

The Wee Green School Pack



**Introduction to creating Wildlife Projects within
school grounds for Nursery & Primary age children.**

Gill McKinnon & Sudheer Carroll

CONTENTS	Page
Foreword	1/1
Acknowledgements	1/2
Why Make a Wildlife Garden?	2/1
The Greening of High School Yards	3/1
Resources: Something for nothing (or for very little!)	4/1
The One-Square-Metre Cornfield	5/1
Raising Native Wild Plants from Seeds The High School Yards Way	6/1
The Flowering Courtyard (Plus window sills)	7/1
Wildlife Garden Mini-Beast Projects	8/1
The Outdoor Aquarium: Frogs	9/1
A Winter Birdfeeding Programme	10/1
Ideas for School Visits related to the Projects in this Pack	11/1
Bibliography	

THE WEE GREEN SCHOOL PACK

Royal Mail and Scottish Natural Heritage are pleased to continue supporting the production of "The Wee Green School Pack". It has proved its worth over the years, and has a valuable place in the delivery of environmental education in Scotland.

For Royal Mail, this initiative compliments the launch of commemorative stamps such as "Fruit and Vegetables" and more recently "Birds of Prey". In addition, we are delighted that a stunning set of Scottish stamps "Scotland" will be available in July 2003. These stamps will highlight examples of areas of great scenic beauty, as well as natural and cultural interest, from across Scotland.

Scottish Natural Heritage is particularly pleased that the pack will now be more widely available throughout Scotland, and that for the first time it is available on CD-ROM, reducing the need to use paper. This project forms part of the support which Scottish Natural Heritage gives for promoting understanding and enjoyment of our surroundings, including school grounds.

We hope that this latest edition of "The Wee Green School Pack" will bring fun and learning in the natural world to many more young people in Scotland.

April 2003



SCOTTISH NATURAL HERITAGE



We are a government body, responsible to the Scottish Executive Ministers, and through them the Scottish Parliament.

We aim to secure the conservation and enhancement of Scotland's unique and precious natural heritage and to help people enjoy it, understand it more fully, and use it wisely so it can be sustained for future generations.

Scottish Natural Heritage and the Royal Mail are pleased to be able to help reprint the **Wee Green School Pack**. Scottish children deserve far more than to play out on dull tarmac and concrete surfaces, especially when their own country is renowned throughout the world for its natural beauty. This pack is a popular and practical guide to what can be achieved even in a small space, with minimum resources and a bit of imagination. Transform your school's outdoor spaces, and take learning as well as playtime outside.

Scottish Natural Heritage want to ensure that children have the best opportunities to discover the wonder of the outdoors, to encourage their innate curiosity about the natural world from watching the smallest bugs in a damp corner of their school yard to the enjoyment of helping in the garden and seeing their garden grow. We believe that such early experiences will help our children value their outdoor surroundings, growing with them as their horizons develop from their childhood neighbourhood to the wilder world of Scotland's natural heritage.

Scottish Natural Heritage encourage better use and enjoyment of Scotland's school grounds, through our School Grounds Grants Scheme, and our support of Grounds For Learning and local school grounds partnerships.

Visit our web site at www.snh.org.uk

Our publications catalogue is available from:

SNH Publications
Battleby
Redgorton
Perth
PH1 3EW

Tel: 01738 444177

FOREWORD

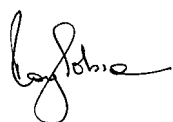
This pack has been designed for nursery and primary teachers to demonstrate ways that environmental education can be delivered. It is based on the experiences of staff and pupils at High School Yards Nursery School.

The project started with a group of children at the school showing interest in the caterpillars they discovered in the school grounds. From their early interest in their environment, the project was developed and shows clearly how the natural curiosity of young children provides, under the guidance of skilled adults, the basis for a rich learning experience. It also shows the role children can play in improving the quality of their own environment.

The work at High School Yards has aroused considerable interest and media attention and this pack has been produced to enable others to provide similar learning opportunities to children in their care while improving their own local environment.

This pack has been produced through a fruitful partnership involving the City of Edinburgh Council, Edinburgh Wildlife Group, Scottish Natural Heritage and Royal Mail. I would like to thank Edinburgh Wildlife Group for their invaluable advice and Royal Mail for their generous financial support which has made this publication possible.

I hope you find this to be a valuable resource for your school.

A handwritten signature in black ink, appearing to read 'Roy Jobson', with a stylized, flowing script.

Roy Jobson
Director of Education
The City of Edinburgh Council

Acknowledgements

The City of Edinburgh Council



EDUCATION

High School Yards Nursery School

The Wee Green School Pack has been financed by Royal Mail and Scottish Natural Heritage.

The Authors would like to thank the following for helping in many different ways:-

Norman Henderson, *Formerly Head of School and Community Education, Midlothian Council*

Dr Walter Stephen, *Formerly Senior Adviser, Personal and Social Education,
Lothian Regional Council*

Wendy Dignan, *Senior Adviser, Nursery/Primary Education, The City of Edinburgh Council*

Fay Pascoe, *Formerly Environmental Education Adviser. RSPB*

The Publishers gratefully acknowledge the right to reproduce photographs

Cover Photograph, courtesy of Scotsman Publications Ltd.

Page 2/2, courtesy of Stephen Archer

All other photographs, Gill McKinnon, High School Yards Nursery School

Some graphics, courtesy of RSPB.

WHY MAKE A WILDLIFE GARDEN?



A Wildlife Garden can be an extremely useful resource for learning, especially in an inner city school where the children have so little contact with the countryside and the world of nature. By sowing seeds, and growing and planting native wildflowers and trees for themselves, the children learn that they can change their own environment for the better.

As the area develops it becomes home to a great variety of plant and insect life. Different kinds of birds visit it from an early stage and, if scrub and tree cover is provided, they will be encouraged to nest there and rear their young. In the course of time small mammals such as wood mice and voles may be able to set up home. The Wildlife Area will also provide many opportunities for the

children to explore, record and measure aspects of nature. It can also provide opportunities for art work, and for other projects over a wide area of the curriculum.

In this pack we aim to share with you some of the activities and experiences that have made our garden at High School Yards such a rewarding project. We hope that you will be encouraged to try some of the ideas out for yourselves when you see how much we have been able to accomplish with very limited financial resources and, indeed, a very small area of outside grounds. The simple instruction sheets in the pack should enable even the least 'green-fingered' of school staff to grow a range of our native Scottish plants to perfection! The different projects that

we describe have been 'site-tested' in apparently unpromising parts of the city and have created joy and interest for a great many Edinburgh children.



THE CITY OF EDINBURGH COUNCIL



HIGH SCHOOL YARDS NURSERY SCHOOL

Open Monday-Friday from 8am-5.30pm

High School Yards Nursery

Off Infirmary Street, Edinburgh

For further information:

Tel No. 0131 556 6536

Fax No. 0131 558 8407

e-mail address: admin@highschoolyards.edin.sch.uk

THE GREENING OF HIGH SCHOOL YARDS



INTRODUCTION

High School Yards Nursery School (The City of Edinburgh Council) is right in the centre of Edinburgh's Old Town, on top of the Flodden Wall. Heavy traffic flows past on the Pleasance and the Cowgate. Our one unobstructed view is a superb one, of Arthur's seat and the Salisbury Crags to the east. The school buildings once housed a university settlement and are built round a small triangular courtyard which serves as an extension to the children's play space, as well as being a container garden and a plant nursery. Its sheltered position makes it a sun

trap - in marked contrast to our Wildlife Garden which is exposed to cold winds off the North Sea. The site for this garden looked most unpromising at the start: a steep slope covered with subsoil and rubble supported a scattering of shrivelled weeds and one or two ailing garden shrubs. Three seasons later the children could look out on colourful wildflowers and growing woodland inhabited by birds and butterflies. A tiny cornfield yields an annual crop and wild fruits ripen in the autumn.

HOW DID THIS TRANSFORMATION HAPPEN?

The whole idea arose from the children's interest in some stripey caterpillars, which they discovered on Nasturtium leaves in a school planter. The creatures were collected, suitably housed and fed, and watched through their metamorphosis from caterpillar to chrysalis to butterfly. They were released outside in the spring. Such was the children's interest that we decided to build upon this small experience of nature. For this the nursery needed expert help and approached the Edinburgh Wildlife Group for advice. Since then Education Officer, Sudheer Carroll, has been working with children, staff and parents at the school to develop the use of the school grounds and to initiate many exciting cross-curricular projects.

