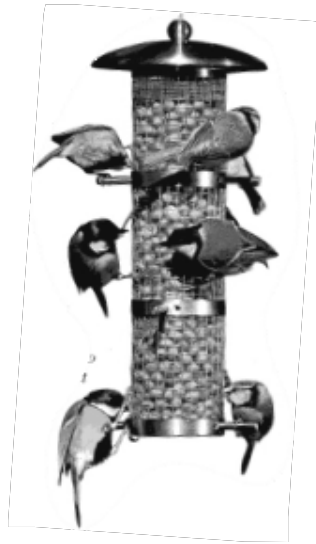


Conservation and You



KS1 Workbook for Teachers

With curriculum links to Art and Design,
Design Technology, English, Geography,
Information Technology, Math, PSHE and
Science

Activity 1: Gone Forever?

Curriculum Focus - English, History, Geography, Maths, Information Technology

Basic Activity

Curriculum Focus - English, History, Geography

Key Curriculum Links

English -

- En2 Reading
 - Opportunities for Reading strategies
 - Breadth of Study 7a

Geography -

- Geographical enquiry and skills 2a, 2d
- Knowledge and understanding of places 3d, 3e

History -

- Knowledge, skills and understanding 1b, 2a

Introduce the concept of extinction with your class using a series of dinosaur pictures. Virtually all children will understand the concept that dinosaurs existed on the earth long ago, but they are not around today.

Expand the discussion by asking the children to name any other animals that they know are extinct. Write up a class list, and particularly highlight any animal the children mention that has become extinct in modern times.

Read the worksheet entitled 'Dead as a Dodo' with students taking turns to read out a paragraph. This is a challenging passage, so students will require reading assistance and you may need to reread the worksheet several times as a class.

Also, read the questions at the end of the worksheet as a class, so that all the students understand what is required of them.

Extension Activity

Curriculum Focus - Maths, History, Geography

Key Curriculum Links

Maths -

- Ma2 Number
 - Using and applying number 1a, 1c
 - Number and the number system 2b
 - Calculations 3a, 3b
 - Solving numerical problems 4a
 - Processing, representing and interpreting data 5a

Geography -

- Geographical enquiry and skills 2c, 2d

History -

- Knowledge, skills and understanding 2b

As a class, look at a world globe (or flat map). Locate Portugal, Africa, Mauritius and India on the globe.

Get students to colour in the location of these 4 places in different colours on the blank world map provided at the end of the activity.

Students should then think about the route they think the Portuguese sailors would have taken to reach India, stopping at Mauritius. They should also plot this onto their maps.

As a class discuss, the distances the sailors had to travel. Students should think about why it was necessary for the sailors to stop for food and water at some stage during their journey. Remind students that in 1598 there would have been no refrigeration or electricity.

Presenting the students with a series of maths problems to solve as if they were the Portuguese sailors can extend this discussion. For example, a problem could be set out as -

DAYS ON BOARD	WATER USED per person
Day 0	0 litres
Day 10	5 litres
Day 20	10 litres
Day 30	15 litres
Day 40	20 litres
Day 50	25 litres
Day 60litres
Day 70litres
Day 80	40 litres
Day	45 litres
Day	50 litres

DAYS ON BOARD	WATER USED per person
Day 110	55 litres
Day	60 litres
Day ...	65 litres
Day 140 litres
Day 150	75 litres
Day 160 litres
Day 170	85 litres
Day 180	90 litres
Day 190	95 litres
Day 200	100 litres
Day 210	105 litres

1. The sailors have left the chart incomplete. Fill in any missing numbers in the above table.
2. It takes 200 days to reach India. How much water would the ship have to carry for each person to reach India safely?
3. If the ship can only carry 50 litres of water per person, on what day will they run out of water?
4. How much water would the sailors have to get when they refuel?

This is just a sample. Any number of problems can be set along these lines involving food and water. The difficulty of the problems can be set to the level of the students.

Extension Activity

Curriculum Focus - English and Information Technology

Key Curriculum Links

English -

- En3 Writing
 - Composition 1b, 1c, 1d, 1f
 - Planning and drafting 2b, 2c, 2d
 - Handwriting and presentation 5b, 5h
 - Language structure 7a, 7b, 7c
 - Breadth of study 9d, 11, 12

Information Technology -

- Finding things out 1a, 1b
- Developing ideas and making things happen 2a
- Exchanging and sharing information 3a, 3b

Students should use the 'Dead as a Dodo' comprehension as a basis for producing a report on the Dodo. With the teacher's assistance, students should write the story of the dodo in their own words.

