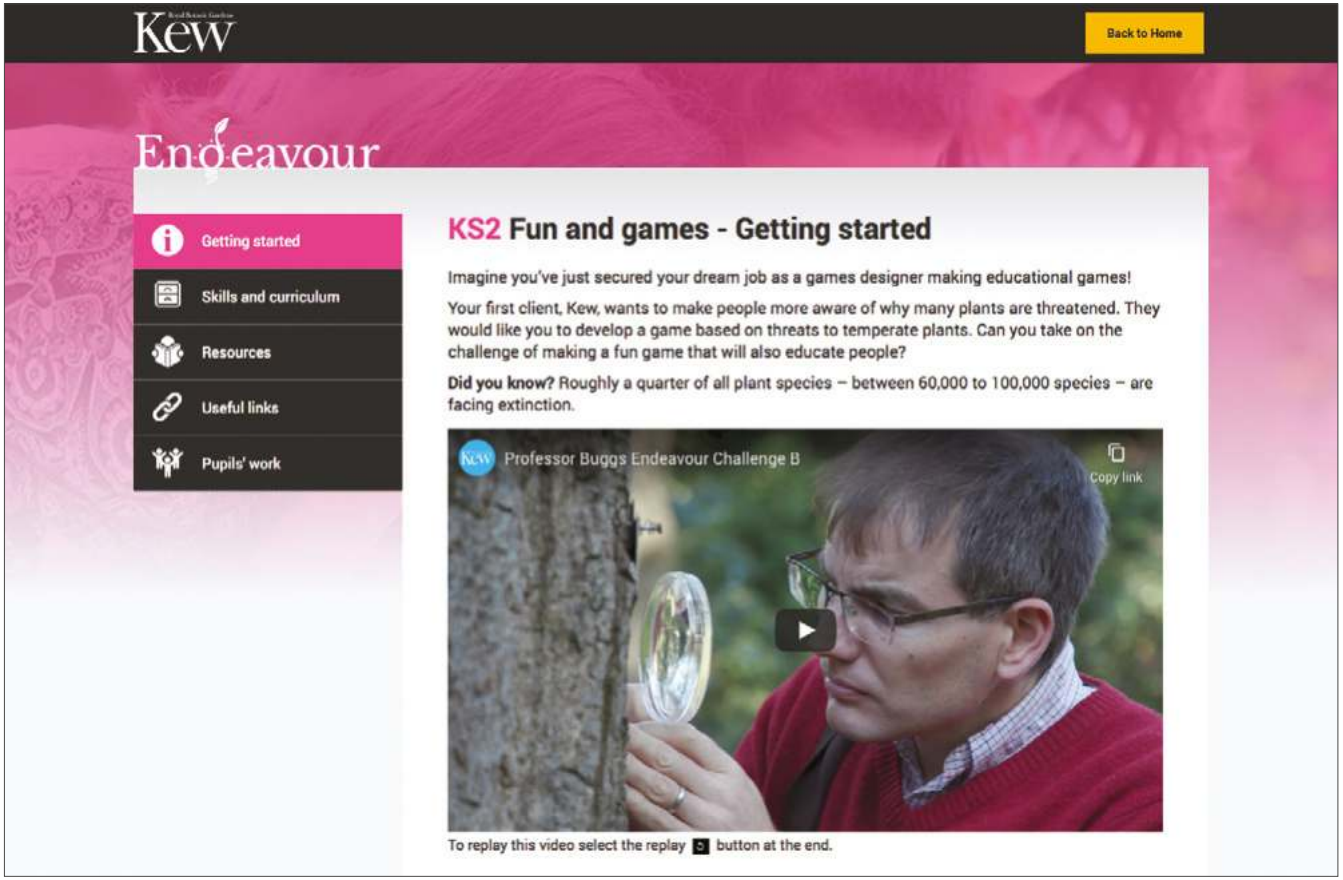
Signing up is quick and easy – visit **https://stories.kew.org/endeavour/** and follow the simple registration instructions.

Once you are logged in, select ***KS2 modules*** and find ***Fun & Games***.

Setting the scene

Explain to students that they will be taking part in a challenge set by Professor Buggs, a scientist from Kew Gardens.

You may wish to group the students accordingly (around four per group) before showing them the introductory video.



CONNECT:
FUN & GAMES CHALLENGE continued

Activity 1

Your challenge:
Produce either a table-top or digital game that increases awareness of the different threats to plants found in temperate ecosystems such as in the UK.

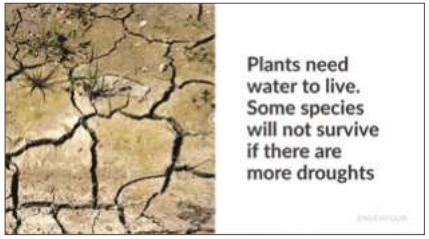
Learning through games is a fun way of gaining new information.

Your game needs to:

- be educational, but above it all it must be fun and interesting; people must want to play it!
- include at least three different types of threats to plants in temperate biomes.

Part 1: Research
Continuing to use ***Endeavour***, you will be prompted with lots of ideas, learning videos and printable resources. These will help students research current games on the market and understand their features and the skills required to be a games designer. They'll also learn about temperate regions and threats to trees within them.

(This can build on the knowledge acquired in Discover activities.)



CONNECT
FUN & GAMES CHALLENGE continued

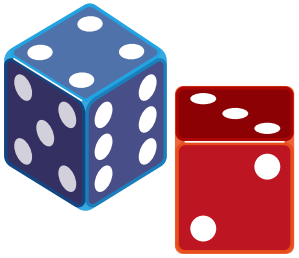
Activity 1 continued

Part 2: Design and create the game

Resources on ***Endeavour*** include helpful "How to...?" guides related to specific software suggestions.

Alternatively, you may decide to create a paper-based game, rather than computerised (in which case you will be mainly focused on Design & Technology and Art & Design objectives of the National Curriculum).

To build on previous learning in this module, we would suggest students use London as one of the temperate ecosystems they focus on. You could even adapt the game they create so it focuses wholly on threats to London tree species they've investigated in Discover.



Why not...?

- upload your students' work to the ***Endeavour*** learning platform
- prepare an assembly to tell the rest of the school about London's trees and share the games you have created. This will help others learn how to be Plant Protectors too!

FACT SHEET 1: BENEFITS OF LONDON'S TREES

Did you know that London is one of the greenest cities in the world?

London's urban forest contains an estimated 8 million trees and covers around 21% of the city's land area. This is set to increase as the Mayor has a target in the London Environment Strategy to increase tree cover by 10% of current levels by 2050.*

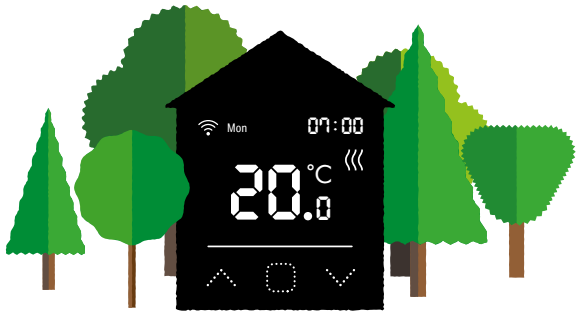
Why are trees important in the urban landscape?

Trees and woodlands make London a healthier, more attractive place to live, and help combat climate change and air pollution. They provide shade, aesthetics, habitats for wildlife and reduce the risk of flooding.

The 2015 i-Tree Eco Project to value London's Urban Forest listed the following benefits to our city:

ENERGY SAVING

Trees located alongside buildings can act as a secondary insulating layer, regulating temperatures around buildings. If well placed, trees can help keep buildings cool in the summer and warmer in the winter.



AESTHETIC

Trees bring a sense of place and maturity to new developments, whilst larger species help to create a more human scale to old and existing townscapes.

*Data source and further information London's trees & woodlands, please visit **www.london.gov.uk/what-we-do/environment/parks-green-spaces-and-biodiversity/trees-and-woodlands**

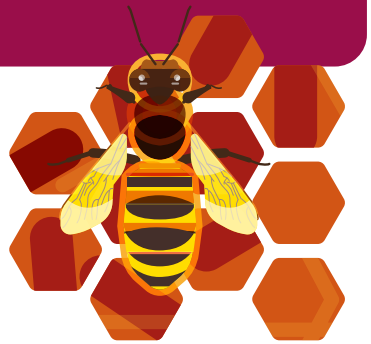
FACT SHEET 1:
BENEFITS OF LONDON'S TREES continued

PROPERTY VALUE

Tree-lined streets have been proven to increase house prices by as much as 15%. Most people choose to live in and/or around trees where possible.

URBAN FOREST FOOD

Trees provide fruit and nuts for wildlife and humans. They also provide an important source of nectar for bees and other insects.

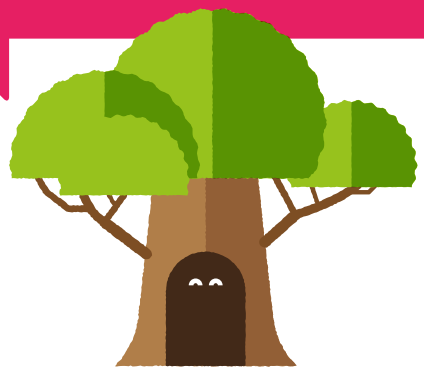


IMPROVING AIR QUALITY

Trees filter fine particles from the air reducing pollution and improving health.

PLAY

Some trees are great for play and making dens under.



STORM WATER ATTENUATION

Trees help to reduce localised flooding by intercepting rainfall and maintaining soil permeability.

BIODIVERSITY AND HABITAT

An increase in tree diversity will benefit a host of insects, birds and mammals in our towns and cities.

FACT SHEET 1:
BENEFITS OF LONDON'S TREES continued

SHADE AND COOLING

Trees cool the air by providing shade and through evapotranspiration from their leaves. Larger canopy species are particularly effective.

LANDSCAPE SCREENING

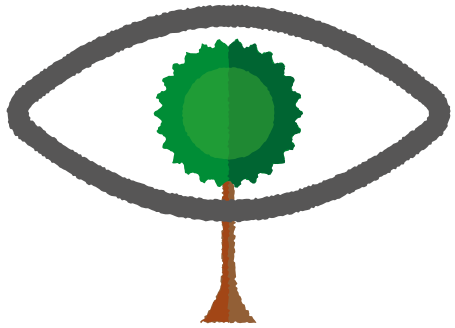
Not everything in cities is aesthetically pleasing and in some instances, trees and other vegetation can help hide undesirable views.

ASSISTS RECOVERY

Helps improve recovery times from illness, reduces stress plus improves mental health and well being.

FOCAL POINT

Trees provide a social focal point and place of meeting.



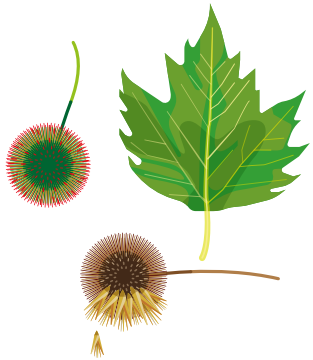
STORING CARBON

As trees grow they accumulate carbon in their woody tissues, reducing the amount of this greenhouse gas in the atmosphere.

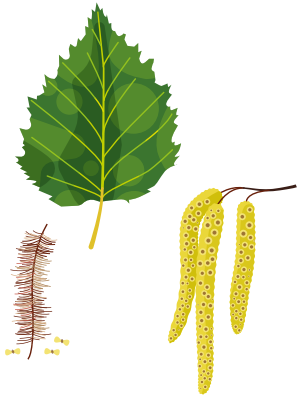
FACT SHEET 1:
BENEFITS OF LONDON'S TREES

Here are examples of trees commonly found around London's streets and green spaces:

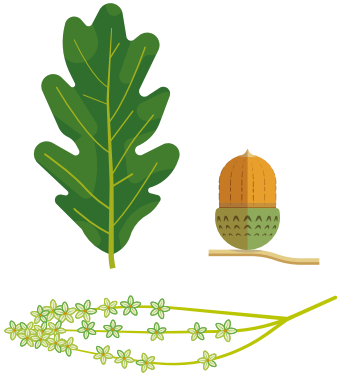
LONDON PLANE



SILVER BIRCH

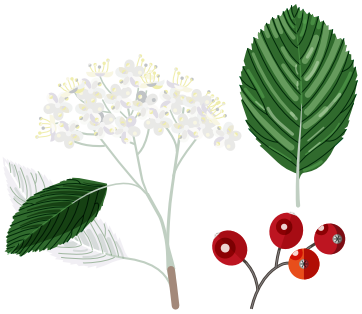


ENGLISH OAK



LIME

WHITEBEAM



ACTIVITY SHEET 1: TREE INFORMATION TASK

Produce a poster or presentation to share with the rest of the class about:

_____

_____

_____

The following information must be included:

- Both common and Latin names of the species
- How the species can be identified, for example a labelled diagram of the leaf shape, information and/or diagrams about its seeds/fruit and any other unique physical characteristics
- Whether the species is native to the UK or not
- Its uses to both humans and wildlife populations
- Common places it can be found
- Threats to its existence
- Any additional interesting facts

ACTIVITY SHEET 2:
TREE DETECTIVE RECORD SHEET

Use this sheet to record information about the trees you discover.

CLUES FOR IDENTIFICATION	INFORMATION ABOUT LOCATION	COMMENT ON POSSIBLE THREATS

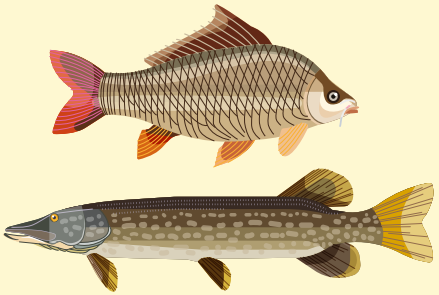
WATERWAYS AND WELLBEING

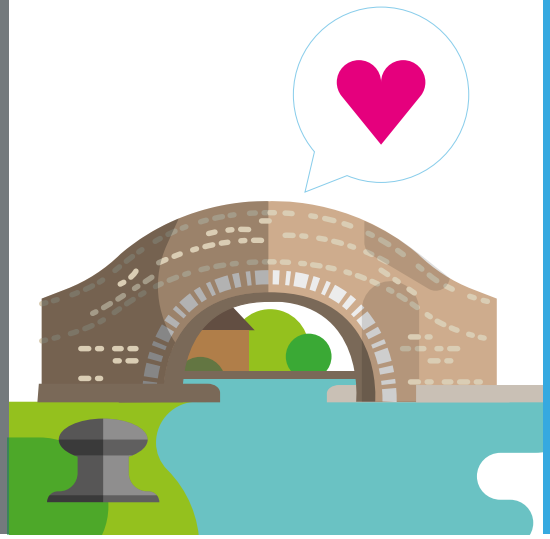
Making life better
by water

GEOGRAPHY

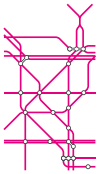
PSHE & CITIZENSHIP

ART & DESIGN





Learning objectives for pupils:



GEOGRAPHY

- Use maps and digital/computer mapping to locate and describe features studied (waterways).