THE EDUCATIONAL ADVANTAGES

The creation of a Wildlife Garden at High School Yards is a long-term development with the following aims:

- * To attract wildlife for the children to investigate and study.
- * To give the children experience of physically improving their environment.
- * To give the children a better understanding of their own 'food chain'.

Since 1989, the children have planted trees, shrubs and wildflowers. The Wildlife Garden provides them with a 'real context' for following the process of food production, right through from preparing the ground to baking bread, or making porridge. An approach to health and nutrition follows naturally. The children have also taken part in a winter bird-feeding programme, have observed mini-beasts under their rotting log-pile and have watched many butterflies, ladybirds and spiders in the natural environment which we have been able to develop.

ACROSS THE CURRICULUM

Activities based on the Wildlife Garden stretch across the whole curriculum. Children are learning the basis of Environmental Studies and extending their use and understanding of English Language in the process. For the beginnings of Mathematics the garden provides young children with the experience of colour, shape, counting, matching, one-to-one

correspondence, sequencing and simple measuring. In Expressive Arts, the garden is used for a variety of purposes; at the glueing area all kinds of natural items (eg. thistle heads, autumn leaves, twigs, petals) chosen carefully by the children make interesting and attractive additions to their models. Wild flowers can be collected and pressed

for mounting to create gift cards. Butterflies, birds and mini-beasts often form a starting point for musical items or drama, and bring to life many tales from the story book. The Wildlife Garden activities also have their part to play in Personal and Social, and in Religious and Moral, Education.

THE FUTURE

More wildflowers will be raised by the children and it is likely that crop plants suitable for feeding nursery pets (eg. sunflower seeds) will be grown. We are still actively experimenting with the growing of flax: the children have planted seeds, harvested the crop and processed the fibres.

We have yet to reach the stage of spinning, but we are already planning to grow natural dye plants, and to dye our own linen! The Garden is an ongoing project which has the potential to engage the enthusiasm of children, parents, staff and the local community for a long time to come.



RESOURCES: SOMETHING FOR NOTHING (OR FOR VERY LITTLE!)



People often imagine that a Wildlife Garden, being such a major resource, will cost them more than a school could afford these days. In fact, the project at High School Yards has been carried out on a really low budget. As a fairly small nursery school we are constantly fund-raising, but we also receive a lot of support from nursery parents and the local community, who are both generous and resourceful. Below you will find our suggestions for acquiring practically all you will need for next to nothing. But first, what kind of materials are going to be useful for a wildlife project?

FOR THE OUTDOOR GARDEN

Garden Tools: spade, border fork, rake, trowels, garden shears, secateurs, watering-can (with rose), hose-pipe.

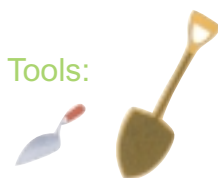
Accessories: slabs (for paths), bird table, nest boxes, old logs (for a mini-beast refuge), sticks/canes, bird-proof netting (to protect crops).

FOR CONTAINER GARDENING

Containers: old ceramic sinks/troughs, wooden half-barrels, window boxes, hanging baskets, large plant pots.

Materials: potting compost or good top-soil, canes, trellis, garden twine, general fertiliser ('Growmore' or a liquid feed).

Tools: spade/shovel (to fill containers), small trowels, weeding fork, dibber, strong scissors.



FOR RAISING PLANTS FROM SEED, MINI-BEAST PROJECT, ETC.

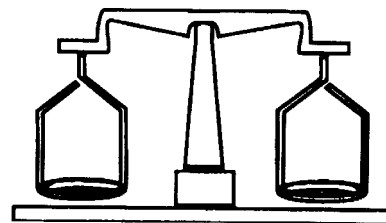
Please consult individual project sheets in this pack.

FOR BREAD MAKING AND COOKERY

Kitchen scales with metric weights, mixing bowls, utensils, saucepans, baking tins and trays, aprons, hand-operated coffee-mill (to grind corn).

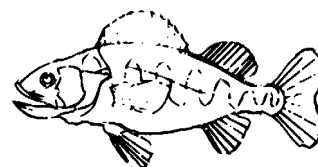
A large proportion of these resources will cost you very little, and those you do have to buy will not all be needed at once. When you have planned your project, send out a newsletter with every child in the school. Tell the children and their families about your exciting new project and ask if anyone's Granny or Aunty is about to move house.

Often, when grand-parents are at the stage of moving to a smaller house or fiat, they have to get rid of most of their garden tools and are delighted to find a useful home for them; you may be surprised to obtain other things from the same source, such as saucepans and scales for your baking corner



Keep a look out for old buildings and houses which are being renovated: you may be able to pick up old ceramic sinks, tiles and slabs. Try writing to distilleries to ask if they can let you have old wooden barrels which have served their purpose - they will often help schools. We were lucky with this; our letter was passed from one contact to another until we received a phone call one day from a gentleman who told us that he had 6 wooden half-barrels to donate to the school, but didn't know Edinburgh very well - could we meet him in a couple of hours at Edinburgh Zoo to collect them? Thus we became proud owners of 6 beautiful new plant tubs!

If you can develop a friendly relationship with your local Parks Department they may be able to let you have top-soil for tubs and planters. The Highways Department sometimes have broken paving slabs which make excellent crazy paving for paths and small garden areas. Classified 'ads' in the local paper can sometimes get you old fish tanks or aquariums. We knew of someone who made up several small glass tanks for our mini-beast project at much less than the shop price. Heavy plasticised cloth for making your own aprons, table covers, etc can be bought as 'quality seconds'.



Don't be shy about visiting jumble and car-boot sales, or second hand shops! Organisations such as the Salvation Army which clear out houses, are a valuable source for many things that you may need: when you visit one of their shops, leave a list and they will usually keep a look-out for you for a minimal charge.



Finally native Scottish plants, shrubs, trees and wildflower seeds can be bought very cheaply from the Edinburgh Wildlife Group (see sources page 11/2. A list of other seed and plant stockists can be found in the Appendix.

GOOD LUCK WITH YOUR RESOURCE HUNTING!

Remember that, by doing it this way,
you contribute to the cause of
Recycling - and please let us know at
High School Yards if you find other useful sources!



THE ONE-SQUARE-METRE CORNFIELD



INTRODUCTION

City children rarely have the opportunity to experience the whole process of production of basic items of diet from farm to table. Bread, or porridge/oat-cakes, provide ideal material for this purpose in the context of studies of countryside and wildlife. All that is needed is to earmark a square plot, one metre on each side, in the school (wildlife) garden, choosing a sunny position.

MATERIALS

1. The 'Cornfield'

Children's spades, digging forks
Rake
Hoe (a short thick stick, or a trowel, will do instead)
General fertiliser (can be organic)
300g seed corn
Packet(s) of seed of annual cornfield 'weeds'
Garden netting and canes/stakes to cage against birds



2. Harvesting, Milling and Baking

Strong scissors (for cutting stems)
Hand-operated coffee-grinder (type with top hopper and drawer)
Recipes and requirements to make wholemeal bread, or porridge/oat cakes, depending on cereal chosen.



PREPARATION & SOWING

The chosen plot must be dug over and the fertiliser mixed in at the rate recommended for general garden use. The soil is next raked to a tilth ready for seed-sowing, which can take place during open weather at any time from the beginning of March. The annual wildflower mixture is scattered over the plot. Drills (furrows) are then drawn parallel across the plot at about 20cm apart, using a hoe and

the rake handle (or pegs and string). The 300g of seed corn is spread evenly and neatly along the drills, which are covered by drawing soil across from either side and patting it down firmly. It is important not to leave any seed corn exposed as this will attract pigeons which are quite capable of finding and consuming the rest of the seed! In fact, it may be better to net the plot at this stage rather than wait

until there are ripening ears. The scruffy city pigeons at High School Yards sat on top of the Flodden Wall watching the children sowing their wheat. As soon as the work was complete, down came the birds and began to dig up the newly planted grain. Our local birds have marked gastronomic preferences and have so far shown no interest in barley or oats!



CARE DURING THE GROWING SEASON

Very little needs to be done until the cereal ripens. If the plot is in any danger of being walked on, it is a good idea to make a temporary 'fence' with

canes and string. In case of prolonged dry weather the crop may benefit from a thorough watering now and again. During the summer the various

wild cornfield annuals will start to flower and attract insect life, which can be utilised in learning projects.