To assist the students, write up paragraph introductions for the students to follow. For example -

The dodo was found

Until 1598, no human had

In 1598, sailors from

The sailors hunted the dodo

The dodo was easy to catch because

By 1661,

The students should type up their completed reports and print them out to be pasted onto a display.

Their poster should also contain a picture of the dodo and a map of the world showing Portugal, Africa, Mauritius, India and the route taken by the Portuguese sailors.

Dead as a Dodo

People say 'dead as a dodo' because there is not a single living dodo left on the earth. They are extinct.

Once long ago though, there were many thousands of dodos living on a tiny island called Mauritius. You can find Mauritius on a map just east of Africa.

In the year 1598, sailors from a country called Portugal were sailing to India to buy diamonds and spices.

On their way, they spotted Mauritius from their ships and stopped there to get fresh water and food. They were the first people ever on Mauritius.

The dodo could not fly, so he was easy to catch. The sailors hunted him for food.

Soon, more sailors stopped at Mauritius on their way to India. They also hunted the dodo for food.

The sailors also brought animals with them, like dogs, cats, rats and pigs. These animals took over the island, leaving the dodo with no home.

By the year 1861, every dodo was dead.

It took only 63 years for the dodo to become extinct.

Dodo Questions

1. What island was the dodo from?
2. In what year did people first see the dodo?
3. Why did the sailors hunt the dodo?
4. Why was the dodo so easy for the sailors to catch?
5. By what year was the dodo extinct?
6. How many years were there between people first seeing the dodo and the dodo becoming extinct?



Activity 2: Here Today, Gone Tomorrow?

Curriculum Focus - English, PSHE and Art

Basic Activity

Key Curriculum Links

English -

- En1 Speaking and listening
 - Listening 2a, 2b, 2c, 2d, 2e
 - Group discussions and interactions 3a, 3b, 3c, 3d, 3e
 - Breadth of Study 9a, 10a

PSHE -

- Developing confidence and responsibilities 1a, 1b
- Preparing to play an active role as citizens 2b, 2c, 2e, 2g
- Breadth of opportunities 5a, 5c, 5d, 5g

Initiate a discussion on the concept of endangered by asking the class to think about the story of the dodo again, and deciding if an animal could still become extinct today.

Discuss the things that led to the dodos' extinction, like hunting, introduced predators and pests, and destruction of habitat.

Show the class pictures of well known endangered animals like the tiger (hunting, and habitat destruction for timber, housing, mining and farms), the koala (introduced pets like cats and dogs killing koalas and habitat destruction for timber, housing, mining and farms) and the rhino (hunting, habitat destruction for timber, housing, mining and farms).

Use these well known animals to illustrate how modern animals are still facing the same threats as the dodo and thus, are endangered and in danger of becoming extinct.

Read the worksheet entitled 'The Macaw' to your class to highlight a species at risk of becoming extinct. After each bold point, use the focus questions to initiate class discussion on the various points.

You will see Macaws on your trip to Birdworld.

Extension Activity

Curriculum Focus - English

Key Curriculum Links

English -

- En1 Speaking and listening
 - Drama 4a, 4b, 4c
 - Breadth of study 11a, 11b
- En3 Writing
 - Composition 1a, 1b
 - Planning and drafting 2d
 - Handwriting and presentation 5b, 5h
 - Language structure 7a, 7b, 7c
 - Breadth of study 9a, 12

Using class discussion on the points raised by 'The Macaw' as a starting point, write a short play on the issues facing the macaws as a class. Although the teacher will necessarily be the main author, students putting forward their opinions should genuinely generate the script.

The script should include a role for all the protagonists, including native Indians, tourists buying souvenirs, a person buying a pet macaw, wealthy businessmen mining the rainforest, and normal people buying furniture, using paper etc.

Each character can explain what they do, why they do it and how it impacts on the macaw.

A narrator can explain why what they are doing is harmful and offer possible alternatives, such as -

- Native Indians - offer aid to establish other food sources, like farmed meat.
- Tourists buying souvenirs - could they find other souvenirs not made from animals, such as a painting of a Macaw?
- Person buying a pet - could they buy a more manageable pet? Could they make sure the bird was hatched in England, not stolen from the wild?
- Wealthy business - could they recycle instead of mining? Could they leave at least part of the rainforest for the macaws? Could they replant after mining?
- Normal people - Could they recycle paper, turn out lights, walk more to minimise the resources taken from the rainforest? Could they only buy furniture taken from replanted forests?

At this stage, it does not really matter if the solutions the students come up with are practicable in the real world. It is only important that they are creative in suggesting possible alternatives and that they realise changes can be on personal level, as well as worldwide level, to improve the environment.