PSHE & CITIZENSHIP

- Learn what makes a healthy lifestyle, including the benefits of exercise, what affects mental health, and how to make informed choices.
- Recognise the different risks in different situations and then decide how to behave responsibly.

PE

- Take part in outdoor and adventurous activity challenges both individually and within a team.

CONTENTS

DISCOVER:
LONDON'S WATERWAYS: PAST & PRESENT

Duration: 60–120 mins

Setting the scene

There are over 2,000 miles of navigable canals and rivers around the UK. Some are natural rivers that have forged their way over time from source to sea, but there's also an impressive network of canals built by people.

Share the opening question:

Encourage students to discuss this in groups, where they will most likely begin to separate their ideas into past and present. You may want to pause students to separate their ideas into these two categories.

Share Factsheet 1: Why do we need waterways? (p34) with the students and ensure understanding by talking through each aspect. Did students cover every aspect in their initial discussions or were some uses missed out? For example, irrigation or farming, as they are less relevant to our experience as Londoners. This is a good moment to highlight to students their vital role in keeping the nation happier and healthier. Waterways are a brilliant location to take part in active pursuits like cycling, running, fishing and sailing pursuits like canoeing and kayaking.

DISCOVER
LONDON'S WATERWAYS: PAST & PRESENT continued

Activity 1

Part 1

Share Factsheet 2: Mapping London's Waterways (p35) with the students.

Lead whole class discussion through the following questions:

- How do London's waterways connect the capital to the rest of the UK?
- Why might this have been vital in the past?

Can we locate our school in relation to anywhere on these maps? Use Canal & River Trust's ***Local to you*** feature to find your nearest waterways – found on their homepage:

https://canalrivertrust.org.uk/

Part 2

Look at the places featured in Factsheet 3: London's Waterways Today (p36).

Discuss which types of people they would appeal to and recap why they might like to visit. The Canal & River Trust is a charity looking after the canals and rivers so everyone can use them as places to walk, run, bike, paddle, boat and rest. Research shows the more time you spend by water, the happier and healthier you can feel!

Split the class into pairs or small groups. Invite them to choose one of the locations and create an advert to encourage people to visit. You could do this as a poster, leaflet or as a small role play/ improvisation like a TV ad. Make sure the students emphasise as many reasons as possible, including the selling point of its location near the water.

Share the presentations back with the whole class. Get the students to vote for which place they'd most like to visit based on what they've seen or heard.

DISCOVER
LONDON'S WATERWAYS: PAST & PRESENT continued

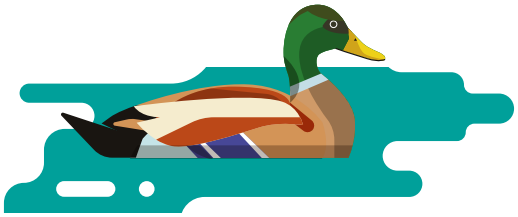
Activity 2:
How do we keep safe around water?

Duration: 60 mins

Experts from the Canal & River Trust have created a wealth of water safety resources suitable for primary school students. Before completing the rest of this module, we strongly suggest you devote a lesson to promoting the importance of safe behaviours around water. This should also teach students the specific skills needed to spot dangers.

Find free downloadable resources here, including planning guidance and risk assessments for waterside trips and visits:

https://canalrivertrust.org.uk/explorers/resources?subjects=Water%20Safety



You can also book a free water safety assembly for your school here:

https://canalrivertrust.org.uk/explorers/school-and-group-visits

EXPLORE

Canal & River Trust

https://canalrivertrust.org.uk/explorers

As part of its Explorers education programme, the Canal & River Trust offers free visits to all their London sites. Their skilled volunteers can lead your group on an informative guided tour. We have provided example sites and activities on the next two pages. However, they may be able to provide bespoke activities and are always adding new locations.

Check **https://canalrivertrust.org.uk/explorers/educational-sites** for the latest information.

There are accompanying downloadable resources for teachers and students alike to support both your visit and wider learning back in school, including the important topic of water safety. Search their resource collection here: **https://canalrivertrust.org.uk/explorers/resources**

EXPLORE

Brentford Lock

Brentford TW8 8HP

Find out how a lock works and the importance of the gauging lock at Brentford. Compare how the area looked 100 years ago with how it looks today and find out how it is still changing. Should we preserve our heritage or make way for new developments? Look inside the Toll House and find out about the job of the toll keeper. Learn to identify the water birds and their habitats.

Hanwell Lock

Green Lane W7 2PJ

Find out about the importance of the canal as a transport route and look for local historic features such as mile posts, boundary markers and significant engineering feats. Find out how a lock works and, with luck, watch a boat go through the lock. Learn to identify the water birds and their habitats.

Enfield Lock

Enfield EN3 6JG

Compare the River Lee Navigation with the old River Lea. Examine the quality of the water and learn to identify the different water birds and their habitats. Find out how the lock works and walk through the old armaments factory.

EXPLORE

Limehouse Basin

Goodhart Place E14 8BT

Today Limehouse Basin is an attractive location full of boats and water birds. Find out why it was built and what it looked like 150 years ago. Compare the human-made Regent's Canal with the mighty River Thames. Be amazed at the rush of water as the river lock fills and, if you're lucky, watch the road bridge open to let a big boat into the basin.

Queen Elizabeth Olympic Park

Stratford E20 2ZQ

Explore the history of the River Lea which runs through the Olympic Park. Find out about its importance as a transport network. Visit Carpenters Road Lock and find out why it is unique. Discover the more traditional Old Ford Lock and see it in action.

NB: This could be combined as an EXPLORE visit for the Planning the Perfect Park module.

In-school workshops can also be arranged as part of an outreach programme.

Find out more: **https://canalrivertrust.org.uk/explorers/teachers/school-outreach**

CONNECT:
ORGANISING THE ULTIMATE WELLBEING ACTIVITY BY YOUR LOCAL WATERWAY

Activity 1:

Duration: Flexible – would work effectively as several sessions across a week/half term leading up to running an event.

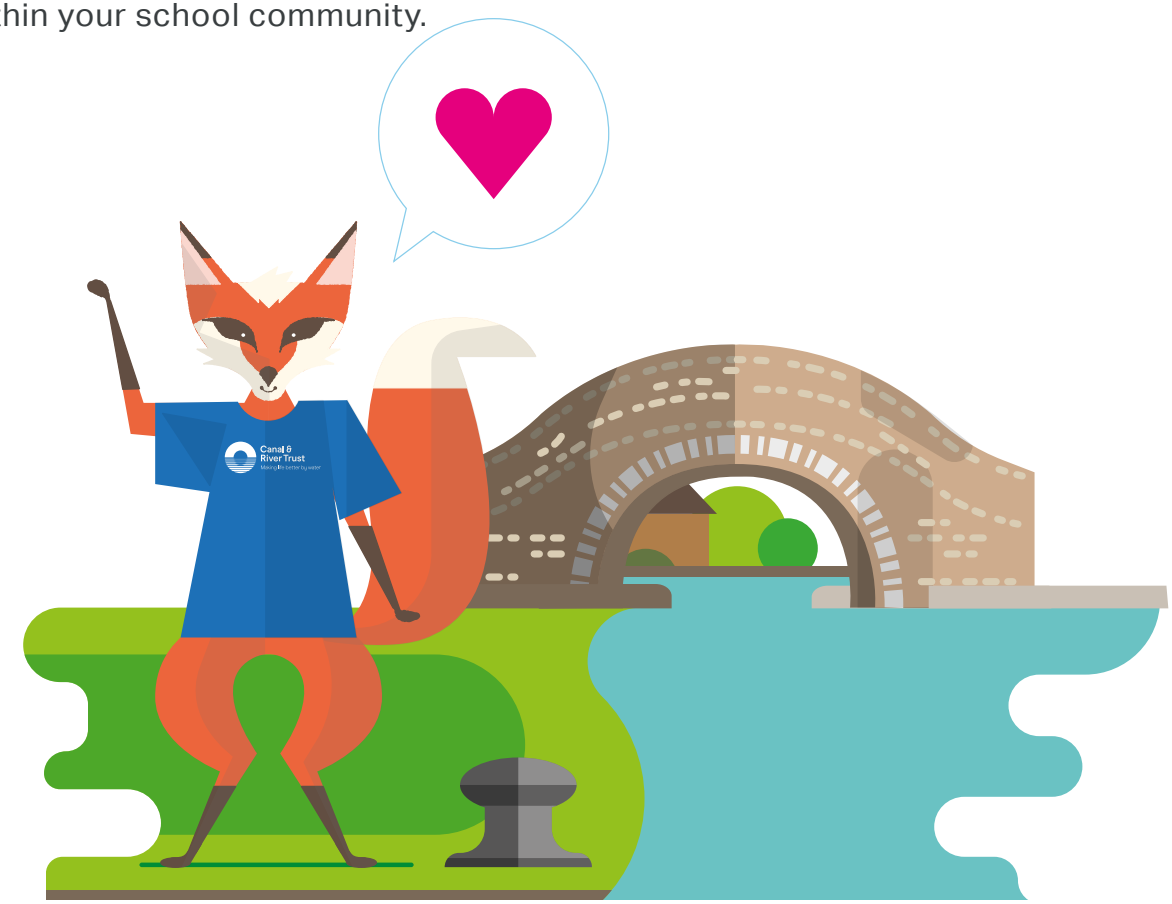
Many people recognise that being around water makes them feel happier and healthier. The tranquillity it provides, and the slower pace of life, provides a space to reflect and recharge. They also offer the ideal location for active pursuits like running, cycling and fishing, to name but a few.

Introduce ***Well-B***, the Canal & River Trust's wellbeing mascot, to the students using this short clip: **https://youtu.be/3iRFOwFo22I**

You may also want to read through ***Well-B***'s story here: **https://canalrivertrust.org.uk/recharge-by-water/meet-well-b**

Your challenge is to...

Plan an active wellbeing activity that can be run safely by your local waterway. This should aim to promote happiness and health within your school community.



CONNECT:
ORGANISING THE ULTIMATE WELLBEING ACTIVITY BY YOUR LOCAL WATERWAY
continued

Activity 1:
organising the ultimate wellbeing activity by your local waterway

Part 1: Initial ideas and planning

Starting as a whole class, begin to mind map ideas for energetic wellbeing activities that can be safely undertaken by your local waterway. Explain that the demographic, that is the people chosen to take part, should be members of your class. As a starting point, think about what you would like to do. Are there opportunities to take part in water activities locally (for example canoeing, boat trips etc?) If so, you may want to tell students about it so they can consider them as options.

Walks, scavenger hunts, orienteering and 5k runs are fantastic, inclusive options. Could you combine them with a nature spotting challenge or a litter picking competition to make them even more exciting? Apps like iNaturalist can help identify wildlife using your phone camera!

Discuss possible locations for their activity and provide maps (or access to digital mapping tools online) for the students to work with:

https://canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-network

Explain to the students that they will now be split into groups to plan their activity. At the end of the planning stage, they will be asked to present their ideas. The class will then vote on which they would most like to do. If they can show staff that the activity is safe, organised and viable, the students should get the chance to do it for real. This should happen at the nearest available time to give them full ownership of their learning.

You may want to share Activity Sheet 1: Wellbeing Activity Planning Sheet (p38) to guide students through recording their ideas.

NB
If the school is unlikely to lead an activity themselves, children could design a family-based activity to do at home instead.

CONNECT:
ORGANISING THE ULTIMATE WELLBEING ACTIVITY BY YOUR LOCAL WATERWAY
continued

Part 2: Making sure it's safe

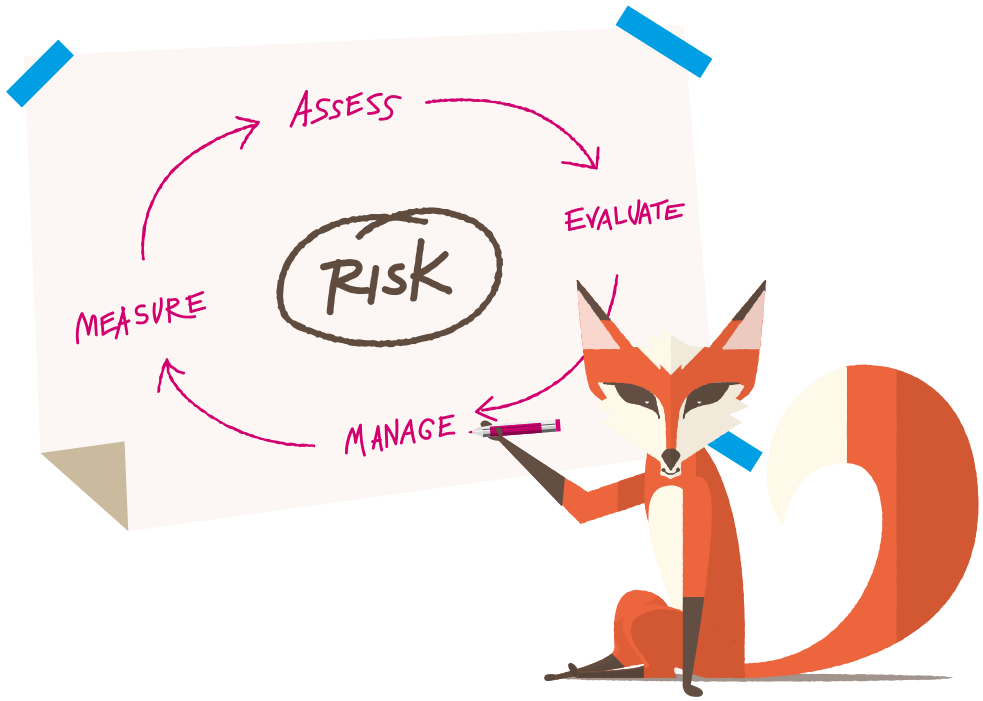
Recap what the students learned about Water Safety back in Discover (p26). What top tips can they generate for keeping safe near our waterways?

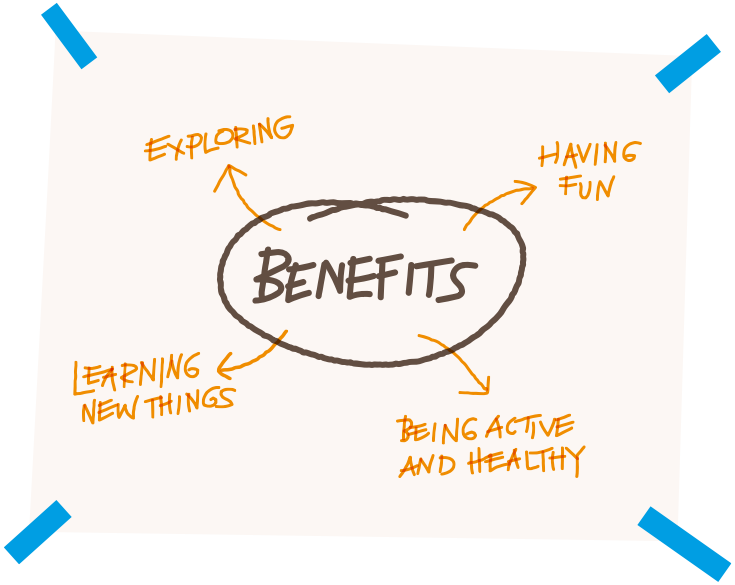
Talk to the students about what a risk assessment is, and why we complete them ahead of activities such as the ones we're planning.