HARVESTING

The corn is ready for cutting once the ears have lost all their green colour and the seeds are hard inside - if you are in doubt it is best to rub out a few grains and test them with your finger nail, or between the teeth.

Grain which is slightly unripe will block the coffee grinder instead of milling into flour. The children will experience no difficulty in 'reaping' the corn with strong scissors, but they should work systematically across

the plot to avoid trampling on unharvested stems. If you want to make a sheaf the straw must be cut near the ground, otherwise it will save trouble just to cut off the ears.

THRESHING

Grain can be extracted from the ears by rubbing them between the palms of the hands. Another way is to lay the ears on a hard table top and put

a wooden rolling-pin over them, or simply beat them with a piece of wood (with due caution!).



WINNOWING

To separate grain from chaff, just blow the chaff away. It is better for children to do this with a simple fan, as

over-enthusiastic ones may get too close and inhale chaff if using their mouth to blow.

MILLING

Do not expect to produce enough flour to make a loaf from such a small plot. It is enough that the children see how flour comes from the seeds of the cereal, and that grinding it requires a quite a lot of energy. The flour which they produce can be com-

pared with, and then added to, a bought wholemeal sample sufficient for the bread recipe. (Similarly, their oat flour can be combined with commercial oatmeal.)



BAKING

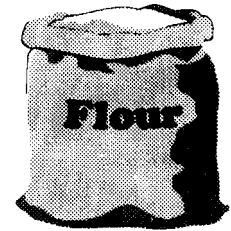
Many bags of shop-bought wholemeal bread flour ('hard' flour) have bread recipes printed on them, as do packets of 'fast action' yeast.

However, it is more interesting and instructive for the children to use fresh yeast from a bakery, rather than the 'fast action' type, because in preparing it they will

learn by experience that they are dealing with a living micro-organism. You can try the simple, whole-meal bread recipe given below, or use one of your own.

RECIPE FOR WHOLEMEAL BREAD

750g wholemeal bread flour ('hard' flour)
2 X 5ml spoons salt
15g butter (or margarine)
450ml warm water (1 part boiling water to 2 parts cold water)
15g fresh baker's yeast



Mix the yeast with some of the water till smooth and then add to the rest of the water to make an even suspension.

Mix the flour and salt together in a large bowl and rub in the butter. Make a well in the dry mixture and pour in the yeast liquid. Stir with a wooden spoon and then knead with the hands until a firm dough results.

Turn out the dough onto a lightly floured surface and knead for 10 minutes until smooth and elastic.

Put the ball of dough into a lightly greased bowl, cover and leave in a warm place to rise until the volume has doubled.

Turn out the dough, knead again for 2 to 3 minutes and divide into loaf shapes (*this amount is enough for a 1kg loaf tin*).

Place in well greased tin(s) and let rise again until doubled in volume. Bake in a preheated oven at 200°C for about 30 minutes, reduce heat and remove when nicely browned.

Turn out of the tin(s) on to a wire rack to cool.

(If the loaf gives a hollow sound when tapped it is ready.)

At High School Yards we went on to try different kinds of bread from other parts of the world (our children come from a variety of racial and cultural backgrounds). An Italian parent from Sicily told us how to make 'St Joseph's Bread', eaten there on special occasions. Here is his recipe:

ROCCO'S RECIPE FOR ST JOSEPH'S BREAD

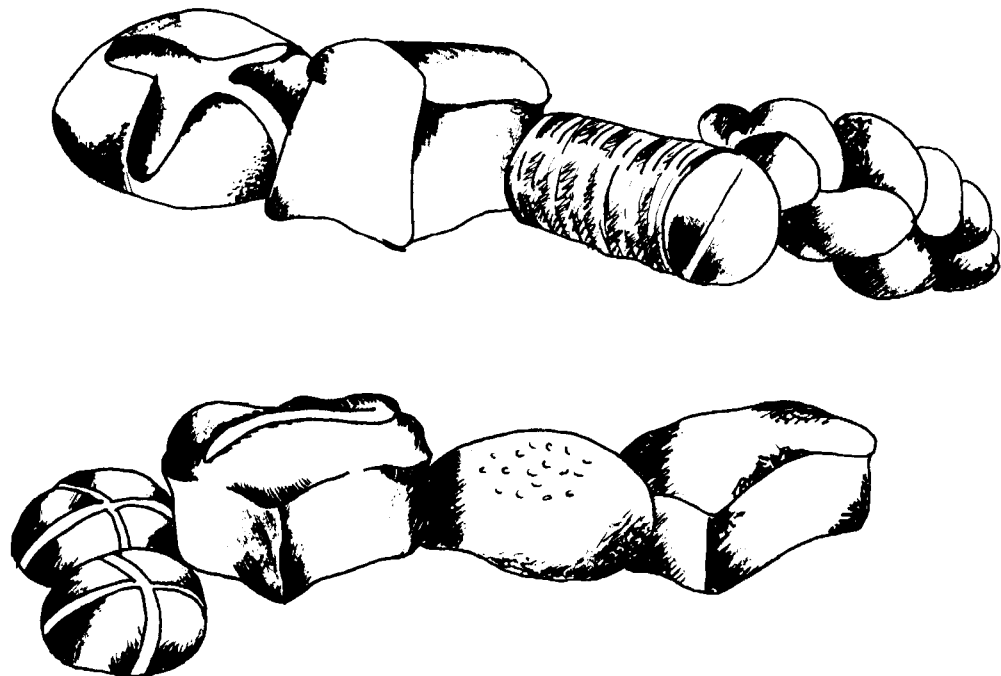
Prepare the dough as above, but using white bread flour. Form the dough into short, wide baton shapes which should be sprinkled generously over the top with sesame seeds. The second rising is done on a well greased baking sheet. Put in a preheated oven as before, but check rate of cooking after 15 to 20 minutes.



SCHOOL PROJECT WORK RELATED TO THE ONE-SQUARE-METRE CORNFIELD

The cornfield can be a valuable adjunct to work in a variety of areas of the curriculum:

- * Old and modern farming. Seedtime and harvest.
Production and use of different grains. The countryside.
- * Milling. Querns. Wind-and water-mills.
Development of powered machinery; visit to local water-mill.
- * Malting and brewing. Distilling. Scottish industries; local visits.
- * Scottish rural life and customs.
- * Wildlife of the fields. Insects. Pollination.
Native mammals and birds.
- * Religious education: New Testament parables.



CEREALS AND HARVEST TIME: A VOCABULARY

We decided to include this word-list as a help for school staff, who may well not be familiar with all the details of life on the land. A quick run through it will certainly put you in a better position to answer those awkward questions which even young children sometimes come up with!

CEREALS are annual grasses which human beings have selected and bred over 1000s of years for their large edible seeds.

CORN in Britain this is a general term for a cereal crop. The kind of cereals which can be grown in the Lothians are:

- BARLEY -** the cereal you are most likely to see in the fields. It is used to make malt for beer and whisky production, and to feed animals.
- OATS -** not seen so often, this cereal was very important in past times. It provides oat-meal for porridge and bannocks (oat-cakes). Oats also give a nourishing feed for horses.
- RYE -** rarely grown nowadays. Rye is the best cereal for cold, wet climates but people do not find it as palatable as wheat.
- WHEAT -** this cereal can be recognised by its solid spike-like seed heads which do not have long 'whiskers'. Wheat provides the flour for the bread we eat every day. It needs a warm site.

There are special words for the things that are done to the corn during and after harvest time:

- BINDING** - tying the cut stems of corn into convenient bundles.
- THRESHING** - breaking up the seed heads to extract the seed. In the old days this had to be done by hand:
- FLAIL** - 2 lengths of wood joined end to end with a leather hinge and used to beat the cereal heads.
- REAPING** - cutting the stems of the corn in the field. In more primitive times this was done with hand-tools:
- SCYTHE** - a great improvement on the sickle, this has a long handle and a straighter blade near the ground. It is held with 2 hands.
 - SICKLE** - a hook-shaped knife with a handle.
- WINNOWER** - separating the cereal seeds from broken material, scales, weed seeds, etc. In olden times this would be done by throwing the threshed material into the air on a windy day, or on a small scale by using a **FAN**.
- MILLING** - this is the process of turning the cereal seeds into meal or flour. The seeds have to be ground up between 2 stones or (nowadays) steel rollers.
- QUERN** - a simple hand-operated mill. In the most ancient form a stone was held at each side and pushed and pulled across another stone - this was hard work! It is called a **SADDLE QUERN**. The querns you will usually see in museums have 2 round stones, resting one on the other. The upper stone has a hole in the middle to feed the seed through, and a socket for a wooden handle to turn it round.