Extension Activity

Curriculum Focus - Art

Key Curriculum Links

Art -

- Exploring and developing ideas 1a
- Investigating and making art, craft and design 2b, 2c
- Knowledge and understanding 4a, 4c
- Breadth of study 5a, 5b, 5c

Create a rainforest backdrop for the macaw play by covering a wall with white card.

Draw silhouettes of trees, vines, flowers, macaws, other birds and animals, and anything else you can think of from the rainforest onto transparency sheets. Focus the silhouettes onto the white card.

Students can trace the lines of the silhouettes onto the card to create a rainforest scene. They should then decorate the outlines with a variety of materials such as paints, pictures cut from magazines, twigs and leaves, feathers, and material to recreate the colours of the jungle.

As a class also discuss and design the costumes people will wear for the play, including clothes, headdress and make-up. Whatever is chosen should be practical so it can be sourced easily, for instance borrowing clothes from homes and making headdresses out of cardboard.

The Macaw

The macaw is a beautiful, brightly coloured bird.

Find a picture of a macaw in a book and show the class.

The macaw is from a place called South America. South America is made up of many different countries.

Find South America on a map and point out all the different countries.

The macaw lives in something called a rainforest. A rainforest has many trees and brightly coloured flowers.

Find a picture of a rainforest to show the class.

The macaw is an endangered animal.

Do you know what that means?

One of the reasons the macaw is endangered is because it is hunted for food.

Do people still hunt for food in England? Why not? Can you think of any way to help the people of South America so they would not need to hunt the macaw for food?

The macaw is also hunted for its feathers. These are used to make traditional Indian headdresses. The Indians have been making these headdresses for thousands of years.

Show a picture of a traditional headdress. Do you think it is fair to make them to stop?

Sometimes tourists also buy feathers for souvenirs.

Would you buy a souvenir made from a hunted animal?

Sometimes the macaw is hunted, captured and taken to countries like England to be a pet.

Would you buy a pet stolen from the wild? Do you think it is O.K. to buy a pet if it was born in England? If you do have a pet, what are some of the things you need to do to take care of it?

The macaw is also endangered because his home is being cut down. There are many reasons trees are cut down. Two reasons are making paper and clearing land to mine. Coal is mined to make electricity and oil is mined to make plastic and petrol.

How do things like recycling paper, walking instead of taking the car, and turning off lights help the macaw?

Trees are also cleared all over the world, including England, for making wooden furniture like chairs, tables and doors. However, in England, the trees are grown back.

Do you think its better if a place grows its trees back after cutting them down?

If people don't help the macaw soon, it will become extinct.

Do you know what extinct means? Do you think it would be sad if the macaw became extinct?

If everybody works together, we can save the macaw from becoming extinct. People can make sure macaws survive for the future.

Think about all the things people, including you, can do to help save the macaw.

Activity 3: English Birds in Trouble

Curriculum Focus - Geography, History, Information Technology, and PSHE

Basic Activity

Curriculum Focus - History, Geography

Key Curriculum Links

Geography -

- Geographical enquiry and skills 2d
- Knowledge and understanding of places 3c
- Knowledge and understanding of environ change 5a

History -

- Historical enquiry 5a, 5b
- Breadth of study 6a

Ask the class to name all the English birds that they know. Use pictures of common English birds to help.

Expand the discussion by asking the class if they think any English birds are in danger of becoming extinct or endangered, or if they think it is just an issue faced by exotic birds like the macaw.

To help them find out if English birds are declining, the students should survey older members of the community to get first hand opinion. Grandparents are ideal for the survey, but parents or teachers will suffice if necessary. The survey sheet entitled 'What was England Like When You Were Young?' can be used to form the basis of the survey. Alternatively, you may want to design your own survey as a class.

After the students have completed the surveys for homework, collate the class results into a bar chart.

Look at the results as a class. Discuss how each factor surveyed could affect bird populations in England. For example, if your survey revealed that less people in England now have gardens, prompt the class to think how that could be detrimental to birds.

Extension Activity 1

Curriculum Focus - Geography and Information Technology

Key Curriculum Links

Geography -

- Knowledge and understanding of environ change 5a, 5b

Information Technology -

- Finding things out 1b, 1c
- Developing ideas and making things happen 2b

Set up a series of cause and effect statements based on the class survey.

For example-

more people = more houses = less trees = less birds
more people = more rubbish = less birds

However, leave out the more or less part of the statement for the students to fill in based on the survey and their understanding.