You could show them examples of your school's risk assessment forms or share some produced by the Canal & River Trust (linked in Discover p24–26).

In their groups, the students should discuss three risks that might be associated with the activity and how to reduce them. You can also consider the benefits of doing the activity, and why it is worth the risks when they're managed.

These should then be shared with the class. Record recurrent themes and ideas for the students to refer back to when they then complete Activity Sheet 2: Wellbeing Activity Risk Assessment (p39).





CONNECT:
ORGANISING THE ULTIMATE WELLBEING ACTIVITY BY YOUR LOCAL WATERWAY
continued

Part 3 – Pitching to the group and picking the winning plan!

The groups must then prepare their pitch to the rest of the class. If time allows, you could encourage them to put together a digital presentation or even film a short video. Encourage them to emphasise that taking part will have a positive effect on wellbeing. Ensure they mention safety precautions they have considered to help everyone have a good time.

Once every group has given its presentation, the class should vote for the winner. Give the successful plan full consideration as a basis for a future class outing to ensure maximum learning impact.

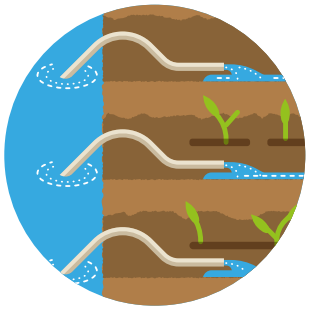
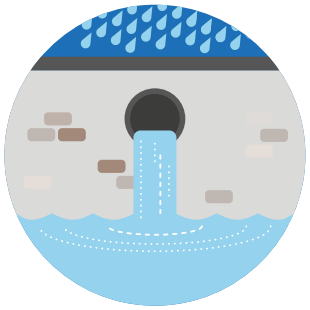
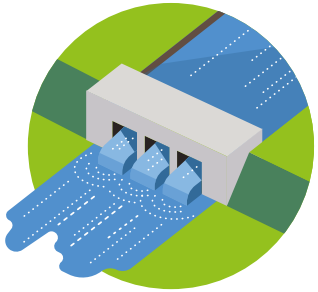
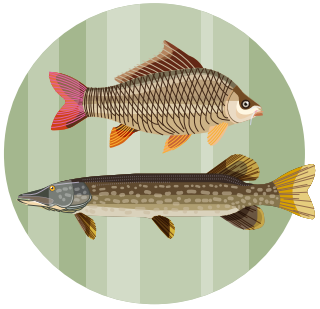
Why not...?

- encourage the students to adapt their plans for different demographics. For instance, how would you change the activity if it was for children in Foundation Stage or older people? How might your risk assessment have to change?
- set a challenge to plan a visit to a London waterway with the students' families or friends. Share experiences back with the class – where did you go? What did you do/see? How did it make you feel?
- could your school adopt a section of your local towpath to take care of?

Find out more:
https://canalrivertrust.org.uk/volunteer/volunteer-in-partnership/adoptions-more-information

You can share all your learning activities and experiences with the Canal & River Trust on Twitter **@CRTExplorers**

FACT SHEET 1:
WHY DO WE NEED WATERWAYS?

TRANSPORTATION OF PEOPLE AND GOODS 	**HABITAT FOR WILDLIFE** 	**CROP IRRIGATION** 	**DRAINAGE** 	**HOMES** 
HYDROELECTRIC POWER 	**TOURISM** 	**WATER SUPPLY** 	**WELLBEING AND EXCISE** 	**FISHING** 

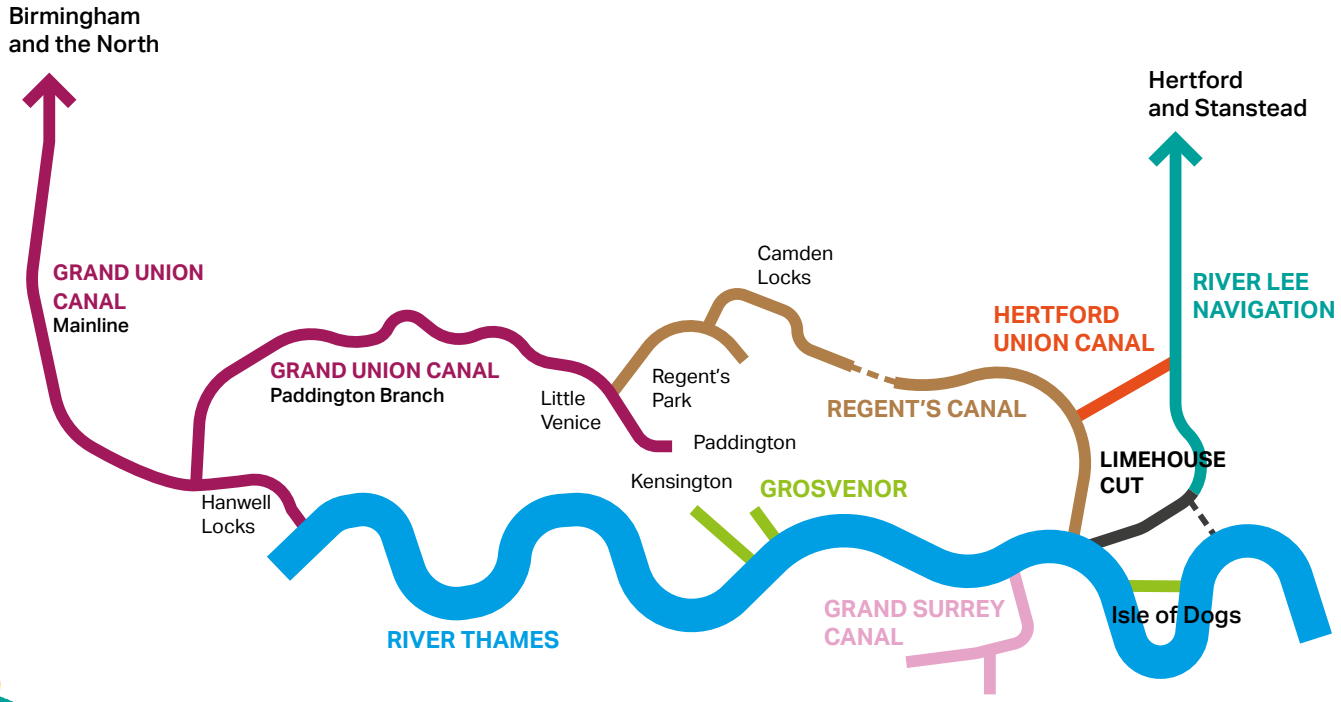
FACT SHEET 2:
MAPPING LONDON'S WATERWAYS

The Thames carves its way through the centre of London, but not many people are aware of the vast network of canals too.

London is joined to Birmingham via the Grand Union Canal, the UK's longest at 137 miles. It would take you 74 hours non-stop to cruise its length!

More information:

https://canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-network



FACT SHEET 3:
LONDON'S WATERWAYS TODAY

Granary Square, N1C 4BH

- On the banks of Regent's Canal
- Urban fountains
- Shops & restaurants
- Near King's Cross Station
- Waterside amphitheatre for performances and art installations
- Seating for meeting friends and eating lunch

Camden Lock, NW1 8AF

- Also on the banks of Regent's Canal
- World famous shopping market
- Shops & restaurants, including canal boat cafes
- Starting point for lots of different boat trips and tours. For example, you can catch a boat to London Zoo

FACT SHEET 3:
LONDON'S WATERWAYS TODAY

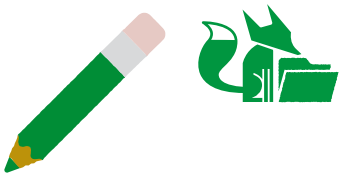
Paddington Basin, W2 1AS

- Junction of Grand Union & Regent's Canals
- Great location for boat hire and paddle boarding
- London's only floating park
- Cafés and restaurants
- Near Paddington Station

Mile End Park, E3 4DH

- Runs alongside Regent's canal in the East of the city
- Interesting architectural features, such as the award-winning Green Bridge
- Extensive towpaths, walkways and running tracks
- Wealth of wellbeing facilities including a Stadium and Leisure Centre, dedicated Children's, Ecology and Art's parks, climbing walls, a skate park and even an outdoor gym

ACTIVITY SHEET 1:
WELLBEING ACTIVITY PLANNING SHEET



Group name:

Name of activity:

Preferred location:
WHERE WILL IT TAKE PLACE?

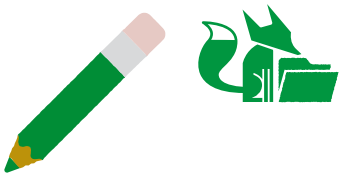
Brief description:
WHAT WILL WE DO?

Wellbeing benefits:
HOW WILL IT MAKE ME HAPPY AND HEALTHY?

Resources needed:
WHAT THINGS WILL WE TAKE?

Other things to consider:
IS IT EASY TO GET TO? WILL IT COST ANY MONEY? HOW LONG WILL IT TAKE?

ACTIVITY SHEET 1:
WELLBEING ACTIVITY RISK ASSESSMENT



Group name:

Name of activity and its benefits:

HAZARD IDENTIFIED What could go wrong?	**RISK FACTOR** High | Med | Low	**MEASURES REQUIRED TO CONTROL RISK** What can we do to stop it happening?

FINDING OUT USING FIELDWORK

Spotting maths in nature and discovering data about the great outdoors

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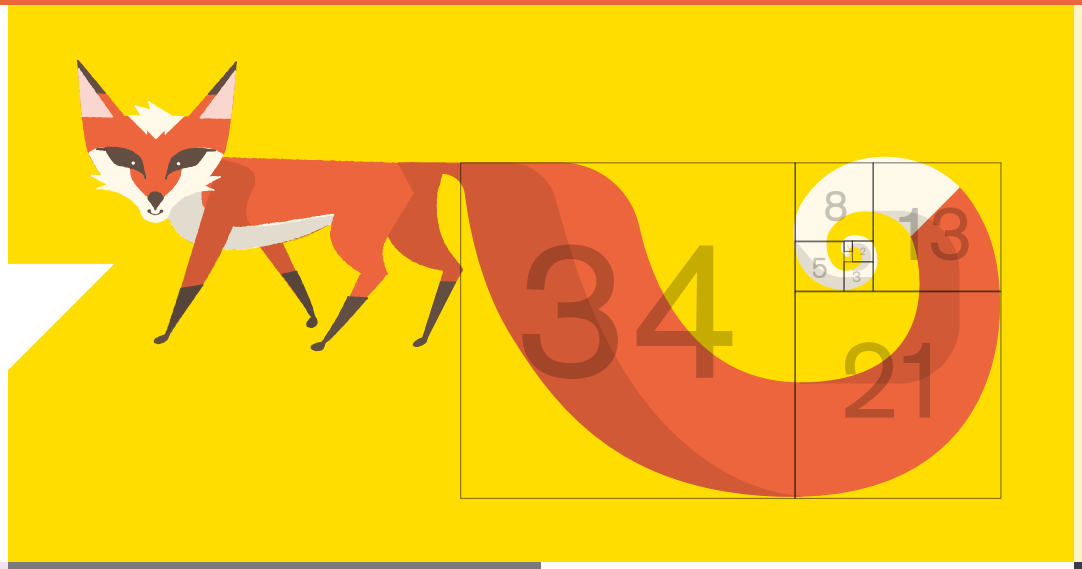
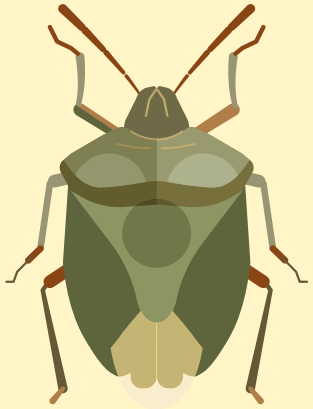
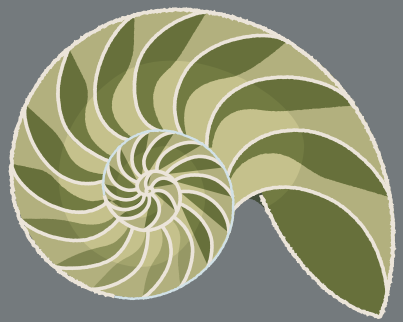
MATHS

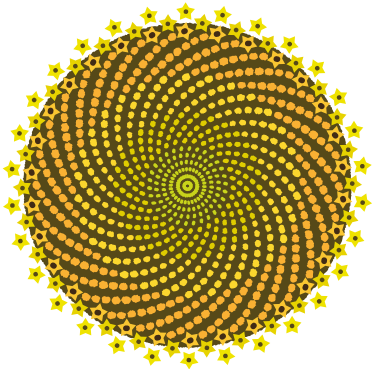
GEOGRAPHY

SCIENCE

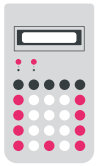






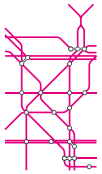


Learning objectives for pupils:



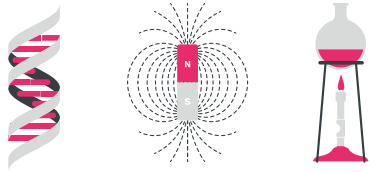
MATHS

- Solve problems including missing numbers, the four operations, fractions, decimals and shape.
- Practically investigate measurement (length, mass, volume) using appropriate tools; interpret and present discrete and continuous data using appropriate graphical methods.
- Complete, read and interpret information in tables.



GEOGRAPHY

- Use fieldwork to observe, measure, record and present information about the local area using a range of methods.



SCIENCE

- Complete different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

CONTENTS

DISCOVER: MATHS IN NATURE

Duration: 45–60 mins

Setting the scene

Maths is all around us. Numbers on doors, calculating change at the shops, dividing treats fairly between friends, times at the bus stop...

But have the students ever noticed or considered the ways maths is found in nature? Set the following question for open discussion as a class and record the children's responses:

WHERE HAVE YOU SEEN MATHS IN THE NATURAL WORLD?

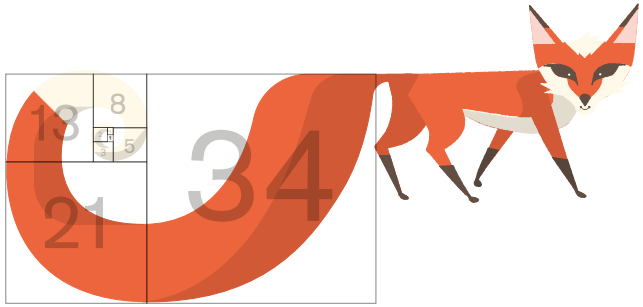
DISCOVER: MATHS IN NATURE continued

Activity 1

Part 1 – Describing nature mathematically

Look at Activity Sheet 1 – Maths in Nature (p43). Look closely at the images together and discuss what elements of mathematics the children can recognise within them. Unpick the mathematical vocabulary provided and encourage the students to match each word to one of the images. Then try to embed that vocabulary in a coherent description of what they can see.