In modern farming the traditional tasks associated with the grain harvest have been taken over by machines, which have gradually become larger and more complex as power sources have improved.

- REAPER -** one of the earliest devices for speeding up the harvesting process was invented by the ancient Celts. Their cereal varieties had very long stems and the fields were full of weeds. They developed a kind of 2-wheeled hand-cart with wooden teeth along the top at the front. When this was pushed through the field it tore off the seed heads which fell back into the cart.
- REAPER & BINDER -** this machine combined the cutting and subsequent tying of the corn into one process. It was pulled across the field by horses and took its power from the movement of its wheels over the ground. Later versions were pulled by tractors.
- THRESHING MACHINE -** this large machine could thresh and winnow the crop, separating the grain and filling it into sacks ready for milling. It was a stationary machine powered by a separate engine. The corn had to be brought to it.
- COMBINE HARVESTER -** this is a large (sometimes very large) self-propelled machine which can move around the field cutting, threshing and winnowing the corn as it goes. It discharges the grain into a trailer pulled by a tractor driving alongside, or directly into a lorry.
- SILO -** a giant tank used to store grain on a large farm, or at a modern flour-mill. A silo usually looks like a tower.

Here are some more useful words associated with cereals:

- AWN** - a name for the 'whiskers' found on the seed-heads of barley and other cereals. Barley awns are brittle when dry and have little teeth along them: the broken bits can be quite irritating to the skin.
- BERE** - an old word for Barley. It is the origin of the word 'beer' (a drink brewed from barley).
- CHAFF** - the dry, scaly parts which surround the seeds in the head. The chaff is removed by winnowing.
- EAR** - the usual name for the spike-like seed head of a cereal.
- GRAIN** - unmilled cereal seeds in bulk.
- LODGING** - sometimes after wet, stormy weather you will see areas of ripening corn laid flat. This is called 'lodging' and makes problems at harvest time. Modern cereal varieties are bred to have short straw which gives them better weather resistance.
- SEED-CORN** - cereal seeds set aside for sowing the next crop.
- SHEAF** - a bundle of unthreshed cereal stems.
- STOOK** - a group of sheaves stacked together in the field. They are rarely seen these days.
- STRAW** - the dry stems of the cereal, left after threshing. Straw can be used for animal bedding and some other purposes, but it is not worth much and has often been burnt on the field to get rid of it. If it is left to rot and then ploughed in, it can pass on fungal diseases to the next crop. The farmer then has to use extra chemical sprays to keep his crop healthy.

NOTE: many of the terms used by farmers have regional variations which cannot be covered in this list

RAISING NATIVE WILD PLANTS FROM SEEDS THE HIGH SCHOOL YARDS WAY



Growing plants from seed has nearly always been part of a school's curriculum, especially with children in nursery and infant classes. Most school staff have their own particular methods and resources for raising plants with children. At High School Yards, the children managed to grow and transplant many different varieties of wildflowers, including Ox-eye Daisies, Common Toadflax and Cornflower. Below is our 'fool-proof' method, described as completely as possible: so, good luck with your gardening!



MATERIALS

1. Half-size seed trays (one for each packet to be sown).
2. Labels and waterproof pen.
3. John Innes No.1 compost (this soil-based compost is designed for raising seedlings).
- 4 Half-tray propagator covers (from all good garden centres).
5. Wooden block (to level compost in trays).
6. Watering-can fitted with a fine rose (small holes).
7. Small plant pots - disposable plastic drinking cups, yoghurt cartons, etc can be used provided drainage holes are made in the bottom.
8. Wildflower seeds (see appendix for suppliers)



PREPARING THE SEED TRAY

Break up any lumps in the compost as it comes from the bag. Fill the tray nearly to the top with loose compost and press it gently into the corners (not all over!) to prevent hollows developing later. Now

fill loosely to the brim of the tray and strike the compost off level. Take the wooden block and use it to press the compost to give an even, level surface: when doing this be careful not to compact the compost too much

- the pressure of one finger on the block is sufficient. Using several quick 'passes' with the watering-can, wet the compost thoroughly.



SOWING THE SEED

Cup the palm of your less dextrous hand and pour some of the seed into it. Use the finger and thumb of the other hand to take pinches of seed and scatter them thinly and evenly over the surface of the

compost in the tray. Don't sow too thickly it will make transplanting the seedlings very difficult later on. Do not cover the seed; most wild plants germinate better when a little light falls on the seeds.

Instead, cover the tray with a propagator lid tied on with garden twine or string (against wind).



GERMINATION

Most seed of perennial wildflowers requires some exposure to low temperatures to bring about germination. The trays, with transparent covers, should be stood outdoors in a shaded site until tiny seedlings begin to appear. Once the seedlings have four leaves the propagator

covers can be taken off. The best time for sowing is from the end of January to the middle of March. Once uncovered, the trays of young seedlings must not be allowed to dry out, or to become totally waterlogged. The time from sowing to germination depends on the type of

plant as well as weather conditions. It may vary from 5 days to 5 months, so be patient!



TRANSPLANTING THE SEEDLINGS

Young seedlings must only be handled by their leaves. Damage to the fragile stem causes sudden death. The seedlings are ready to move once they have 4 or more leaves. Leaving them too long in the tray leads to overcrowding, poor growth and difficulty in transplanting. If there is a good stand of seedlings at the same stage of development, transplant them in one go. Support the compost surface on the finger-tips of one hand and turn the tray upside down to turn out the whole root

mass. Tease out individual seedlings for pricking out (transplanting) by gently breaking up the compost.

Fill each pot loosely to the brim with fresh compost and give it a few taps on the table to settle it. Make a hole for the seedling (with a finger, or an old pencil) to the depth of its roots. Suspend a seedling in the hole and lightly push the compost in around it, adding more as necessary. The seedling must be planted to the same level as

previously - don't bury leaves. There needs to be a small gap between the top of the pot and the compost level to allow for effective watering. If only a few seedlings are ready in the tray, they can be carefully dug out with a suitable implement such as an old blunt kitchen knife, retaining as much root as possible.



AFTERCARE

Keep the seedlings in a sheltered place, out of direct sunlight, until they show signs of continuing growth. Keep them watered in dry weather, and watch out for pests such as slugs in the early stages. They can be planted into permanent positions in the wildlife

garden with hand trowels once their roots just fill the pot and all danger of frost is past. If transplanting has to be delayed for a long time the young plants will benefit from a weekly application of liquid fertiliser.

THE FLOWERING COURTYARD (PLUS WINDOWSILLS!)



INTRODUCTION

Our outdoor growing space at High School Yards is really quite small and we try to make use of every available corner in the Internal Courtyard. Some parts get the sunshine for much of the school day (when the sun decides to shine), while other parts are totally shaded. We found that the key to success lies in growing wildflowers in the places that resemble their natural homes: this is just as important for 'container' gardening as it is in the open ground. Further on, there are some lists to help you, and to ensure that the children will not be disappointed with their gardening work. First though, a few tips on the best sorts of soil to use, and on how to fill a planter for good results. You will feel well rewarded for the small extra trouble when your first summer butterflies arrive outside the window!

THE RIGHT SOIL

Although they are relatively cheap, the peat-based composts widely available from garden-centres do not give good results in outdoor planters. The peat too easily becomes waterlogged and compacted in wet weather; in dry weather it can dry out completely and shrink, making rewetting very difficult.

Ordinary garden top-soil is also a poor choice because it will

contain lots of weed seeds and is unlikely to have the right texture without the addition of other materials; these are going to vary according to the kind of top-soil you have.

Soil-based composts of the 'John Innes' type give a much better medium for plant roots and are sterilised to kill soil-born diseases and weed seeds. Choose 'JI' No.2 or 3 for use in wildflower planters.

It is possible to mix an acceptable compost yourself using 3 parts composted Forest Bark (from garden centres, made by ICI), 1 part JI No.3, 1 part horticultural grit-sand. This may work out a bit cheaper than using plain JI compost and is worth considering if you have several large containers to plant.