The statements can be set as a written worksheet or put onto disk for the students to retrieve and manipulate. If the activity is computer based, the students should also insert up and down arrow images to indicate more or less.

Students should save their work into a file so that they can retrieve it to use in the next activity.

Extension Activity 2

Curriculum Focus - PSHE

Key Curriculum Links

PSHE -

- Developing confidence and responsibilities 1a, 1b
- Preparing to play an active role as citizens 2a, 2c, 2e, 2g, 2h
- Breadth of opportunities 5a, 5c, 5d, 5g

As a class, discuss with students their personal feelings towards the decline of British birds. How does it make them feel to think that when they are adults, robins and sparrows could be extinct?

Retrieve and look at each of the cause and affect statements from the previous exercise. As a class, think about each statement. Discuss any ideas the students have on how they can help change the situation, both as an individual and as a part of the school and community.

Again as a class, use the student's ideas to develop an action plan for making changes. Write these ideas up on a card to be pinned up in the classroom. As the topic progresses, students should assess their success at meeting the plan.

Ideas for the plan might include environmentally conscious things like recycling more, walking more, turning off lights, and using heaters less. It might also include plans for making the school more bird friendly by installing feeding stations, nest boxes or even growing a bird garden.

The next activities expand on these ideas.

What Was England Like When You Were Young?

Sit down with an adult, like your grandmother, and talk to her about what England was like when she was your age. Ask her the questions below, and put a tick in the box to mark yes or no.

	Yes	No
Do you see less birds than you did when you were young?		
Are there more people around now than when you were young?		
Are there more houses around now than when you were young?		
Do as many people have gardens now as they did when you were young?		
Did people use poisons in their gardens to get rid of pests when you were young?		
Are there as many ladybirds, bumblebees or butterflies around as there were when you were young?		
Are there as many cars around as there were when you were young?		
Do people throw more things away now than they did when you were young?		

Activity 4 – Is My School Environmentally Friendly

Curriculum Focus – Maths, Geography, PSHE, English, Maths, Information Technology

Basic Activity

Curriculum Focus – Maths, Geography and PSHE

Key Curriculum Links

Maths –

- Ma3 Space, shape and measure
 - Using and applying space, shape and measures 1b, 1d
 - Understanding measures 4c
 - Breadth of Study 1a, 1b, 1d, 1g

Geography –

- Geographical enquiry and skills 1b, 1c, 1d
- Knowledge and understanding of environ. change 5b

PSHE –

- Preparing to play an active role as citizens 2c, 2g, 2h
- Breadth of opportunities 5a, 5e, 5h

Discuss the areas around school the students' think they should look at to make sure the school is being environmentally friendly. Things to look at should include-

- Are lights and other electrical appliances being switched off when the room is empty?
- Are things being reused or recycled whenever possible?
- Are kitchen and garden wastes being mulched or composted?

Once the class has chosen a list of things to look at, divide the students into auditing teams. Each team can be given an area to audit. For instance –

- An 'electricity wastage' team can be sent around the school with a list of rooms, making note of any room they find with lights or electrical appliances left on. They should keep a tally of how many of each type of thing was left on.
- A 'recycling team' can look through bins (with rubber gloves on), making note of the things that have been discarded that could have been reused, like large containers, or recycled, like paper. The team should keep a tally of how many of each type of thing they find.

- A 'mulching team' can look through the kitchen bins and garden bins (with rubber gloves on) for any vegetable product that could have been mulched. The team should weigh what they find.

Back in the classroom discuss the team results and think about how things could be improved. For instance -

- The 'electricity wastage' team could
 - Talk to the teacher in charge of any room in which lights were left on about why they should not waste electricity. They could ask the teacher to assign a student to check the lights at the end of the lesson.
 - Design posters for around the school asking people to switch off electricity and why it is important.
 - Conduct similar audits once a week and report how classes have improved at each assembly.
- The 'recycling team' could
 - Contact their local council (with the teacher's help) asking if recycling bins can be installed in the school. Many councils also have a school's waste action officer that could also be of assistance.
 - Design posters for around the school explaining what can and can't be recycled and why it is important.
 - Talk to different departments around the school to see if they could reuse any of the waste (e.g. could the art department use containers for storing paint, could the maths department use bottle tops for counters etc.)
 - Conduct similar audits once a week and report how classes have improved at each assembly.
- The 'mulching team' could
 - Set up a small-scale worm farm to illustrate how mulching reduces waste. Appendix 1 contains instructions for setting up a worm farm.
 - Talk to the kitchen staff and the gardening staff about the importance of mulching, and find out if they would be willing to support a mulching program. Then talk to the principal about purchasing large-scale worm farms for the school (many councils will help schools finance this type of project). Also, talk to the gardeners about setting up a compost heap for larger waste. These work in the same way as a wormery, but will attract other animals in addition to worms.
 - Design posters to explain to other students how a worm farm works and why it is important, to be displayed on the worm farms themselves.
 - Conduct similar audits each week and report how the mulching program is going at each assembly.