Students should aim to write 1-2 sentences for each example to share with the rest of the group.



Part 2 – Fascinating Fibonacci!

Look at Activity Sheet 2 – Fascinating Fibonacci! (p56) There are many useful videos online explaining the Fibonacci sequence in basic terms, which could be shared at this point.

For example:

www.youtube.com/watch?v=kAm3dOjdYCI

Use the prompts on the sheet to challenge the children to continue the Fibonacci series (only the first few numbers are provided). Then investigate further ways it can be recognised in the natural world. You could encourage the students to make notes from watching the videos or let them do their own research online or at your local library. This will depend on how much time or the depth of approach you want to take. It would also work well as an interesting homework project.

The student's findings could be added to a display, shared in whole class discussion, or even used as stimuli for art work.

See **www.maths.surrey.ac.uk/hosted-sites/R.Knott/Fibonacci/fibnat.html** for further ideas of how to investigate the Fibonacci sequence with KS2.

DISCOVER:
CITIZEN SCIENTISTS AND BIG DATA

Duration: 45–60 minutes

Setting the scene

We often hear in the media about the effects of climate change, excessive use of single-use plastics and how our environment is suffering.

Your school may already be collecting data or taking part in citizen science activities.

But where does all this information come from? Prompt the students to discuss the following questions in groups to feedback into class discussion:

DISCOVER:
CITIZEN SCIENTISTS AND BIG DATA continued

Activity 1:

Part 1 – Who are the scientists?

Share Fact Sheet 1: Scientists studying the Natural World (p54) with the students and discuss the list of different job roles presented. This is not an exhaustive list and most of the job titles are umbrella terms. There'll always be niche specialists required to collect specific types of data.

A useful resource to explore is ***Spolight on the life of sciences, a guide to a career in Biology*** from the Royal Society of Biology:

https://bit.ly/2tt3Qur

You don't have to be professionally qualified to be a scientist however, as the students will know from their science curriculum work in school. There are lots of initiatives in London and across the UK encouraging people to become Citizen Scientists. That means getting involved in research and data collection in their local area and submitting that information to add to national databases.

This BBC link explains more about the concept:

https://bbc.in/31qLfLP

It also has a link to a short video of Sir David Attenborough talking about the importance of citizen scientists.

DISCOVER:
CITIZEN SCIENTISTS AND BIG DATA continued

Activity 1 continued

Part 2 – What do we do with the data?

Introduce the students to GiGL – Greenspace information for Greater London. This collects, organises and stores data that helps our understanding of London's natural environment.

www.gigl.org.uk/

You can also use the GLA's green cover map, which uses high-resolution imagery and mapping to identify trees, plants and open water across London.

https://maps.london.gov.uk/green-cover/

Confident students could explore these websites independently. However, it may be better to navigate a few areas on an interactive whiteboard to show the class key features.

Students will see that:

- there's a striking map of greenspace cover in London, and links to further greenspace maps to interactively explore: **https://maps.london.gov.uk/green-cover/**
- there is an area for data submission, where information collected by both professional and amateur scientists is welcomed
- there are ways students and professional environmental or ecological consultants can request specific data to inform their work
- there's lots of information on how the data can be, and is being, used to inform projects and conservation work across London.

These discussions should leave students with a firm understanding of the real-life applications of collecting ecological and environmental data. Ask them to list at least one on a post-it note (or similar) to add to a class list at the end.

Why not:

challenge the students to research and retrieve 2-3 pieces of data that would support an argument based on a global environmental issue e.g. climate change?

The National Geographic kids' website is an example of a suitable place to search

www.natgeokids.com/uk/

EXPLORE

Discover fieldwork techniques and collect data at one of the Field Studies Council (FSC) London sites

The Field Studies Council London division offer a range of KS2 workshops at five locations in the city. From bush craft to mini beasts, a day with their experts brings science, mathematical and ecological learning to life. At the same time, it promotes engagement and interest in the outdoors. The one-day workshop called ***Changing Environments*** is relevant to the entire Wild About London unit. It gives students a chance to explore the local area and discover how people have changed habitats. Students use fieldwork techniques and equipment to collect data that shows how people impact on the site. They also investigate local management techniques on one specific habitat.

The course is run at:

Bushy Park
Hampton, Middlesex, W12 2EJ

The Regent's Park
London, NW14NR

Greenwich Park
Greenwich, SE10 8QY

Queen Elizabeth Olympic Park
Stratford, E20 1EJ

This could be combined as an EXPLORE visit for the Planning the Perfect Park module (p76–89).

Beckenham Place
Beckenham Hill Road, London, BR3 1SY

Bookings 01306 734501

Course Information 020 8502 8500

enquiries.ldn@field-studies-council.org

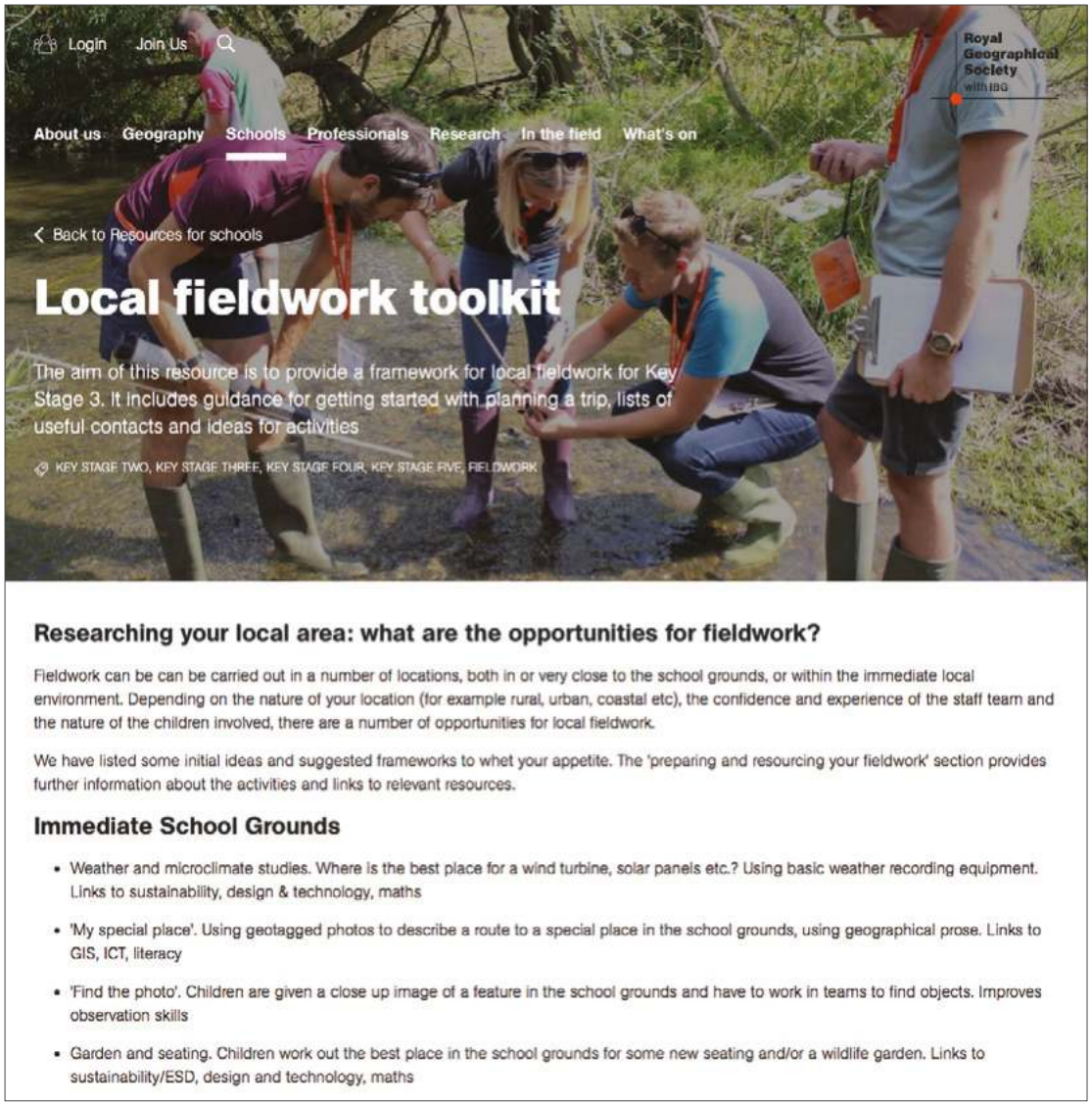
www.field-studies-council.org/centres

EXPLORE

Try out techniques near to your school using the Local Area Fieldwork Toolkit

You can try out many different types of fieldwork with your class in your school grounds using the Royal Geographical Society's free resources. Free downloads include a fieldwork toolkit for teachers, which can be used to help organise a local area study.

Find out more:
www.rgs.org/schools/teaching-resources/local-fieldwork-toolkit/



CONNECT:
BECOME A CITIZEN SCIENTIST!

Duration: 60-120 mins
(You may want to split across two sessions)

Setting the scene

Recap previous learning with the students:

- Which types of scientists collect information about our environment?
- What happens to this data and how can it be used?
- What fieldwork techniques did we discover or try on our Explore visit?

Explain that we will now take part in fieldwork in our local area. Then we'll analyse the data and submit it to a larger agency for wider use – we will be Citizen Scientists!

Activity 1:

Preparation for field work

The Open Air Laboratories (OPAL) network is a UK-wide citizen science initiative that allows you to get hands-on with nature, whatever your age or level of ability. They develop activities and resources, including national surveys like the Bugs Count, which are ideal for completing on your school grounds or local park.

Find and download all the materials you need here:

www.opalexplorenature.org/bugscount#english

Each group will need a copy of the **Bugs Count Survey Booklet**, the **Invertebrate identification guide** and the **Species Quest Identification Guide**.

Share the objectives of the survey with the students and split them into mixed ability groups to complete the tasks.

CONNECT:
BECOME A CITIZEN SCIENTIST! continued

Activity 2:
Get outside and record your observations

The Bugs Count Survey will take between 30 minutes and an hour to complete.

The survey has three parts:

A. Explore the area and identify the different microhabitats it contains (p7–8 of the booklet)

B. Three timed challenges, each 15 minutes (pages 7–8):

Challenge 1: Hunt for ground-living invertebrates on soft ground surfaces like soil, short grass and among fallen leaves and twigs.

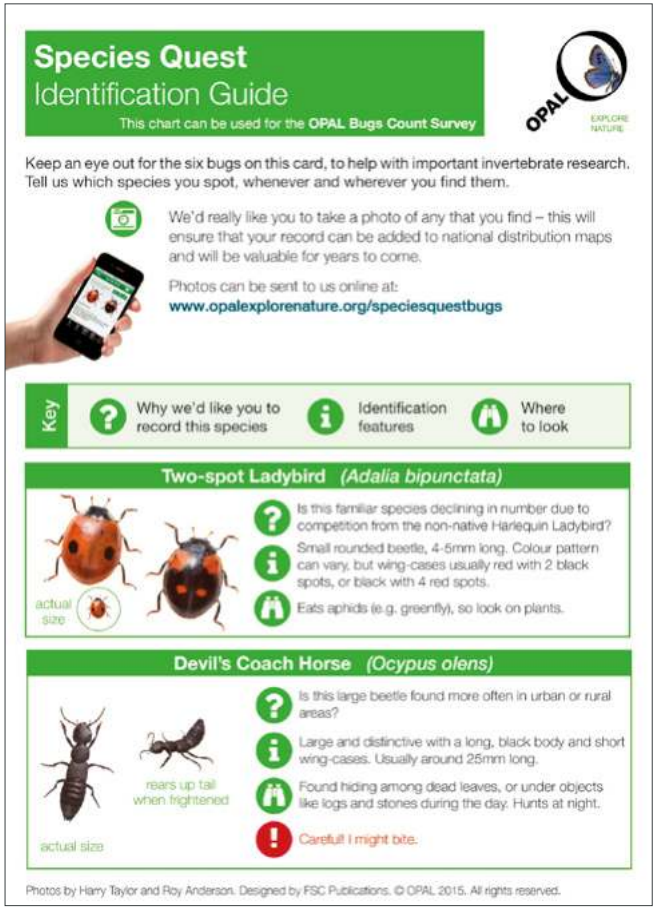
Challenge 2: Search for invertebrates on human-made hard surfaces like paving, fences and the outside of buildings.

Challenge 3: Look for invertebrates on plants, including long grass, flowers and shrubs.

C. Species Quest: during the challenges, keep a look out for the six bugs described on the downloadable ***Species Quest Identification Guide***.

Ensure the students take note of the equipment they will need before they head outside. Talk about any necessary safety points, such as washing hands and showing respect to the plants and animals they'll be working with.

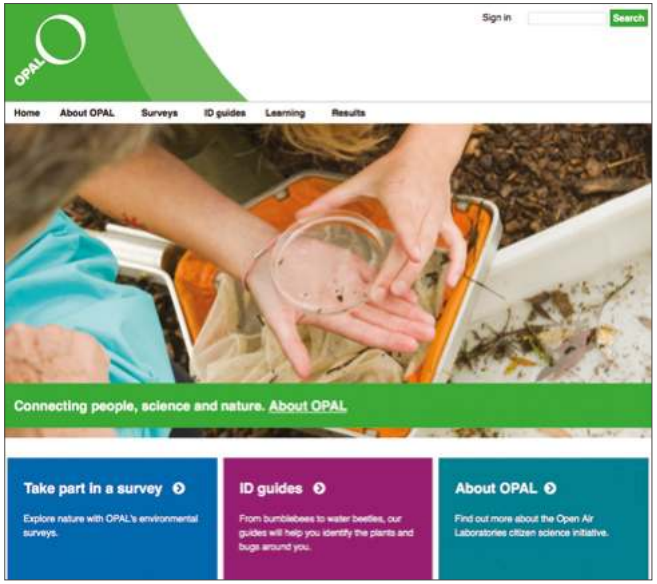
(Pages 3-4 of the ***Bugs Count Survey*** Booklet give a more detailed overview of the above.)



CONNECT:
BECOME A CITIZEN SCIENTIST! continued

Activity 3:
Analyse, present and submit your data

Before uploading your results at **www.opalexplorenature.org** give students the opportunity to analyse and present the data they have found in different ways. Share Activity Sheet 2: Data analysis tasks (p57). This will prompt students to answer questions on their findings and create graphs to present the data they recorded. Students will need experience and/or teaching of bar charts, range, mean, median and mode.



If you weren't able to collect enough data, you may choose to present children with a hypothetical version of survey results for them to work with. However, please ensure you submit only factual data to the survey!

If you ran the ***Bugs Count Survey*** on your school grounds, you may choose to do it again in a different setting for comparison. For example, you could ask students to also complete it in their gardens or in the local park. Or you could contact another local school, encourage them to do the survey too and request their data so you can compare it.