PREPARING THE WINDOW-BOX OR PLANTER

You must fix window boxes securely to the building if they are higher than ground floor level. On a sloping window-sill you may have to set the box on wooden wedges to keep it level. The container you use must have drainage holes in the bottom (unless you intend to grow wetland wildflowers!).

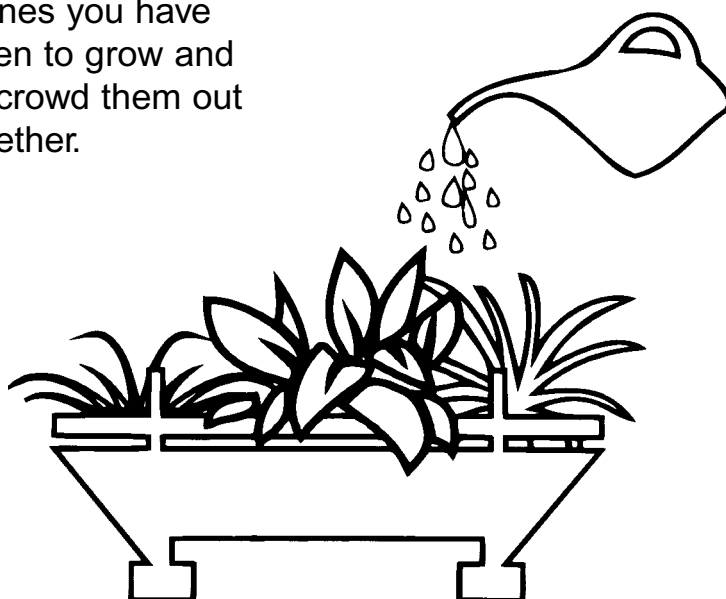
It should also be stood on bricks, low wooden blocks or the like, to ensure that excess water can escape. Cover the holes with broken crocks or stones and add a layer of coarse fibrous material. Then fill with compost to about 3cm below the top edge, to allow retention space when watering. If the children are

planting up with pot-grown wildflowers, put the plants in as the container is being filled with soil. Make sure that the plants finish in the compost at the same level as when they were growing in their original pots: if planted too shallow the surface roots will dry out and die; if planted too deep the stems may rot.

AFTER- CARE

Plants growing in containers dry out more quickly than those in the open ground and the need for watering must be checked regularly, especially in hot weather and when the plants have filled their growing space. If you have used a John Innes compost, feeding should not be necessary for at least 2 months. After that a liquid feed can be used as required (follow the manufacturer's instructions).

Sooner or later 'weed' seeds will arrive in your planter. Remove the seedlings as they appear. Although they are themselves wildflowers, in the good soil of the planter they will compete with the ones you have chosen to grow and may crowd them out altogether.



7 BEST SCOTTISH WILDFLOWERS FOR WINDOW-BOXES

1. Birdsfoot Trefoil (*Lotus corniculatus*.)

A low-growing bushy perennial with heads of red tinged bright yellow flowers all summer. Its name in Scots is 'Craw's Taes', a reference to the clusters of pointed seed pods.

2. Common Rock Rose (*Helianthemum nummularum*)

This small shrubby plant is not a Rose at all. It has round yellow flowers which are individually short-lived but replaced by new blooms in rapid succession. It is a summer-flowering inhabitant of hill pastures and is found on Arthur's Seat.

3. Cowslip (*Primula veris*)

A well-loved relative of the Primrose which thrives in a rather more dry and sunny site. It is becoming increasingly rare in the countryside. The clusters of small, but showy, golden flowers have an apricot scent.

4. Maiden Pink (*Dianthus deltoides*)

The plant forms a low mat of neat, dark green foliage from which stems arise bearing bright pink flowers with serrated petals. It flowers from mid to late summer.

5. Mouse-Ear Hawkweed (*Hieracium pilosella*)

A fairly common, but decorative and long-flowering, plant of stony waste places. Its rosettes of small hairy leaves soon form clumps and produce a succession of 'daisies' in a luminous lemon-yellow, from late spring through to autumn.

6. Thrift (*Armeria maritima*)

A seaside plant, frequently seen on cliff tops in East Lothian, that is well worth growing for its drumstick flower-heads of delicate pink. The foliage resembles miniature tussocks of grass. It can flower all summer.

7. Wallflower (*Cheiranthus cheiri*)

The wild form of the well known Wallflower can be seen growing on the rock faces below Edinburgh Castle. It is an attractive plant in its own right and its deep yellow flowers, born in spring and early summer, are sweetly scented.



7 BEST SCOTTISH WILDFLOWERS FOR A SUNNY PLANTER

1. Common Toadflax (*Linaria vulgaris*)

This wayside plant spreads rather vigorously, but its spikes of yellow and orange flowers are invaluable in late summer and autumn. The foliage is a nice bluish-green as well.

2. Dames Violet (*Hesperis matronalis*)

In late spring the softly hairy leaf rosettes produce tall branching stems with lavender or white 4-petalled flowers. These are very decorative, but the plant comes into its own in the evening when it can fill a courtyard with its perfume.

3. Field Scabious (*Knautia arvensis*)

The soft blue 'pincushion' flower-heads of this plant make a marvellous contrast in late summer with the Common Toadflax. Field Scabious is attractive to butterflies such as the Small Tortoiseshell and the Red Admiral.

4. Goat's Beard (*Tragopogon pratense*)

Goat's Beard has all the advantages of a 'super-Dandelion' without the drawbacks! The leaves are so grasslike that the plant can be hard to find in the wild when it is not in flower. The large 'Dandelion' heads open in the earlier part of the day. The seed 'clocks' are a shiny brown and the individual 'parachutes' are large. The medium-sized, yellow flowers appear in summer.

5. Meadow Cranesbill (*Geranium pratense*)

Some native wildflowers are so decorative that they have been adopted into our gardens as selected varieties, and the Meadow Cranesbill is one of these. The wild form with its large blue-purple flowers in late summer is still well worth growing. The 'exploding' seed pods are an interesting feature.

6. Musk Mallow (*Malva moschata*)

Another valued plant, the Musk Mallow makes a lovely show in high summer. Its delicate pink (sometimes white) salver-shaped flowers have a silky appearance.

7. Ox-Eye Daisy (*Chrysanthemum leucanthemum*)

The Ox-Eye, or 'Gowan' in Scots, is one of the showiest and easiest to grow of wildflowers. The large white, yellow-centred daisies will flower from early summer onwards.



7 BEST SCOTTISH WILDFLOWERS FOR A SHADED PLANTER

1. Bugle (*Ajuga reptans*)

This is a creeping plant with fresh green, shiny, leaves and spikes of blue flowers in the spring. As well, as being pretty it makes a good ground cover and will trail over the sides of a planter.

2. Cow Parsley (*Anthriscus sylvestris*)

Probably the easiest to grow of the 'Queen Ann's Lace'-type flowers, Cow Parsley provides a nice show in the spring with its flat white heads of bloom and has attractive ferny foliage as well.

3. Feverfew (*Chrysanthemum parthenium*)

Although Feverfew is often to be found in gardens as well as in the wild, it is not to be despised as a plant for tubs. It thrives in partial shade and its white and yellow daisies make a good display all summer. It has the bonus of being an important herbal remedy for migraine - eat one or two leaves with bread and butter.

4. Primrose (*Primula vulgaris*)

The delicate pale lemon flowers of the Primrose are a welcome sign of spring, and provided it gets the moist, shady conditions that it loves it is easy to grow.

5. Purple Toadflax (*Linaria purpurea*)

If you are one of those gardeners who sometimes forgets to do the watering on time, this plant is one of the least likely to die on you! It sends up tall willowy spikes of tiny purple 'Snapdragons' in the latter part of the summer, with narrow grey-green foliage. One sometimes finds a pretty salmon pink form.

6. Red Campion (*Silene dioica*)

This plant must be regarded as indispensable. The bright pink flowers are born in branching sprays from spring right through to autumn.

7. Wild Strawberry (*Fragaria vesca*)

It may be one of the smaller native plants but the Wild Strawberry gives double value in the wildlife planter - neat sprays of white flowers in the spring and delicious fruits for the birds (or the gardener!) in summer.