Extension Activity 1

Curriculum Focus - Geography and PSHE

Key Curriculum Links

Geography -

- Geographical enquiry and skills 2a
- Knowledge and understanding of places 3a
- Knowledge and understanding of environ. change 5b
- Breadth of study 6a, 7a

PSHE -

- Preparing to play an active role as citizens 2a, 2c, 2f, 2g, 2h
- Breadth of opportunities 5a, 5f, 5h

For this activity, you will need to blow up map of the area around the school to A3 size and pin it up on the classroom wall. Find the grid reference for each of your students' houses. Type up a list showing each student's name, their street, and the grid reference and pin it up next to the map.

Also, print out a set of small images (to be stuck onto the map) of different ways of getting to school - a picture of a shoe for walking, a picture of a car and a picture of a bus.

As a class, discuss how each student gets to school. Give students the appropriate image to colour in and write their name on.

Then get children to come up and, with teacher assistance, find their street on the map by looking at the grid reference. When they have found their street, they should pin their transport on the street.

When everybody has pinned on his or her pictures, study the map as a class and discuss things like -

1. What is the most common way of getting to school?
2. Does anybody live on the same street?
3. Who travels the furthest? Do they drive to school?
4. Who lives closest to school? Do they drive to school?
5. Do any people who drive live close together? Could they share lifts?
6. Do any people who walk pass the house of someone who drives? Could they walk together instead?
7. Does the school bus go past anyone's house that drives? Could they take the bus instead?

The class should try to work out the most environmentally friendly way of everybody getting to school each day.

If you think parents will be receptive, the students can, with their teachers help, discuss this plan with their parents to see if they can improve school transport for the better.

However, schools should talk to parents before carrying out this activity if they intend to actually encourage school families to adopt the transport plan.

Activity 5: Is Our School Bird Friendly?

Curriculum Focus - Geography, PSHE, Science, Design Technology and Maths

Basic Activity

Curriculum Focus - Geography and PSHE

Key Curriculum Links

Geography -

- Geographical enquiry and skills 1a, 1b, 1c, 1d, 2b
- Knowledge and understanding of patterns 4a
- Knowledge and understanding of environ change 5b

PSHE -

- Developing confidence and responsibility 1e
- Preparing to play an active role as citizens 2a, 2e, 2g, 2h
- Breadth of opportunities 5a, 5d

Divide students into groups of about 4. Provide each group with a simple map of the school on which to mark 'bird friendly' sites and the worksheet 'Finding Bird Friendly Areas in School'.

Each group should then do a survey of the school.

After each group has completed the survey, compare the results as a class.

From the results, students should discuss ways in which they can improve the school for birds. This can be as simple or as involved as you wish, depending on school's resources. For instance, you could plan an entire bird friendly area, complete with a pond, food plants, trees and hedgerows. Alternatively, you may simply decide to install birdfeeders and a birdbath.

The extension activities below outline different ways of making your school more bird friendly.

Extension Activity 1 - Building a bird friendly garden

Curriculum Focus - Geography, Science and PSHE

Key Curriculum Links

Geography -

- Knowledge and understanding of patterns 4a
- Knowledge and understanding of environ change 5b
- Breadth of study 6a, 7a

Science -

- Sc2 Life processes and living things
 - Life processes 1c
 - Green plants 3a, 3c
 - Living things in their environment 5a, 5c

PSHE -

- Developing confidence and responsibilities 1e
- Preparing to play an active role as citizens 2a, 2e, 2g, 2h
- Breadth of opportunities 5a, 5b, 5e, 5f, 5h

Designing and building an effective bird friendly garden requires a lot of planning.

First, discuss as a class what you want to achieve with your natural bird site. Write out a set of aims that can act as a checklist (i.e. We would like our garden to provide food and water all year round, attract a variety of birds, provide shelter, be in a quiet area, grow without needing pesticides etc).

Then, invite the school gardener along to your classroom to discuss your aims. The students should present their aims for the area, and the gardener should offer suggestions how they can best be achieved. For example, the school might have a disused area overgrown with bramble. The gardener might be willing to set that area aside as a nature area. Some of the bramble could be left to fruit, whilst some could be cleared to plant a bird friendly garden.