This should prompt an important concluding discussion about getting reliable scientific data and ensuring fair testing.

- Did the students notice measures in place in the survey instructions that helped make the test fair?
  For example: Timing the challenges
- Are your findings alone enough to provide a picture of bug populations in your local area?
  For example: Lots of readings mean an average can be used etc.
- What more could be done to obtain an accurate picture of how bug populations are thriving locally?
  For example: Survey across a year / longer time frame to spot trends etc.

NB
The work in this module links closely to ideas and activities explored in the next module, Love Your Local Habitats. This encourages students to think about what their results mean for the habitat they surveyed. This module also includes links to further free online resources and wildlife recording apps. These can be used to record and submit data to monitor and protect London's wildlife.

CONNECT:
BECOME A CITIZEN SCIENTIST! continued

Part 3: Analyse, present and submit your data

Why not:

- Let the Field Studies Council know about all your hard work by tweeting them **@FSCLondon** ?
- Compare the data the students found to data from other parts of London by searching on GiGL?
- Set up your own Citizen Science project?

  Think of a set of environmental data you could try to collect either on your school grounds or in a local park. Encourage students to come up with the necessary instructions and recording proforma. This can be sent to other classes in school or the wider school community to encourage them to take part. Collect and analyse the data before submitting it to a wider organisation like GiGL or even your local council.
- Look at OPAL's other resources to encourage participation in local fieldwork: **www.opalexplorenature.org/education-packs**
- Take advantage of professional development opportunities for teachers run by organisations such as: **www.leef.org.uk**
- Run a BioBlitz! A comprehensive guide is available here: **www.bnhc.org.uk/bioblitz/guide-running-bioblitz/**
- The FSC provides materials suitable for carrying out an investigation of playing field plants, where students could use coordinates and quadrats to count biodiversity. You could do this as an alternative to the OPAL Bugs Count survey or in addition.

  See **www.field-studies-council.org/product-category/publications/** for more info and downloads.
- The GLA have listed further ways to count wildlife here:

  www.london.gov.uk/what-we-do/environment/parks-green-spaces-and-biodiversity/grow/count-local-wildlife

FACT SHEET 1:
SCIENTISTS STUDYING THE NATURAL WORLD

BIOLOGISTS

Study life and living organisms, including their physical structure, chemical processes, development and evolution.

As with other scientific disciplines, the field is so huge that most will define their work through a particular specialism, e.g. marine biologists focus on living organims in the sea.

ECOLOGIST

Biologists who focus on how organisms interact with each other and the environment around them

Includes looking at habitats and conservation issues

Research (collecting and analysing data) and consultancy roles (helping clients know how that data might affect them)

BOTANIST

Biologists who focus on plants!
This might include looking at ways to feed the world or discovering new medicines in rainforests.

ZOOLOGIST

Biologists who focus on animals!
This might include studying animal behaviour or protecting endangered species.

OTHER DISCIPLINES

There's lots! Microbiologists study bacteria, geneticists look at DNA, neurobiologists study the brain and pharmacologists discover medicines. How many more can you name?

PEOPLE TRAINED IN THE ABOVE MAY ALSO WORK AS:

ENVIRONMENTAL SCIENTISTS

An environmental scientist applies a scientific understanding of the natural world to the protection of nature. They focus on balancing human needs with the needs of organisms in the natural environment

They also think about the way that decisions made now might affect future generations and populations coexisting in the world.

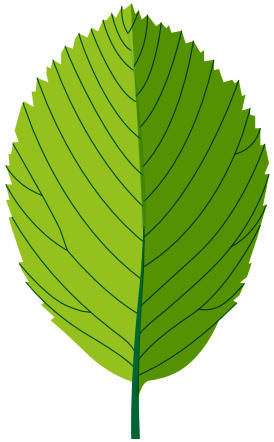
ACTIVITY SHEET 1: MATHS IN NATURE

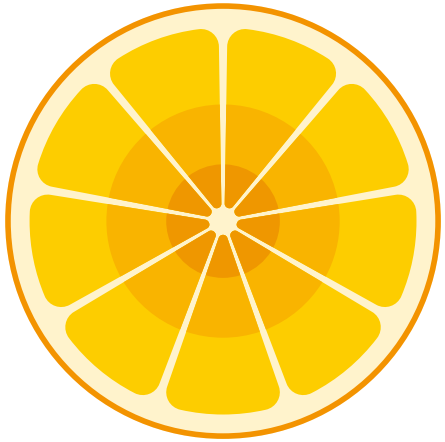
Can you describe what elements of mathematics can be seen in these images taken from the natural world?

Try to use the following mathematical vocabulary in your explanations.

symmetry | angle | vertices | edges

pattern | shape | tessellation | fraction





ACTIVITY SHEET 2: FASCINATING FIBONACCI!

What is the Fibonacci sequence?

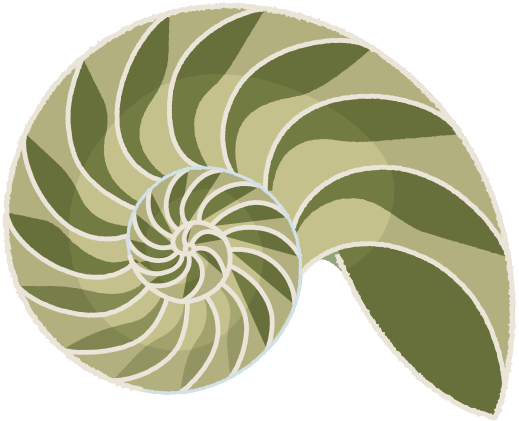
The Fibonacci sequence is named after the Italian mathematician who originally described it. It is a series of numbers where the next number is found by adding up the two previous numbers before it.

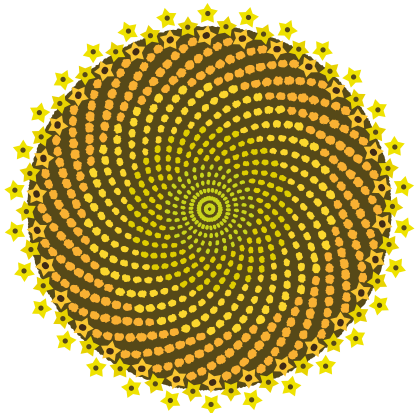
It begins 0, 1, 1, 2, 3, 5, 8, 13, 21

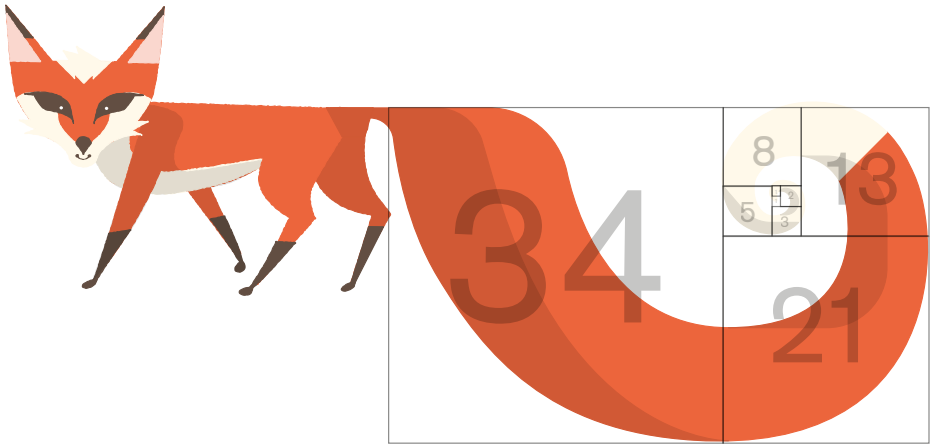
Can you continue the sequence above until you reach above 100?

Interestingly, this pattern is commonly found in the natural world. The ratio between the numbers (1.618034) is referred to as the **Golden Ratio**. It can be seen in the forms of many natural objects. Examples include the spiral of a nautilus shell or how a seed head forms on a sunflower or pine cone.

Task:
In pairs, investigate three more examples of the Fibonacci sequence found in nature and present your ideas to the rest of the class.







ACTIVITY SHEET 3: DATA ANALYSIS TASKS

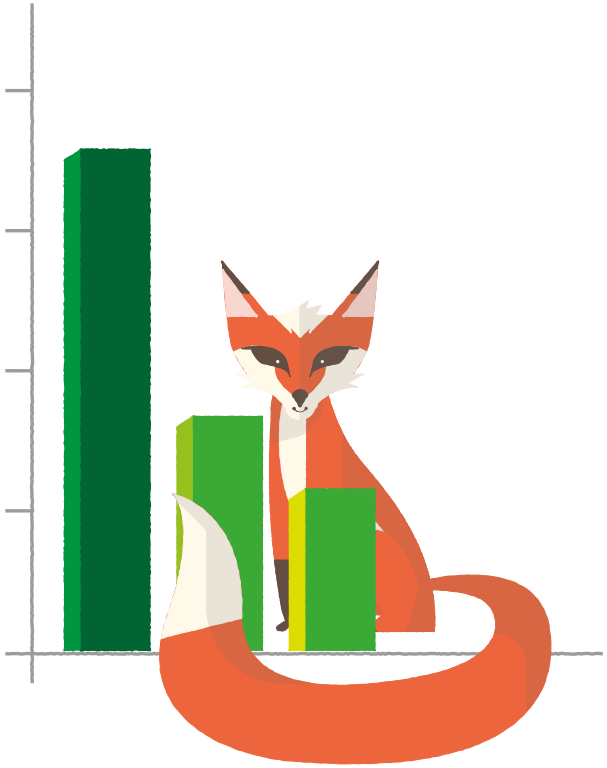
It's now time to analyse the data you have collected in your *Bugs Count Survey*.

Task 1:

Create a bar graph to present the number of each type of bug found (tallied data) in each of the three timed challenge locations. You have several decisions to make as a group so be ready to share your reasoning.

Ensure you have:

- three separate bar charts, titled with the location or use a colour key to represent the three different locations alongside each other on one larger graph – which do you think is most useful to draw conclusions from your data?
- labelled your x and y axis (suggest x = name of bug, y = number observed)
- made a group decision about whether to include null results (for example, include where you saw 0 of that type of bug, or miss those ones out) – is it important to include where nothing was observed in this context?
- used squared paper to present your work or enter data into database software (for example, MS Excel) and create digital bar graphs. If you have used database software, you may be able to produce other formats to present your data such as pie charts. How might these be useful?



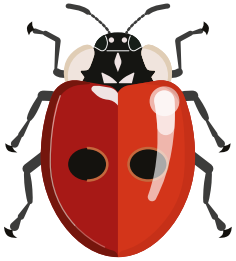
ACTIVITY SHEET 3:
DATA ANALYSIS TASKS continued

Task 2:

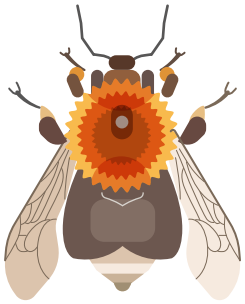
Compile (put together) the data you collected for the six species defined in the *Species Quest* (p14) across all three locations.

As a group, choose an appropriate way to present this data – another bar graph? a table? a pie chart? pictogram?

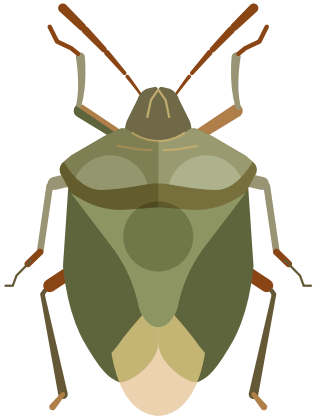
Looking at how many of the six species you observed altogether, can you find the ***mean***, ***mode***, ***median*** and the ***data range*** for your findings?



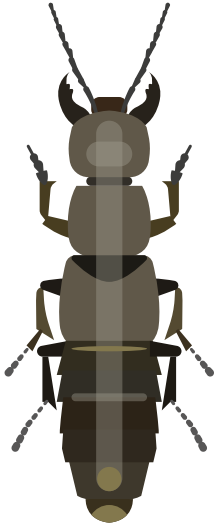
2-SPOT LADYBIRD



TREE BUMBLEBEE

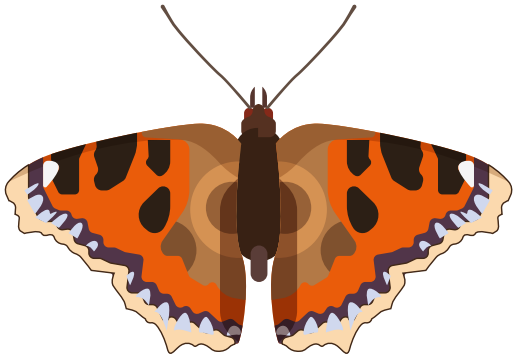


GREEN SHIELDBUG



DEVIL'S COACH HORSE

LEOPARD SLUG



SMALL TORTISESHELL

LOVE YOUR LOCAL HABITATS

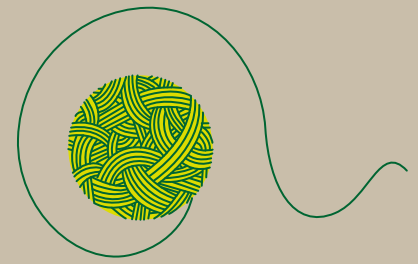
Welcoming wildlife into the world around us

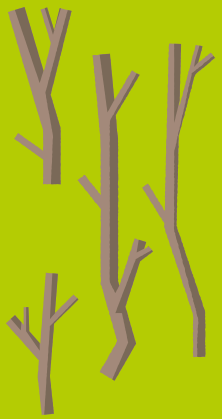
SCIENCE

PSHE & CITIZENSHIP

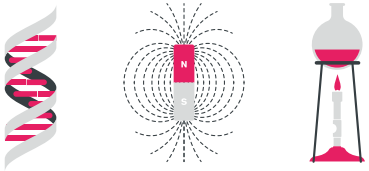
DESIGN TECHNOLOGY

ENGLISH





Learning objectives for pupils:



SCIENCE

- identify and name a variety of living things in their local and wider environment
- describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- recognise that environments can change and that this can sometimes pose dangers to living things

PSHE & CITIZENSHIP

- talk and write about their opinions, and explain their views, on issues that affect themselves and society
- to research, discuss and debate topical issues, problems and events

DESIGN TECHNOLOGY

- choose from and use a wider range of tools and equipment to perform practical tasks accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

ENGLISH

- draft and write individual, group or class persuasive letters for real purposes, for example, put a point of view, comment on an emotive issue etc.

CONTENTS

DISCOVER:
DOES LONDON'S WILDLIFE LOVE OUR LOCAL AREA?

Setting the scene

Duration: 60–120 mins (you may want to split across two sessions)

Activity 1 Part 1

What is on our doorstep now?

Over 15,000 different species of plants, animals and fungi have been recorded in London. Many of these are permanent residents of the city. This amazing breadth of living things and the natural habitats they live in is called biodiversity.