WILDLIFE GARDEN MINI-BEAST PROJECTS



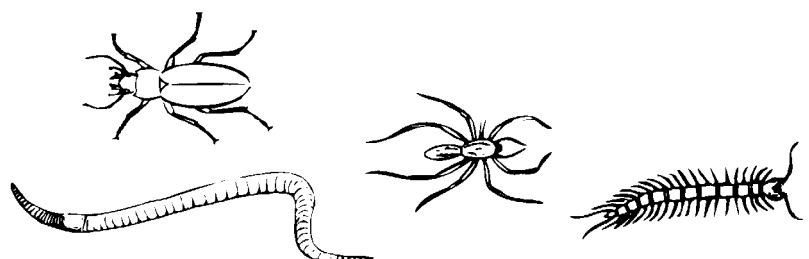
INTRODUCTION

This whole project of a Wildlife Garden arose from the children's interest in mini-beasts. In designing the Wildlife Garden, we have tried to include the kind of homes and food resources, which these small creatures need. The many varieties, which make a temporary or permanent home there offer us a rich source of new educational experiences for the children. The notes which follow are aimed at helping you to increase the range of mini-beasts available in your school grounds, and should provide some ideas for classroom projects as well.

THE LOG PILE

Children love turning over an apparently dead piece of wood and finding the underside covered with secretive "creepy-crawlies". Choose a shady corner of the Garden where you can pile up a heap of old logs and leave them to rot. At least some of the logs should be just small enough for a child to turn over. Logs with some bark left on them are best. This log pile will rapidly (in the course of a few

weeks) become home to a great many kinds of mini-beast. You can expect to have available: slaters (woodlice), spiders, ground beetles, centipedes, millipedes, slugs, snails, and earthworms. As a bonus, colourful small fungi can appear on the damp wood.



ENCOURAGING CATERPILLARS

A judicious choice of Scottish wild plants in your Wildlife Garden should extend the range of butterfly and moth caterpillars which can find homes there. At High School Yards, some small Goat Willows were planted and, in the first summer, no less than three different varieties of caterpillar were collected on them.

Most butterflies prefer a particular kind of plant, while some are limited to a single host species. Scotland's

most colourful native butterfly, the Small Tortoiseshell, depends solely on Stinging Nettles (but you need quite a large patch to get them to lay eggs there). The attractive Orange Tip, flying in the late spring, is one of the "white" butterflies which need plants of the Cabbage Family for their caterpillars. You don't need to sacrifice your Broccoli if you plant Garlic Mustard and Lady's Smock! The leaves of the Goat Willow and Hawthorn attract many

kinds of moth to lay their eggs. Vetches and Vetchlings, which belong to the Pea Family, provide food for the caterpillars of the pretty Common Blue butterfly. Beware of planting Bush Vetch (*Vicia sepium*), however, because its vigorous underground runners will come up all over the garden. You will see some grasses in the plant list: these are needed by butterflies like the Meadow Brown.



A LIST OF WILD PLANTS FOR SCOTTISH CATERPILLARS

COMMON NAME	BOTANICAL NAME	COL.	SEAS.
Birdsfoot Trefoil	<i>Lotus corniculatus</i>	y	sm
Charlock	<i>Sinapis arvensis</i>	y	sp/sm
Cocksfoot	<i>Dactylis glomerata</i>	g	sm
Garlic Mustard	<i>Alliaria petiolata</i>	w	sm
Goat Willow	<i>Salix caprea</i>	g/y	sp
Hawthorn	<i>Crataegus monogyna</i>	w	sp/sm
Hedge Mustard	<i>Sisymbrium officinale</i>	y	sp/sm
Meadow Grass	<i>Poa pratensis</i>	g	sm
Meadow Vetchling	<i>Lathyrus pratensis</i>	y	sm
Stinging Nettle	<i>Urtica dioica</i>	g	sm
Sheep's Fesue	<i>Festuca ovina</i>	g	sm
Sorrel	<i>Rumex acetosa</i>	g/r	sm

KEY:	COL.	=	colour of flower
	SEAS	=	season of flowering
	b	=	blue
	g	=	green
	p	=	purple or lilac
	r	=	red or pink
	w	=	white
	y	=	yellow or cream
	sp	=	spring
	sm	=	summer
	au	=	autumn

Caterpillars can be collected and kept in the class room in any suitable transparent container so that the children can watch their development to chrysalis and emergence as winged adults. The container should have a ventilated lid and be kept out of direct sunlight. Fresh leaves of the host plant must be provided regularly and a reasonably moist atmosphere maintained in your 'vivarium'.

ENCOURAGING FLYING INSECTS

Many kinds of flying insect rely on the nectar and pollen supplied by wild flowers, and your Garden should contain a good selection of these. Honey Bees, Butterflies and Moths need nectar, whereas wild Bumble Bees feed on pollen which they also take for their larvae. Hoverflies,

named for their ability to 'hang' in one position in the air, visit wild flowers in large numbers and need blooms with a flat, open shape such as Corn Poppies and the members of the Daisy Family. Among the Hoverflies you can find different species which mimic wasps and bees (hoverflies

have no stings themselves). Always try to include a plant or two of Wild Angelica in the Garden because it is a magnet on warm summer days for the orange Soldier Beetle, which congregates for mating on the flower heads.



A LIST OF WILD PLANTS TO ATTRACT FLYING INSECTS

COMMON NAME	BOTANICAL NAME	COL.	SEAS.
Angelica, Wild	Angelica sylvestris	r/w	sm
Birdsfoot Trefoil	Lotus corniculatus	y	sm
Butterfly Bush	Buddleja davidii	p	sm/au
Clover, Wild Red	Trifolium pratense	r	sp/sm
Cowslip	Primula veris	y	sp
Dame's Violet	Hesperis matronalis	w/p	sm
Hemp Agrimony	Eupatorium cannabinum	p	sm/au
Ox-eye Daisy	Leucanthemum vulgare	w	sm
Primrose	Primula vulgaris	y	sp
Scabious, Devil's-bit	Succisa pratensis	b	sm/au
Scabious, Field	Knautia arvensis	b	sm/au
Thistle, Melancholy	Cirsium helenioides	p	sm
Thistle, Watted	Carduus acanthoides	p	sm
Valerian, red	Centranthus ruber	r	sm

KEY: as for previous plant list: see above.

SNAILS



These creatures with their unusual life-form are of great interest to young children and can be kept in the classroom for short periods. Outdoors the snail needs damp shady conditions during the daytime and enough calcium in the environment for building its shell; this is no problem at High School Yards, where the garden is surrounded by old buildings. If you think there

is a problem in your particular Wildlife Garden, bring in some lumps of old concrete and dump them in a shady corner. An old glass fish-tank makes a good, indoor, snail environment. It will need a removable lid to prevent the snails from escaping. Cover the bottom with a layer of damp soil with twigs, stones and decaying leaves. The snails will need fresh lettuce leaves, and other soft,

juicy vegetable matter to eat. If the inside surface of the glass at the front of the tank is painted with a thin mix of flour and water the children can watch the snails crawling across it, eating as they go. Children should be encouraged to look out for snail's eggs, so that these can be observed and their development recorded.

A WORMERY

Earthworms are another kind of mini-beast whose activities we have watched in the classroom. An ideal container for worm watching would be a fairly deep and narrow box with front and back made of clear plastic or glass, but any transparent jar or small fish-tank will suffice. Fill the container with layers of moist earth separated by thin layers of sand, rotting leaves, peat compost, etc. Several worms can be kept in this for 10 days or so before

returning them to the outdoor environment. The worms will burrow and eat their way through the different layers, creating small tunnels and gradually mixing the materials together. The worms will also drag small pieces of plant material underground if these are left on the surface.