A good garden will have a variety of plants - ranging from small fruit plants like tomatoes, flowering plants like sunflowers, overgrown grasses, and thick shrubbery or trees for nesting and shelter. It should also definitely have a water pond or birdbath, and possibly nest boxes and birdfeeders.

The gardener could give advice on what plants grow best at what time, which plants grow well together, what trees are suitable to plant etc. He can also advise you on how the garden will change as the seasons change.

Using the gardener's advice, as well as researching other sources of information, the class should design a garden.

Throughout the year different students should be given the responsibility of tending the garden under the supervision of your gardener, watering the plants, making sure everything is growing well and replanting areas with seasonal plants as needed.

As a class, observe the garden throughout the year and discuss how successful the garden has been at attracting birds. The students should also discuss how it makes them feel when they see a bird feeding in a garden they planted.

Extension Activity 2 - Bird Feeders

Curriculum Focus - Science, Design Technology, Geography

Key Curriculum Links

Science -

- Sc2 Life processes and living things
 - Life processes 1c
 - Humans and other animals 2b
 - Living things in their environment 5a, 5c

Design Technology-

- Planning, developing and communicating ideas 1a, 1b, 1c, 1d, 1e
- Working with tools....to make quality products 2a, 2c, 2d, 2f
- Breadth of study 5b, 5c

Geography -

- Geographical enquiry and skills 1a, 1b, 1c, 1d, 2b
- Knowledge and understanding of patterns 4a
- Breadth of study 6a, 7a

Putting up bird feeders or a bird table is a simpler undertaking than building an entire bird garden.

As a class, first discuss the nutritional needs of birds. Read the worksheet entitled 'For the Birds' to the class to introduce the idea that, just like humans, birds do not eat the same thing all the time. In fact, most birds have quite a varied diet to meet their nutritional needs.

After reading the worksheet, discuss what types of food the class wants to put out to ensure the birds nutritional needs are met. The discussion needs to consider several things -

1. What type of birds do the class want to attract (and what type of birds frequent the area)?
2. Where will the food come from and is it available throughout the year? Students should talk to the kitchen staff, the principle, and possibly parents, to see where they can source the food.
3. How will they display the food? Below are the instructions for several simple feeders, which can be built by the students individually, and for building a bird table, which would be a class undertaking.

Bird Feeders

Each student should select one of the feeders below to build. They should select the materials they need and build the feeder under teacher instruction.

However, please note that there is no absolute right way to make a bird feeder. Many websites (e.g. www.rspb.org.uk) and books (e.g. Birdfeeder Handbook by Robert Burton) have good ideas and you may wish to make others besides those listed below.

Seed Holder -

- Take an old plastic bottle with the lid on. Insert a stick through the top of the bottle and another part way down. These are for perching.
- Then, punch small holes in the bottle just above the sticks. These are where the seeds will come out.
- Punch two holes in the bottom of the bottle and insert string through them for a tie.
- Fill the bottle with seed or shelled peanuts (a peanut holder will simply have larger holes) and close the lid.
- Hang the feeder up on tree or bird table by the string.

Fruit kebab -

- Take a large sewing needle (fairly blunt is OK) and thread it with thick string.
- Tie a stick to the other end of the string.
- Push the needle through chunks of fruit, and pull right through so that the stick acts as a base.

- When there is enough fruit, simply remove the needle and hang the kebab up on a tree or bird table with the loose end of the string.

Bird Cake-

- There is no set recipe for bird cake. Simply melt down fat or suet and stir in any mix of seeds, peanuts, sultanas, cheese crumbs, oatmeal, cake and breadcrumbs, scraps of meat and even dead insects.
- Punch a hole in the lid of a container.
- Tie a piece of thick string to a stick and then thread the string through the container lid, with the stick acting as an anchor.
- Place the lid in the bottom of a larger container.
- Hold the string straight up and fill the large container with your bird cake mix.
- Hang the left over string loosely over the side of the container and put the container inside the fridge to set.
- Once it has set, turn the cake out. You should have a lovely cake sitting on the lid, waiting to be hung up with the loose string.

Bird Tables

The design brief for a bird table is very simple. The table should -

1. Be about 1.5metres off the ground, either on a stand, suspended from a tree branch, or bracketed to a wall or tree
2. Have a flat tray about 300mm by 450mm
3. Have rims along the base about 10mm high and of about 20 mm thickness
4. Have gaps in the rim at the corners of the table for cleaning and drainage
5. Have hooks attached to the rim for feeders
6. Have an angled roof about 300mm above the tray

The class first needs to decide where the best place for the bird table will be. As a whole class or in smaller groups, use the worksheet entitled 'Bird Table' to survey the school for ideal bird table sites.