Encourage the students to discuss their experiences of wildlife in and around your school. If you've finished the previous module (**Finding out using fieldwork** p40–58), you may already have detailed data about your school's ecological profile to discuss. Otherwise, take a further opportunity to get outside and take a close look at your surroundings.

- What wildlife do they notice on a day-to-day basis? It could be that they regularly see red foxes, they hear birds in the trees, or they see insects in the playground.
- Is there a significant amount of plant life on your school site, or locally, that provides wildlife habitat? Can the students describe what ecosystems this may support?
- Has anything changed in your local area recently that may have affected wildlife populations? For example, land may have been cleared for residential building to take place, driving away natural inhabitants. Alternatively, on a positive note, it might be that new plants have been added to a local shopping street to attract pollinators.

In pairs or small groups, use Activity sheet 1: Wildlife on our doorstep (p73) on our doorstep to record ideas. Evaluate both the positive and negative aspects of their immediate environment in terms of how many ecosystems it may support.

DISCOVER:
DOES LONDON'S WILDLIFE LOVE OUR LOCAL AREA? continued

Activity 1 Part 2

What wildlife could we welcome in?

Share Activity Sheet 2: Animal life in London (p74). Working individually or in pairs, students can find the names of some of London's most interesting and common animal populations in the word search.

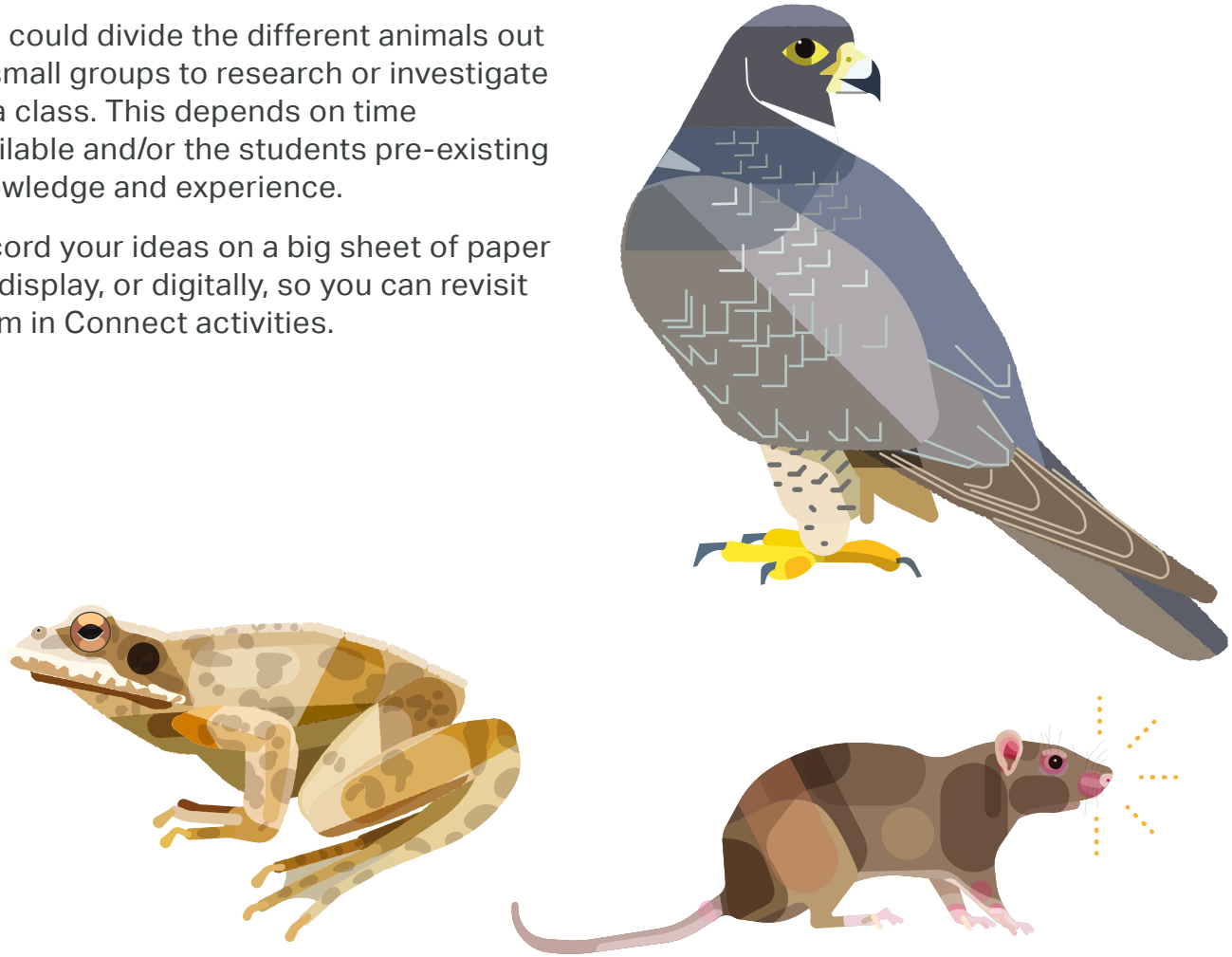
Students should then consider the benefits and drawbacks of encouraging populations of the listed species.

For example:

- Which animals offer useful benefits to gardeners or need our conservation efforts to ensure they continue to prosper in London? What types of habitat would need to be nurtured for them to thrive?
- Which are considered invasive species or pests and would perhaps harm our native species or cause problems if they were encouraged to live near our schools or homes?

You could divide the different animals out to small groups to research or investigate as a class. This depends on time available and/or the students pre-existing knowledge and experience.

Record your ideas on a big sheet of paper for display, or digitally, so you can revisit them in Connect activities.



EXPLORE:
LOVE YOUR LOCAL HABITATS

London Wildlife Trust

London Wildlife Trust's vision is a London alive with nature, where everyone can experience and enjoy wildlife.

They aim to:

- protect, restore and create wild places for nature
- engage, inspire and enable people to connect with nature
- champion, challenge and influence people to stand up for nature

020 7261 0447

enquiries@wildlondon.org.uk

Wild about Learning workshops are a great way to connect your class to nature through hands-on activities, directly linked with the National Curriculum.

Workshops can be booked at the following sites:

Woodberry Wetlands

Lordship Rd, New River Path, Woodberry Down, London N16 5HQ

Walthamstow Wetlands

2 Forest Rd, London N17 9NH

Centre for Wildlife Gardening

28 Marsden Rd, London SE15 4EE

EXPLORE:
LOVE YOUR LOCAL HABITATS

Camley Street Natural Park
12 Camley Street, Kings Cross, London N1C 4PW

Crane Park Island
Ellerman Ave, London TW2 6AA

Sydenham Hill Wood
Crescent Wood Road, Sydenham Hill, London SE26 6LS

Gunnersbury Triangle
Bollo Lane, Chiswick, London W4 5LN

NB
During your London Wildlife Trust visit, ask the Outdoor Learning team for tips in encouraging wildlife to your school grounds and ask if they have examples of what can be done.

EXPLORE:
LOVE YOUR LOCAL HABITATS continued

You can also plan a visit to one of the 36 nature reserves that London Wildlife Trust manages across London.

All are accessible by public transport and are free to enter for individuals. There may be a small fee for large groups at some sites where visits must be booked in advance.

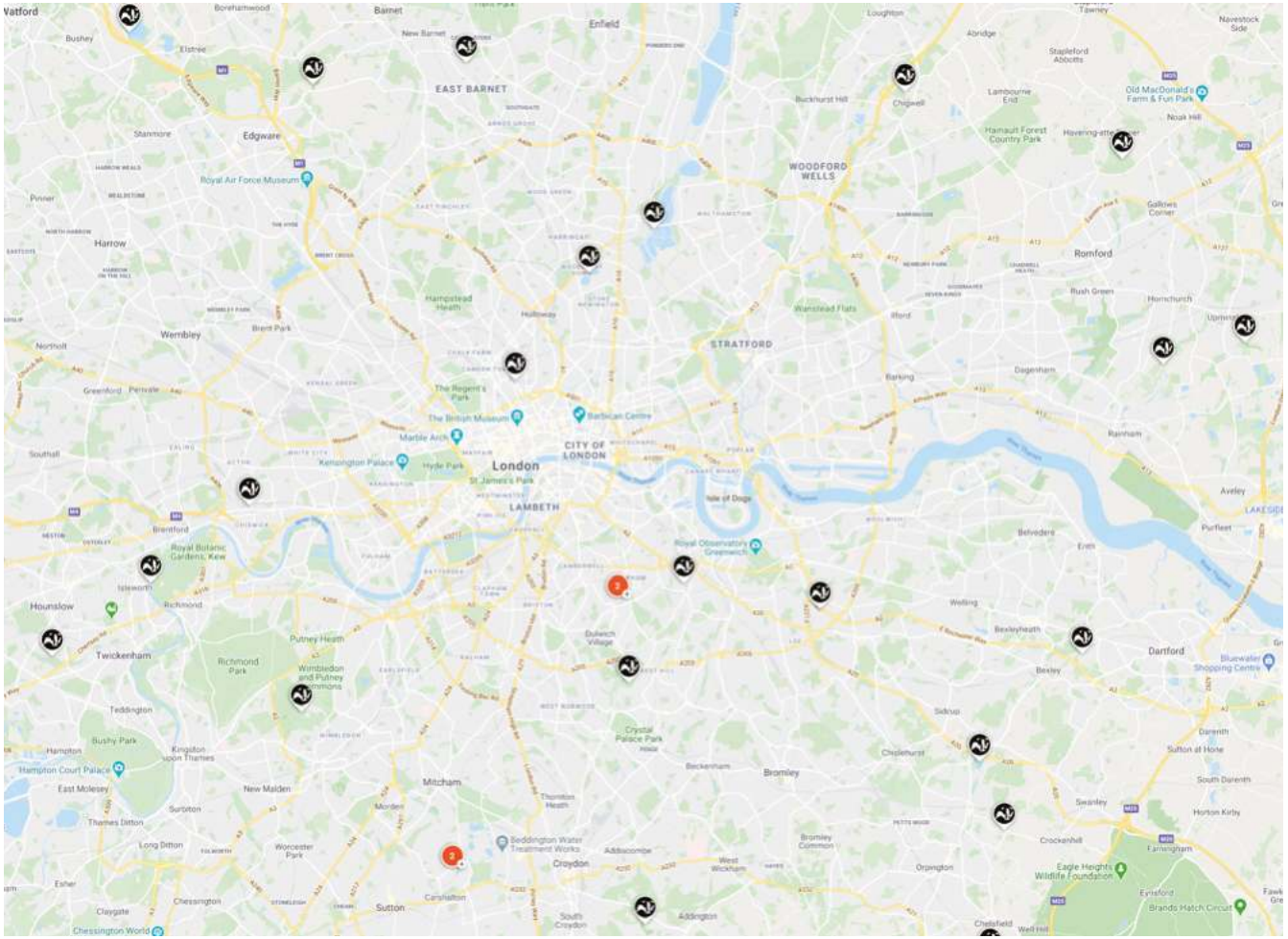
It's a great chance for students to experience a range of habitats first-hand like wetland, grassland and woods. They can also encounter their wealth of wild inhabitants, and discover how wildlife is being encouraged to thrive there.

A full list of London wildlife trust reserves can be found here:
www.wildlondon.org.uk/reserves

If there are no nature reserves near you, you can discover further wildlife sites here:
http://discover-london.gigl.org.uk

To find out more, visit

www.wildlondon.org.uk/what-we-do/outdoor-education



CONNECT:
WELCOMING WILDLIFE WITH HELP FROM OUR LOCAL COMMUNITY

Duration: This would work best as a continuous project over a half-term but is flexible, dependent on depth of approach. The following planning is for running a larger scale project. You could also focus on smaller changes to the school environment (for example, adding planters outside the classroom window) to meet the learning objectives.

Setting the scene

Explain to the students that you will be undertaking a project to welcome more wildlife onto your school grounds.

Activity 1 Part 1:

Investigating a way to welcome in wildlife

Look back at the information you discussed and recorded in Discover activities (p62–63) about London's wildlife populations. Which did you decide were a good idea to welcome into your world? Consider any small ways of attracting or encouraging wildlife you may have seen on your Explore visit, too.

What would specific species need to thrive in your school grounds? For example, certain species of bees might benefit from planting more wildflowers in containers, or ladybirds might need a bug hotel to shelter in. Creating deadwood piles can be a simple but effective idea in encouraging minibeasts.

During your LWT site Explore visit ask the Outdoor Learning team for tips in encouraging wildlife to your school ground and ask if they have examples to show you what can be done.

Look at Fact sheet 1: Useful guides for Welcoming Wildlife (p72). It has instructions for constructing a large insect hotel, but also links to other useful guides available from the Wildlife Trusts for different ways to help.

Guide the students to consider the time of year you are working in. For example, in winter or early spring, focus on things like bird feeders which might provide more observable changes than creating a pond at that time of year. However, it is important to stress to students that even making small changes to their school environment make a significant difference over time even if wildlife doesn't move in immediately.

Vote as a class to decide on a project you would like to undertake to attract more wildlife into your school grounds and obtain a suitable design to follow (see Fact sheet 1, p72). You may also want to talk about risk assessments for your chosen activity as a class (see Wellbeing and Waterways module for some ideas as to how to encourage students to consider these).

CONNECT:
WELCOMING WILDLIFE WITH HELP FROM OUR LOCAL COMMUNITY continued

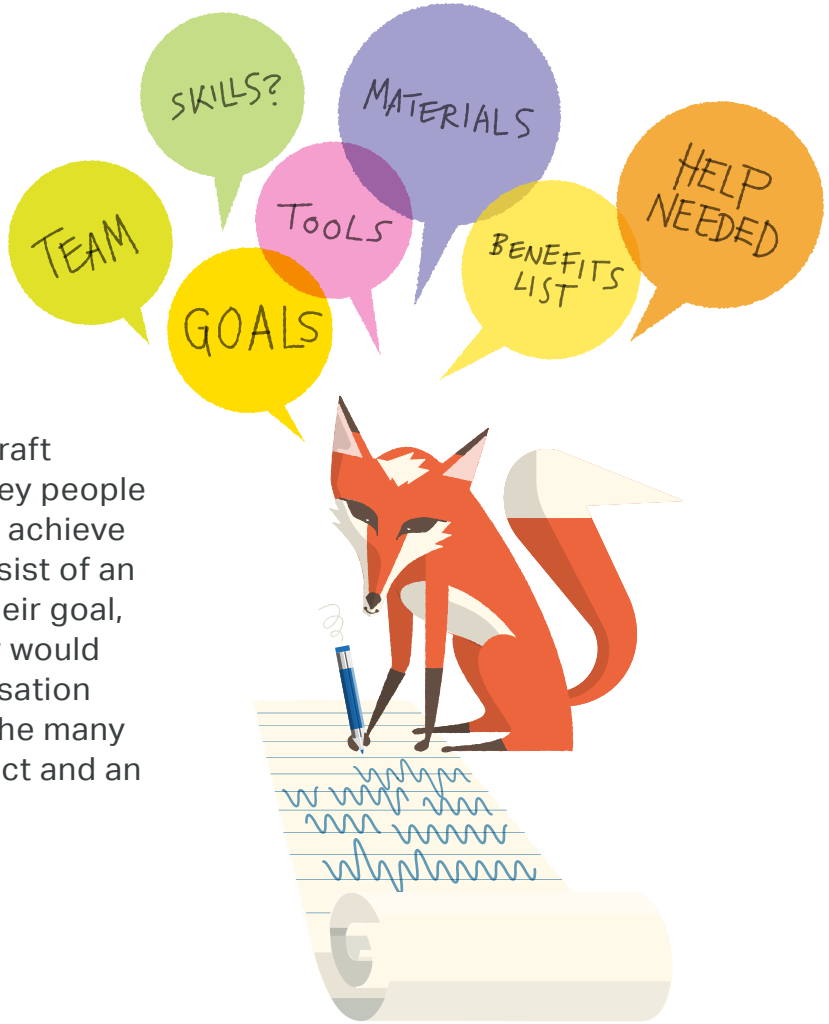
Activity 1 Part 2:
Persuading others to help

To create your chosen wildlife haven, what help will you need?