If a worm is carefully removed and laid on a sheet of paper the children can work out how it moves. Gently stroked from head to tail with a finger tip the

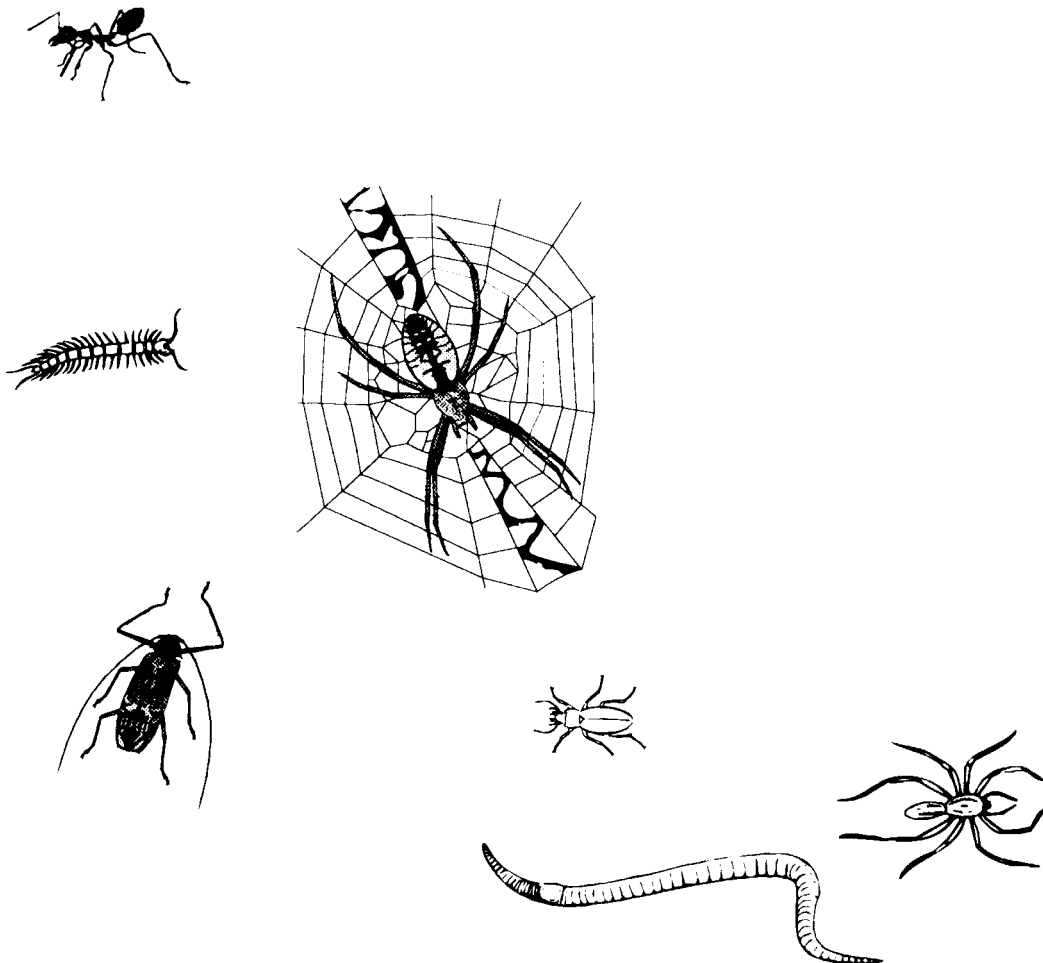
worm feels smooth, but stroked in the other direction it feels slightly rough. Tiny stiff hairs enable the worm to hold on while it propels itself through the soil by contracting and extending its body. These hairs can just be heard (by those with sharp ears) scraping on the paper as it moves forward.

A NOTE ABOUT MINI-BEASTS AND WILDLIFE GARDENING

Please remember that a Wildlife Garden should not be tidied up in autumn as much as an ordinary garden - hibernating (and non-hibernating) creatures need some plant material for winter shelter. Leave some old hollow

stems about. Although wildflower meadows have to be cut and the cuttings taken away in autumn, don't cut closer than 10cm. You can leave one or two clumps of 'caterpillar grasses' (such as Cocksfoot) uncut

somewhere in the garden for any overwintering caterpillars of the Meadow Brown.



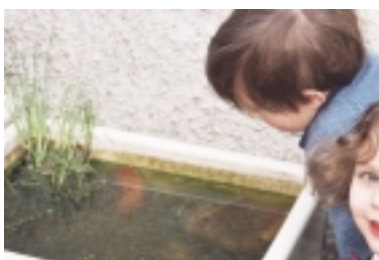
THE OUTDOOR AQUARIUM: FROGS



INTRODUCTION

Children love “messaging about” with water and those at High School Yards are no exception. The small creatures that inhabit a watery environment have an equal fascination for them (not to mention the educational value), but real ponds are far too much of a hazard for small children. This project sheet explains how it is possible to use an old sink or similar container as a home for tadpoles and other pond creatures. Our children named it the “outdoor aquarium” and it is tucked into a shady corner of the Internal Courtyard, a good point when space is at a premium. When under direct observation by children, it is always supervised by an adult, and at other times can be viewed through the window.

SETTING UP THE AQUARIUM



The ideal container is one of the old-fashioned ceramic sinks with a flat bottom and straight sides; it need not be very large. Such sinks are widely available from the renovation and demolition of old buildings. You will also need 4 blocks of some kind to raise the sink off the ground a bit so that it can stand level (otherwise the drain outlet will be in the way). Seal the plug hole so that it is water-tight and cover the bottom of the sink with a layer of gravel. Next, create a

‘cave’ by supporting a large flat stone horizontally on other stones. This is an ‘air-raid shelter’ for tadpoles (see below)! Now you are ready to fill the sink with water. Tap water is perfectly OK but leave the filled sink for 24 hours before adding any plants and animals to allow the chlorine in the water to disperse.

PLANTING

All pond creatures depend on plant life for their survival. Under-water plants provide oxygen and food, so your success depends on an adequate planting, even in a small container. Canadian Pondweed, *Elodea canadensis*, is readily available from larger garden centres and from aquarium suppliers, but other hardy 'aerators' are just as suitable.

Ideally, a bunch of aerator shoots is tied together at the bottom with a small weight added and dropped into the water, but in a small sink a good bunch of loose stems can be put in as they are. You need enough aerator plants to half fill the container. The Outdoor Aquarium will look more attractive if you put a shallow-water, aquatic flowering plant in a

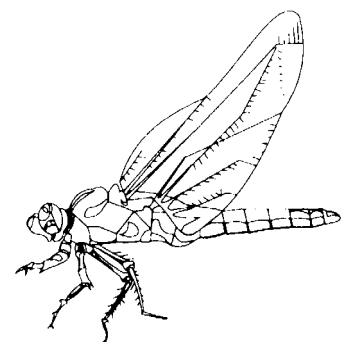
small, plastic, planting basket in one corner. Try to choose a native Scottish plant for this, and remember to use a proper 'aquatic compost', or your sink will turn green with algae and all the creatures in it will eventually die! Aquatic compost is basically a mixture of dried, crushed clay subsoil and sand - you can make it yourself. Don't add fertiliser!

MINI-BEASTS FOR THE OUTDOOR AQUARIUM

This is where you have to be a bit careful if your particular interest is in raising young frogs from frog-spawn collected in the spring. It might seem like a good idea to start the Aquarium with water and mud from an established pond, BUT there are several pond

creatures which relish a good meal of tadpole, for instance the voracious Dragon-fly larva and the Great Diving Beetle. Unless you are sharp-eyed and an experienced pond-dipper avoid mixtures from the wild in a container pond! It is a good idea, though,

to add water snails which will help to keep down excess algae. In fact, you will be surprised to find how many small water creatures will arrive in the course of time under their own steam - this is part of the educational fun.



TADPOLES

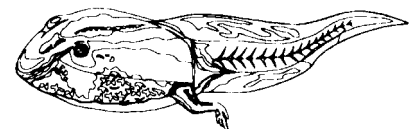
You would be very unlucky if you had no pupils or parents who could bring you some frogspawn in jar in the spring. It is alright to take small quantities of spawn from the wild, but don't take too much. Remember that you are duty bound to return the little frogs to the wild once they are ready to leave the water, unless you have a suitable habitat on your site. Frogs need damp, shaded crannies for shelter and hibernation, and a source of live insects for food; there must be

water nearby. At our Nursery a young frog escaped and found a permanent home for itself in the damp darkness under one of the Courtyard planters. It was discovered alive and well the following spring, to the delight of the children. In the Aquarium the developing tadpoles need somewhere to shelter from outside predators. Now for a confession-the first summer, we did not give our tadpoles a proper hiding place and, to our horror, we

found blackbirds taking tadpoles from the water to feed their young nestlings. We had to console ourselves with the thought that it was a practical introduction to Food Chains. Tadpoles can feed perfectly well on weeds but SMALL amounts of dry fish food may speed their development; Daphnia from an aquarium supplier are a good idea. NEVER put in bits of meat for them because it will turn the water foul.

After Care

Our miniature pond has required very little attention, apart from removing some of the plant growth when it gets too dense. In very dry spells in summer the water needs occasional topping up.



A WINTER BIRDFEEDING PROGRAMME



FEED THE BIRDS!