Discuss the survey as a class, and select one or more of the sites for a bird table.

Then produce a design plan for the table, including diagrams, what materials will be needed, and what methods will be used. Work together as a class group to construct the bird table.

The class will also have to design a roster to ensure the table is stocked with food, that the food is changed every few days and that the table is washed down at least once a week.

It is essential the students understand that a bird table must be kept very clean to avoid diseases like salmonella and attracting vermin like rats. The area around the table should also be kept clean. If you also have a water dish, that should be scrubbed down at least once a week as well.

Extension Activity 3 - Nest Boxes

Curriculum Focus - Maths and Design Technology

Key Curriculum Links

Maths -

- Ma3 Space, shape and measures
 - Using and applying space, shape and measures 1b
 - Understanding measure 4a, 4c
 - Breadth of study 1a, 1b, 1d

Design Technology-

- Planning, developing and communicating ideas 1a, 1b, 1c, 1d, 1e
- Working with tools....to make quality products 2a, 2c, 2d, 2e
- Knowledge and understanding of materials 4b
- Breadth of study 5b, 5c

The worksheet entitled 'Home Sweet Home - Sparrow' and 'Home Sweet Home - Robin' outline how to make a closed fronted and open fronted nest boxes. You can make the designs suitable for other birds by using the statistics following.

Wood for the -	Starling	Tit	Wren	Blackbird
Floor	15x15cm	15x12cm	10x10cm	20x20cm
Roof	16x16cm	16x13cm	11x11cm	21x21cm
Front wall	16x15cm	16x15cm	100mmx10cm	25mmx20cm
Back Wall	36x15cm	36x15cm	35x10cm	50x20cm
Side wall 1	16x15cm	16x12cm	15x10cm	20x20cm
Side wall 2	16x15cm	16x12cm	15x10cm	20x20cm
Hole for door	52mm - 12cm up	25mm - 12cm up	Open fronted	Open fronted

Divide the class into 6 groups. Assign each group a type of nest box and give each the appropriate 'Home Sweet Home' worksheet.

Look at the worksheets as a class first to ensure all the students understand what is required of them. Then using the worksheet as a basis, each group, with the teacher's assistance, should create a list of materials required to build their box including -

- Size and number of wood pieces
- Joining materials (nails, hinges, glue, etc)
- Tools required (hammer, drill, saw, measuring tape etc.)

Use the worksheet measurements to pre-cut the wood required for each nest box for the students and put it into separate piles.

Once each group has completed their list, they can come and select the woodpile they require by measuring the wood pieces and matching it to their list.

The teacher should then help each group assemble their woodpile into a nest box. However, the students should constantly instruct the teacher where to put nails, hinges, holes etc.

After completing the nest boxes, select appropriate sites around the school and put the nest boxes up as a class.

How Bird Friendly is Our School?

Look around your school for the following bird friendly things. For each thing you find, put a tick in the yes box. With your teacher's help, mark where you found it on your school map.

	Yes	No
<p>Do you have a flower garden? Why- Flowers have seeds and pollen which some birds eat. They also attract insects for birds to eat.</p>		
<p>Do you have any trees? Why- Trees provide birds with shelter and a place to nest.</p>		
<p>Do you have any fruit trees or plants? Why- Fruit is many birds favourite food.</p>		
<p>Do you have any hedgerows? Why- Hedgerows are a good place to hide and nest.</p>		
<p>Do you have a pond? Why- Birds need to eat and drink.</p>		
<p>Do you have any overgrown lawn? Why- Birds eat grass seeds.</p>		
<p>Do you have any overgrown brambles? Why- Birds eat the berries and shelter inside the brambles.</p>		
<p>Do you have a compost heap? Why- Birds will dig in it for worms.</p>		
<p>Do you have a quiet area? Why- Most birds do not like noise very much.</p>		

For the Birds

Write down all the things that you ate yesterday. Your list will probably include fruit and vegetables, meat, bread, dairy foods (milk, cheese, yoghurt) and fats (like butter).

Birds are just like humans. They also need a wide variety of food types to keep them healthy. Below is a list of what birds like to eat, when it is most important that they eat it and why.