Encourage the students to make lists of skills/people, tools and materials they will need to achieve their goal. You could use Activity Sheet 3: What help will we need? (p75) to guide this process.

Think about all the benefits of completing your project and create a list of these. Conservation of species and preserving habitats are very important. Do also encourage children to think of wider benefits such as the wellbeing benefits of being outside, the social benefits of them working as a team and how the project might offer aesthetic improvement or interest to the school. There will also be many learning opportunities for not only themselves, but the wider school community, which could be highlighted.

The students will then need to draft persuasive letters or emails to key people to encourage them to help them achieve their goal. The letter should consist of an opening paragraph explaining their goal, a paragraph explaining how they would like the person/people or organisation to help, a paragraph explaining the many benefits to completing the project and an appropriate closing.



CONNECT:
WELCOMING WILDLIFE WITH HELP FROM OUR LOCAL COMMUNITY continued

Activity 1 Part 2:
Persuading others to help continued

Divide the class so that the following are covered:

- Head teacher/school leadership team/ governing body to seek permission to carry out/install the project on school grounds
- Local community (other classes in school, local businesses, the council) for donations of materials needed (for example, it could be requesting old palettes from a builders' yard or unused plant pots from families or a local garden centre)
- School site manager/caretaker or skilled, known parents/carers to ask for borrowing of tools or skilled help in the construction/installation phase.

There may even be potential funding available for your project idea – find out more at:

www.london.gov.uk/what-we-do/funding

Ensure students are using the appropriate formal language and encourage groups to swap drafts and proof-read for each other. Send out the information and await responses!

What about doing more for wildlife at home? Learn how to become a Backyard Nature Guardian:

www.backyardnature.org

CONNECT:
WELCOMING WILDLIFE WITH HELP FROM OUR LOCAL COMMUNITY continued

Activity 1 Part 3:
Creating your wildlife haven

Set a date or time to carry out construction and installation of your chosen wildlife haven, once you have gathered or recruited all the help you need. Depending on your chosen project, it might work best to do this across a day, where groups take it in turns to get involved. Alternatively, it might be that you are making lots of the same thing (e.g. planters) in groups simultaneously.

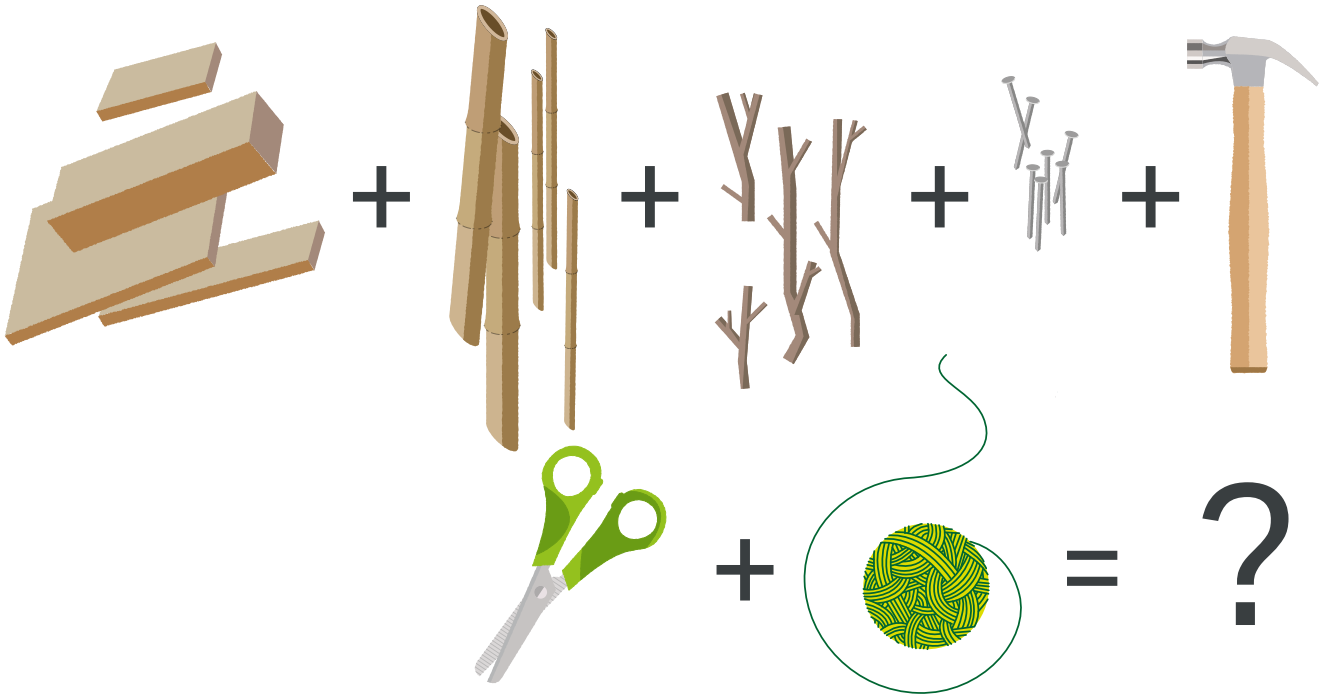
This is an ideal opportunity to assess students' safe use of tools, their teamwork abilities and ask them to evaluate their enjoyment of working outside – how did it make the students feel?

Where appropriate, students should be encouraged to write thank you letters or cards to those who offered help or donations for their project.

You could organise and invite other classes in school or parents/carers to an opening ceremony of your new wildlife haven to celebrate all your hard work!

Let London Wildlife Trust share your success using:

Twitter **@wildlondon**
Instagram **@wild.london** or
Facebook **@LondonWildlifeTrust**

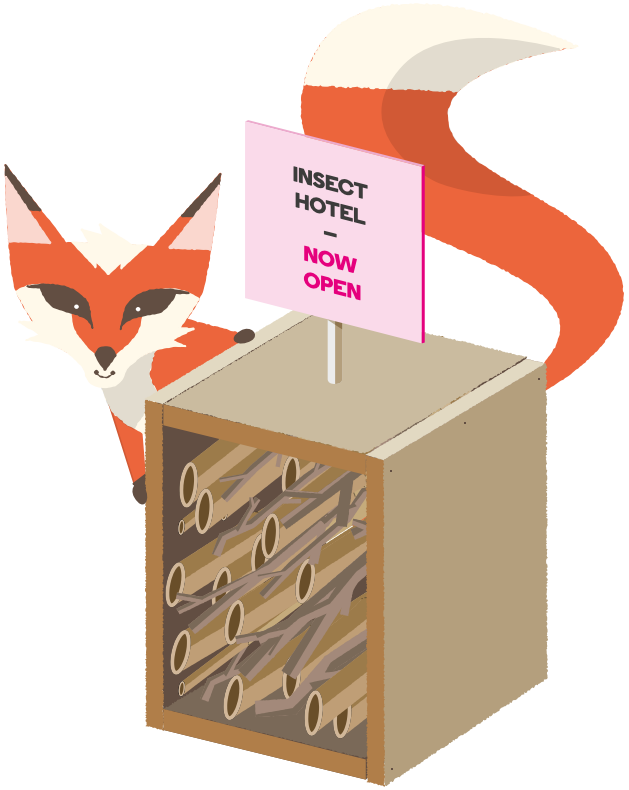


CONNECT:
WELCOMING WILDLIFE WITH HELP FROM OUR LOCAL COMMUNITY continued

Activity 1 Part 3:
Creating your wildlife haven continued

Why not...?

- Write to another local school to tell them about your project and offer your expertise to help them carry out something similar themselves.
- Continue to use field studying techniques to track wild inhabitants of your school grounds over time. This data could be positively received by your school leadership team, governing body or even the London Wildlife Trust in its work to track species populations. You could submit data to Gigl or BRC (see Finding Out Using Fieldwork module p40-58).
- Write your own useful guide of ideas and instructions for welcoming in more wildlife and send it out to the wider school community.
- Let a local newspaper know about all your hard work so you can use their publication as another communication tool to get your message out to a wider audience in your area.
- Take part in the Wildlife Trusts' #30DaysWild challenge, where you are encouraged to do something outdoors every day for the month of June (or any time that suits!) to make you feel happier and healthier: **www.wildlifetrusts.org/wildness**
- Use the project to achieve the CREST Award. You may be eligible for funding through the Mayor's London Scientist programme: **www.london.gov.uk/scientist** **www.crestawards.org**



FACT SHEET 1:
USEFUL GUIDES TO WELCOMING WILDLIFE

How to make an insect hotel

The Wildlife Trusts offer many useful guides to help you make attractive spaces for wildlife in your school or garden.

As an alternative to an insect hotel, or as well, you could make:

A bee hotel
www.wildlifetrusts.org/actions/how-make-bee-hotel

A bat box
www.wildlifetrusts.org/actions/how-build-bat-box

Bird feeders
www.wildlifetrusts.org/actions/how-feed-birds-your-garden

Container gardens
(ideal for small spaces)
www.wildlifetrusts.org/actions/how-create-container-garden-wildlife

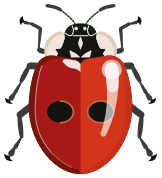
ACTIVITY SHEET 1: WILDLIFE ON OUR DOORSTEP

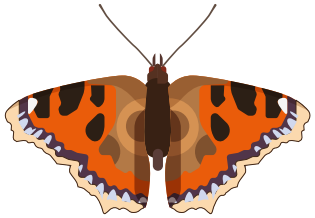
From the wildlife on your doorstep class discussions, fill in the positive and negative aspects of how the environment supports local wildlife and ecosystems.

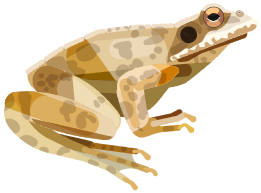
POSITIVE ASPECTS	NEGATIVE ASPECTS
What wildlife is thriving in your area? Which plants and animals do you regularly see around your school? What habitats can you see locally, and which ecosystems might be supported by them?	What types of habitat does your local area lack? What might be stopping wildlife thriving on your school grounds? Have there been any changes to your local environment that may have driven wildlife away?

ACTIVITY SHEET 2:
ANIMAL LIFE IN LONDON

Find the names of some of London's most interesting and common animal populations in the word search opposite.







ring-necked parakeet

grey heron

peregrine falcon

feral pigeon

red fox

muntjac deer

badger

hedgehog

grey squirrel

common rat

house mouse

common frog

red admiral butterfly

ladybird

honeybee

T	L	A	B	F	C	O	M	M	O	N	F	R	O	G	X	H	L	L	H
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H	H	C	O	D	E	L	B	O	M	Y	I	X	Z	J	Q	S	P	Y	U
R	I	N	G	N	E	C	K	E	D	P	A	R	A	K	E	E	T	B	G
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F	E	R	A	L	P	I	G	E	O	N	I	B	R	Z	R	P	V	W	J
M	U	N	T	J	A	C	D	E	E	R	H	E	D	G	E	H	O	G	K
R	E	D	F	O	X	O	Q	B	M	S	Y	W	B	Q	L	D	B	S	M
C	O	M	M	O	N	R	A	T	T	W	O	J	V	C	O	N	V	Z	S
M	U	F	O	K	S	A	B	W	A	Y	T	Q	T	D	P	M	Z	C	K

What are the benefits of encouraging populations of these species in London? Are any on the decline or are there others which need controlling?

ACTIVITY SHEET 3:
WHAT HELP WILL WE NEED?

We are looking to make/create:

to encourage

to thrive in our school grounds.

Things we need to achieve our goal:

PEOPLE / SKILLS

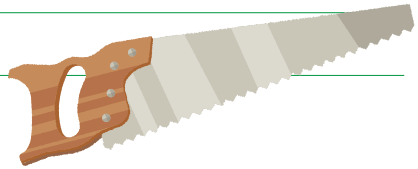
Will you need someone with carpentry skills? A flair for design? Knowledge of best plants for pollinators?

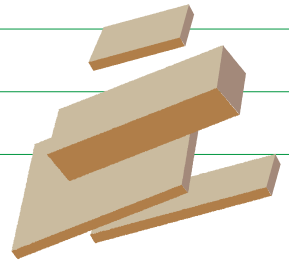
TOOLS

Will you need someone to lend any special construction tools, e.g. drills for attaching bird boxes to walls etc?

MATERIALS

What will your project be made from? Will you need to collect these from your local environment (such as stones) or ask for donations?



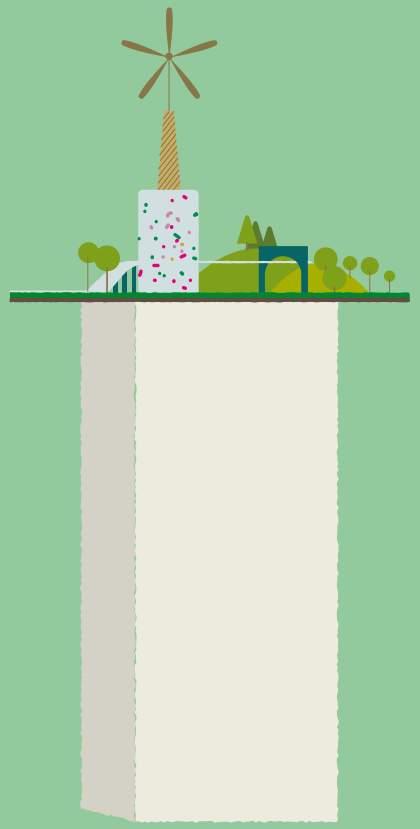


PLANNING THE PERFECT PARK

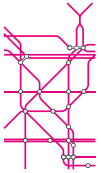
How do we design green spaces for humans & wildlife?

GEOGRAPHY

ART & DESIGN



Learning objectives for pupils:



GEOGRAPHY

- Understand and describe key aspects of human and physical geography.
- Use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies.

ART & DESIGN

- Draft and write individual, group or class persuasive letters for real purposes, for example, put a point of view, comment on an emotive issue etc.

CONTENTS

DISCOVER:
DOES LONDON'S WILDLIFE LOVE OUR LOCAL AREA?

Setting the scene

Duration: 60–120 mins (You may want to split across two sessions)

In this module, we'll learn about the features that need to be considered when designing parks and green spaces. To get the students thinking, share the opening questions...

Describe your favourite parks or green spaces you've visited...

WHAT MADE THEM THE BEST?

Activity 1 Part 1

What makes a green space great?

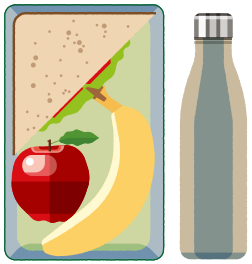
In pairs, ask the children to think of 10 or more reasons why people might want to visit a park or green space. Feedback ideas as a class and create a list. Use coloured pens to create a key for possible different demographics. For example, circle all the reasons that might appeal to families in red. Or underline reasons that might appeal to individuals looking to do sports/activities in blue and so on. How many groups from your local community have you covered?

Present the students with Factsheet 1: Interesting features in London's green spaces (p84). These are some interesting parts of different green spaces in and around London. At this point, you could direct different pairs of students to briefly research each place online to feedback additional information.

Next, hand out Activity sheet 1: Places for different people (p86). Can students read each person's statement and advise them which places in Factsheet 1 might appeal to them and why?

Did you know?

50% of all visits to parks are with dogs, but only 10% with children! How can we get more children into parks?



DISCOVER:
DOES LONDON'S WILDLIFE LOVE OUR LOCAL AREA?

Activity 1 Part 2

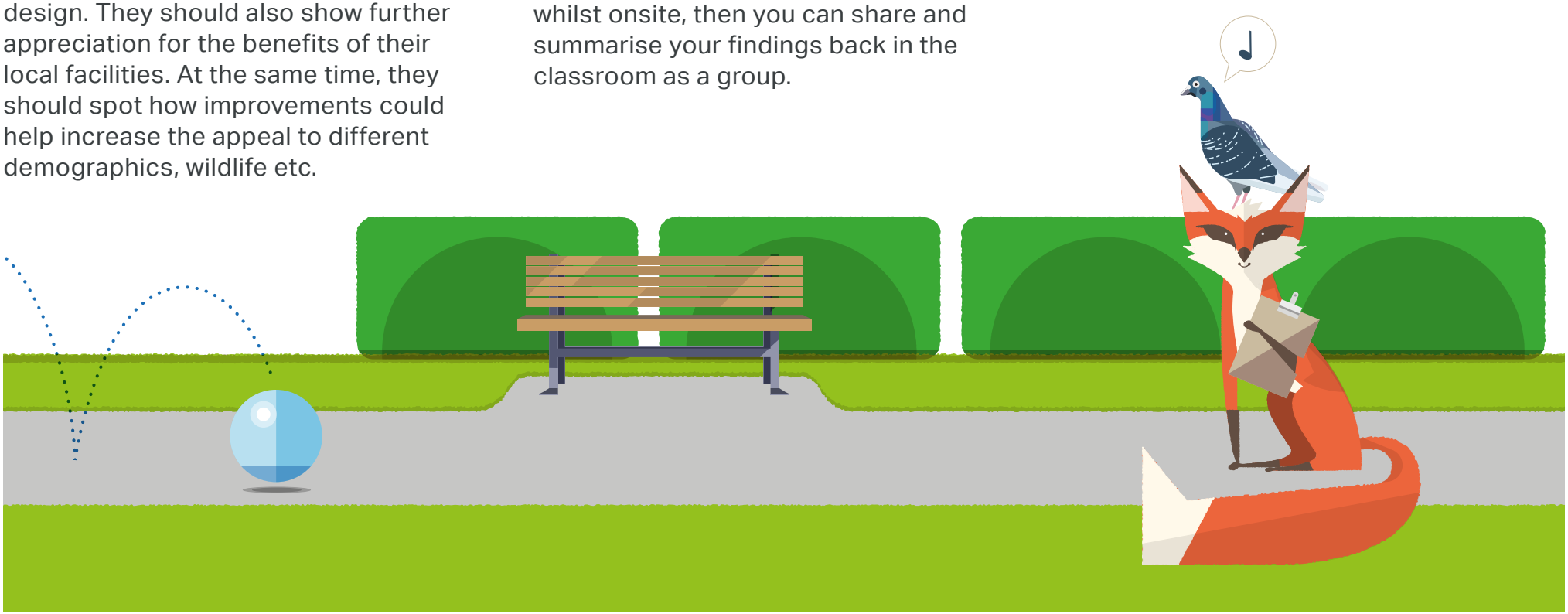
Choose a local green space and study its features. Ideally this should be a visit to the place in question. However, if time doesn't allow and the space is well-known to your students, you could do this using photo prompts. In doing this, they should start to think critically about park design. They should also show further appreciation for the benefits of their local facilities. At the same time, they should spot how improvements could help increase the appeal to different demographics, wildlife etc.

Share Activity Sheet 2: Surveying our local park (p87) before your visit. Students will be specifically thinking about the park's main features, activities you could take part in onsite, how welcoming the park is to wildlife / the wildlife it protects and key demographics it appeals to.

Children should complete the survey whilst onsite, then you can share and summarise your findings back in the classroom as a group.

Why not:

Write to your local councillor or MP about improvements you'd like to see to a local green space based on your survey findings?



EXPLORE:
DISCOVER ONE OF LONDON'S GREATEST SUCCESS STORIES

Queen Elizabeth Olympic Park
Stratford, E20 2ST

www.queenelizabetholympicpark.co.uk

Queen Elizabeth Olympic Park was developed to host the London 2012 Olympic and Paralympic Games. Today it's a thriving new lifestyle hub where people, industry and wildlife happily co-exist in the east of London. It offers a whole wealth of outdoor learning opportunities for primary schools as one of London's biggest outdoor classrooms. Read about opportunities and ideas for schools here:

www.queenelizabetholympicpark.co.uk/the-park/things-to-do/for-schools

A relevant resource pack investigating the park's human and physical geographical features can be found at:

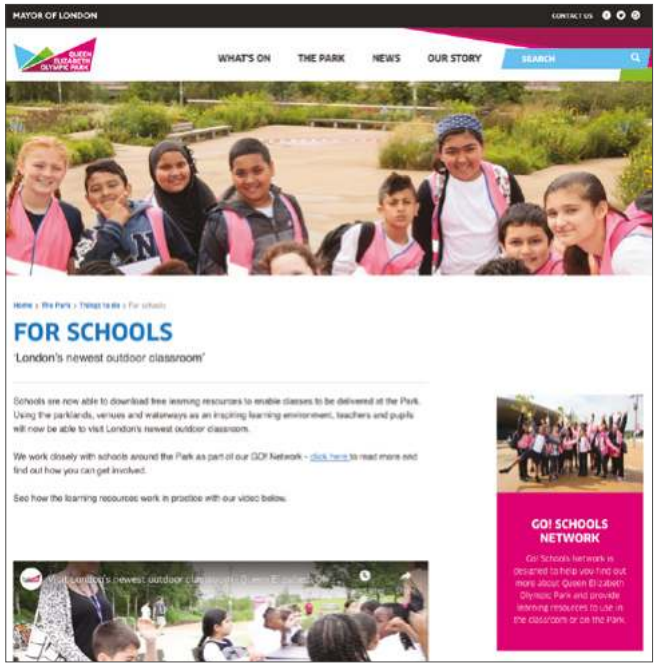
www.queenelizabetholympicpark.co.uk/-/media/qeop/files/public/learning-trails/ks2-geography.ashx?la=en

Similarly, to aid self-guided visits, you can download a range of trails, including an Adventure in the Park for children.

www.queenelizabetholympicpark.co.uk/the-park/plan-your-visit/trails-and-tours

Did you know their playgrounds are also multi-award winning?

Queen Elizabeth Olympic Park adopted Play England's 'Design for Play' guidelines, ensuring every type of play is catered for.



CONNECT: PLAN AND PRESENTATION

Duration: 60-120 mins
(You may want to split across two sessions)

Setting the scene

Now we have learned about some of the key aspects that go into the planning and design of green spaces, and we have experienced the look and feel of a successfully designed space, it is time to take on a design challenge and plan our own. Students will need to work in small, mixed ability groups (four pupils would work well).

Activity 1: Fen's perfect park design challenge

Part 1: Following a design brief

Present the children with Activity Sheet 3: Design Brief (p89) and discuss the key points as a class. Share lots of ideas to encourage creative thinking. For example, providing for an active lifestyle could be an urban obstacle course or climbing walls. It doesn't just have to be a running route or lido. This thinking could meet the design brief requirement of giving your park a unique selling point. Or you could design a landmark or sculpture, like the ArcelorMittal Orbit at Queen Elizabeth Olympic Park.

Encourage each group to annotate their design brief with ideas which they can whittle down into firm decisions. Talk openly about ideas for sharing the workload within the group (for example you could designate different 'jobs'). Remind the students about best practice for collaborative teamwork.

Teachers may wish to browse the following document which outline the facts and figures for the Queen Elizabeth Olympic Park.

www.queenelizabetholympicpark.co.uk/-/media/key-facts-summary-july-2019-v1.ashx

CONNECT:
PLAN AND PRESENTATION continued

Part 2: Creating your design

As outlined in the design brief, students can either draw out a 2D plan or create a 3D model – this may depend on time and resources. You may challenge the students to work to a certain scale (upper KS2), but you should emphasise the creativity and reasoning behind their decisions.

Direct the groups accordingly as to how they should communicate their design thinking. It could be detailed labelling as part of a key, or you may ask them to prepare a presentation document to accompany their design.

Why not:
Encourage students to design a logo for their new park which could feature as branding on their design documentation?

PART 3: An exhibition of ideas

Build in a time where students can exhibit their designs to each other and other members of the school community. You may decide to vote on a winning design or invite in somebody with design credentials (local architect, councillor/MP, artist) to pick out a favourite.

Why not:
Challenge students to redesign a small space in your own school grounds. Arrange for them to present their plans to the school leadership team or governing body for consideration. This should include any fundraising ideas that could make their ideas financially viable?

FACT SHEET 1:
INTERESTING FEATURES IN LONDON'S GREEN SPACES

Wildflower Meadow
Brockwell Park, SE24 9BJ

Children's Zoo
Battersea Park, SW11 4NJ

Bathing Ponds
Hampstead Heath, NW5 1QR

Princess Diana Memorial Playground
Kensington Gardens, W2 2UH

Kyoto Garden
Holland Park, W11 3RZ

FACT SHEET 1:
INTERESTING FEATURES IN LONDON'S GREEN SPACES continued

Serpentine Pavilion
Hyde Park, W2 2UH

Isabella Plantation
Richmond Park, TW10 5HS

CrossRail Place Roof Garden
Canary Wharf, E14 5AR

Serpentine Boating Lake
Hyde Park, W2 2UH

ACTIVITY SHEET 1:
PLACES FOR DIFFERENT PEOPLE

Using Fact Sheet 1, decide on an interesting park feature to advise each person to visit:

I would like to take my toddler somewhere they can take part in active play to wear them out for nap time!

MY ADVICE:

I am really interested in learning more about urban wildlife. Where could I go to find out more or volunteer?

MY ADVICE:

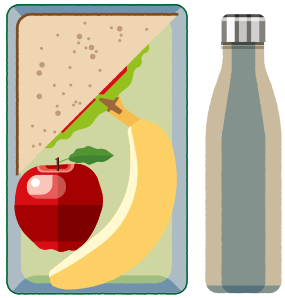
Is there somewhere I can go to meditate and relax? It must be calm and tranquil.

MY ADVICE:

I want a fun activity to do with friends at the weekend – something active and a bit different!

MY ADVICE:

I feel so claustrophobic in my office all day in the Docklands. Is there somewhere I can go to eat my lunch that will revive me and connect me back to nature?"



MY ADVICE:

ACTIVITY SHEET 1:
PLACES FOR DIFFERENT PEOPLE continued

Now choose two of the remaining places and write about who they might appeal to and why.

PLACE	WHO WOULD IT APPEAL TO?	WHY WOULD IT APPEAL TO THEM?
1		
2		

ACTIVITY SHEET 2:
SURVEYING OUR LOCAL PARK

Name of group:

Name of park/green space:

What key features can you see?

What activities can you take part in here?

What groups of people does this park appeal to and why?

How is wildlife being welcomed or protected here?

What's the best thing about this park?

What improvements could be made?

ACTIVITY SHEET 3:
PERFECT PARK DESIGN BRIEF

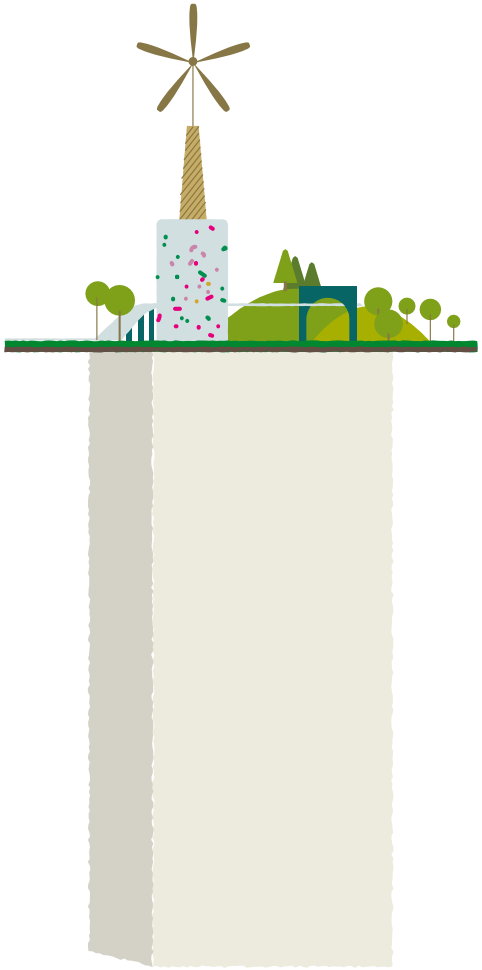
Your challenge is to plan the perfect park using everything you've learned through this unit about appealing to both people and nature, encouraging an active lifestyle for healthy mind and body and creating an iconic space for London.

Your design must include features that:

- appeal to families and people of all ages
- encourage unwinding or relaxation
- enable people to take part in sports and fitness activities
- support increasing London's tree population
- welcome wildlife into the space
- make your park unique to others

You can present your group's design as a 2D plan or 3D model, but it must be accompanied by written information about how and why you made your design choices.

Good luck!



NOTES

CREDITS

The GLA would like to thank the following organisations for their collaboration in creating Wild About London:

Want to explore London and help make our city greener, healthier and wilder? Find out more on the London National Park City website:
www.nationalparkcity.london

To join the London National Park City Schools network, visit
www.nationalparkcity.london/schools-network

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"Teaching about, in and for nature is more important than ever. Knowing where to start and what to teach can be tricky, but this inspiring resource is full of ideas, guidance and support to give children opportunities to learn about and look after nature."

Daniel Raven-Ellison PGCE
London National Park City Founder & Geography Educator

www.london.gov.uk/curriculum