Food Type	Why does the bird need it?	Who will eat it?	When should I put it out?
Bread and cake crumbs	Build up energy and fat to keep warm through winter.	Most birds - put some on ground for shy birds like dunnock.	All year - especially winter
Cooked potatoes, rice and pasta	Build up energy and fat to keep warm through winter.	All birds - especially starlings and the crow family.	All year - especially winter
Fruit and berries	High-energy food used straight away. Vitamins for general health.	Blackbirds, starlings and small birds like robins and blue tits.	All year- try to store extra fruit for the winter.
Cheese crumbs	Build up energy and fat to keep warm through winter Calcium is good for bones.	Most birds - put small amounts on ground into leaf litter for wrens.	All year - especially winter
Fats and cooked meat + pet food	Build up energy and fat to keep warm through winter.	Tits, starlings, woodpeckers and crow family.	All year - especially winter
Unsalted peanuts	Build up fat and energy for winter. Oil is good for feathers.	Most birds	Not during the spring as peanuts will choke young birds
Seed mix	Build up fat and energy. Oil is good for feathers. Vitamins for general health.	Most birds	All year

Bird Table

Survey the school for good bird table sites by following the key below.

For each site you look at, put a tick in the box for each bird friendly feature it has.

Also, mark where each site is on your school map with its number.

Bird Table Sites	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6
Close to trees or hedges for shelter						
Not too near anywhere a cat can pounce from (e.g. fences)						
A quiet area						
A place to observe from without scaring the birds						
Close to shallow water						
Total Points						

Home Sweet Home - Sparrow

1. To build a house for a Sparrow, you will need wood matching the sizes below-

Wood for the -	Length of the wood	Width of the wood
Floor	15cm	15cm
Roof	16cm	16cm
Front wall	16cm	15cm
Back Wall	36cm	15cm
Side wall 1	16cm	15cm
Side wall 2	16cm	15cm

2. You will also need to make sure your house has -

1. A Front Door -

What type of door?	Where?	How big?
A circle	15 cm up on the front wall	32mm

2. A roof that can open

- How will you attach the roof?

3. A hole in the bottom for water to drain out

- How will you put a hole in the wood?

3. Make a list of all the things you need to build your nest box.

Don't forget to think about -

1. What wood you will need,
2. What tools you will need, and
3. What you will need to put it all together.

Home Sweet Home - Robin

1. To build a house for a Robin, you will need wood matching the sizes below-

Wood for the -	Length of the wood	Width of the wood
Floor	10cm	10cm
Roof	11cm	11cm
Front wall	50mm	10cm
Back Wall	35cm	10cm
Side wall 1	15cm	10cm
Side wall 2	15cm	10cm

2. You will also need to make sure your house has -

1. A Front Door -
 - Look at how small the front wall is.
 - Attach the front wall to the floor, and your house will have an open front.
2. A roof that can open
 - How will you attach the roof?
3. A hole in the bottom for water to drain out
 - How will you put a hole in the wood?

3. Make a list of all the things you need to build your nest box.

Don't forget to think about -

1. What wood you will need,
2. What tools you will need, and
3. What you will need to put it all together.

Appendix 1: Building a Wormery

You will need:

2 clean, clear plastic fizzy drinks bottles, one thinner than the other, scissors, water, dead leaves, grass cuttings, gravel, peat, sand, black bin liner (large sheet of thick light-proof plastic), and a black bin liner under which to catch your worms

Method for making the wormery:

1. Wash and rinse out both fizzy drink bottles. Cut the top off the fatter bottle.
2. Half fill the thinner bottle with water and stand it inside the fatter bottle. This both helps to keep the wormery cool and stops it from falling over.
3. Put a layer of gravel into the space between the two bottles. Add alternating layers of peat and sand, starting with peat. (Gravel, peat and sand are all available at garden centres.) Make each layer about 2cm deep. Continue until the wormery is almost full. Lastly, add a thick layer of dead leaves and grass cuttings.
4. Put a few worms on the top layer of dead leaves. (see below for catching worms activity) Now wait for them to burrow down into the peat. Encourage the students to wash their hands after touching worms and soil.

Make a cover for the wormery, by wrapping it within a sheet of thick dark plastic through which you can't see the light (remember that worms are used to living underground). This should be big enough to form a tube around the outer bottle. Put the wormery in a cool, sheltered place. The soil should be kept damp, but should not become soaked with rain, as the worms could drown.

Method for catching the worms:

Worms usually only come to the surface of the soil at night, when there are very few birds about and so they are not in danger of being eaten. They particularly like to come to the surface when it has been raining. This is because the rain loosens the soil and makes it easier for the worms to travel through it.

Ask the students to suggest ways to mimic these environmental conditions. Ideally they will suggest watering the ground to create 'rain' then placing a black bin liner over the damp ground to give the illusion of 'night'. Students should consider the problems with the black liner blowing away and so should weigh it down with stones. Check under the plastic every ten minutes or so until worms are found.