An early success in our Wildlife Garden was a project to attract more birds into the area during the winter. The Garden still looked rather bare at that stage and all we had seen were the local sparrows and pigeons which are hardly fussy about their diet and surroundings. One of our parents made us a very smart birdtable on a pole with a little roof to keep rain and snow from washing away the food. It was set up in the Garden in full view of the dining room windows.

Every morning, once the cold weather had arrived, a small party of children (well wrapped against the east wind) made their way out clutching the day's supply of mixed bird foods. We also made fatty 'bird cakes' from our own version of the BBC's 'Blue Peter' recipe (see below) in the hope that some Tits might find us at our inner city site. Well, we need not have worried. By the time spring arrived, our eager young bird-watchers had seen 10 different bird species feeding at our table. The dining room became our 'hide', with colourful bird books on the windowsills for identification, and one or two old pairs of binoculars to give the children a really close view. Each day they learnt to count the Blue Tits and Chaffinches, which we recorded on a simple chart. Of course, the greedy city Pigeons kept on coming but the variety of different foods broke their previous monopoly.

STARTING YOUR OWN BIRD FEEDING PROGRAMME

Whether your school grounds are surrounded by fields and woods, or by factories and tenements, this is a simple and sure way to bring an experience of the natural world to the children. From the time of the first major

frosts at the beginning of November until the nesting season at the beginning of March, birds will fly in for a regular daily supply of appropriate foods. Various kinds will visit your birdtable/feeding area and provide you

with opportunities for simple identification, recording and expressive art activities.

THE BIRD TABLE

Birds like an all round view of what may be creeping up on them (cats!). A table raised on a pillar or set on a windowsill also provides a focus for observation and keeps 'mess' to a minimum. Making a table can often be undertaken as a woodwork project

within the school. For a windowsill table it is possible to obtain a self-adhesive, plastic, one-way viewing film which can be applied to the window pane. (This material is called 'Magico' or 'Reflecto Lite' and can be obtained in rolls from good glass

merchants). The children can then watch the birds at close quarters without disturbing them. Birds appreciate the presence of perching points on bushes, walls etc. in the vicinity of the table, where they can wait their turn to feed.

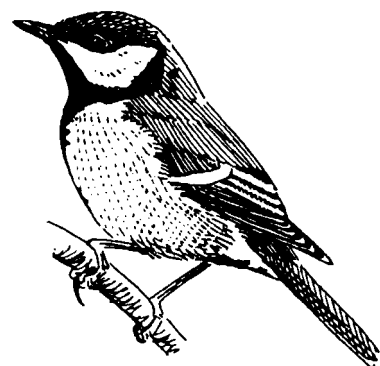


WHAT TO FEED

White bread, stale cake and kitchen scraps will only bring you city scavengers, such as Pigeons, House Sparrows, Starlings and Black Headed Gulls. To increase the variety of visitors you must provide a range of more natural foods. Most pet-stores can sell you 'wild birdseed' in bulk and this makes a good basis for the daily feeding programme.

To this you can add apple, chopped small - the birds will not mind if the fruit is turning brown. Wild fruits collected by the children are an ideal food source: Haws, Elder berries, Rose hips and Rowan berries are non-poisonous for eager young pickers and can be stored in plastic bags. Net-bags filled with unsalted peanuts and/or mixed seeds can be

purchased and hung from the table, or from a nearby tree branch. Several kinds of bird will perform acrobatics hanging from the net and pecking at the contents. Tits enjoy some animal fat in their winter diet, hence the 'bird cake'. Always avoid feeding birds dry rice and salted peanuts. Bread should always be soaked.



WHEN TO FEED

Birds will tend to search most actively for food at the beginning of the day, and replenishing the bird-table should be a regular morning routine. If food is provided each day at the same time, the message will spread

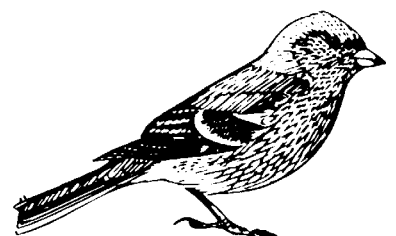
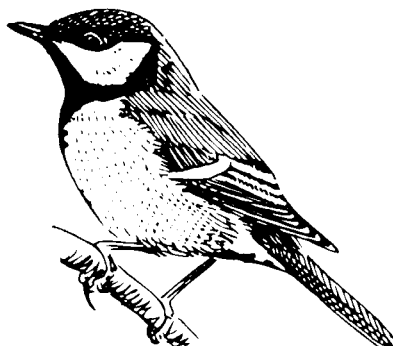
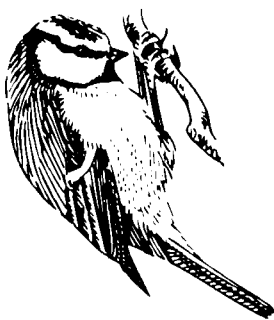
and the birds arrive on cue. However, remember that the birds will come to rely on your food supply and if it fails in severe weather some of them may die as a result. If you are able to provide continuity of feeding over the Christmas

holidays (with a parent or school janitor helping out) it is acceptable to feed from November until March. If continuity is impossible over the Festive period, commence feeding after Christmas.

PROVIDING WATER

Birds need water for drinking and for keeping their feathers clean to insulate them against the cold. If there is no natural supply of water nearby you may decide to put water out regularly in a

shallow dish. In freezing conditions slightly warm water will be needed each morning. NEVER be tempted to use salt or anti-freeze to keep the water from turning to ice!



EDUCATIONAL RESOURCES

As well as providing attractively illustrated bird books and binoculars (RSPB recommend the use of binoculars for children from P4 to P7 upwards). It is suggested that children below P3 might prefer to make their own “binoculars” or “telescope” from junk materials (such as kitchen towel roll

centres) and paint and decorate them. If “Reflecto Lite” material is not readily available, the window can be covered with paper and small holes made in the paper for viewing. Venetian blinds are also useful. Remember to make up a Bird Chart for recording the visitors to the bird-table. This chart

should cover the kinds of birds, and the numbers of each kind, per recording session as a minimum, but you can add other data such as outside temperature and weather conditions to suit your scheme. Obtain colourful bird posters and pictures to complete your ‘observatory’ area.

A RECIPE FOR ‘BIRD CAKE’

Ingredients:

- Broken wholemeal biscuits and breadcrumbs
- Peanuts (NOT salted)
- Chopped nuts (whichever kinds are cheapest)
- Millet seed
- Maize seed
- Sunflower seed
- Elder berries
- Haws
- Rose hips
- Bits of stale cheese
- Chopped apple
- Lard (250g)
- Sultanas

Method:

Melt lard in a heavy pan and mix in the other ingredients bit by bit. Grease the inside of a cake tin or of several smaller containers, eg yoghurt pots and fill with the mixture, crushing down well (eg. with a potato masher).

Place the tin in a refrigerator until the mixture is set firm. Remove the cake from the tin and (if desired) make a hole through it so that it can be hung on a length of string from a branch or from the edge of the bird-table.

** Be aware that some children may have nut allergies. In this case, remove all nuts from the recipe.*

IDEAS FOR SCHOOL VISITS RELATED TO THE PROJECTS IN THIS PACK

There are so many possibilities for visits in Scotland related to wildlife, the countryside and farming that we could not list them all in the space available, even if we wanted. What we can do is give you some useful examples that will encourage you to explore further in your own locality.

The Highland Folk Museum

Kingussie, Highland Region
Tel: (01540) 661307

Rural life in the Highlands and Islands: practice in different areas can be compared and farming of the past is displayed in an interesting way.

Almond Valley Heritage Trust

Livingston, West Lothian
Tel: (01506) 414957

An opportunity to meet a range of farm animals and to see a working water-mill.

Breweries and Distilleries

Locally, in various parts of Scotland

One of Scotland's most important industries is based on the production of barley from the country's farmland.

Water-powered Flour Mills

Locally, in various parts of Scotland

Working mills are an exciting extension to work on the Cornfield Project. We know of mills at East Linton, E Lothian; Livingston, W Lothian; Aberfeldy, Perthshire, Blair Atholl, Perthshire; Maes Howe, Orkney.

Ken-dee Marshes

Dumfries and Galloway
Tel: (01671) 402861

This is a wetland and woodland site with three miles of nature trails.

Auchindrain Open Air Museum

Inverary, Argyll
Tel: (01499) 500235

A complete Scottish farming village has been preserved, showing its relationship with the surrounding countryside.

Vane Farm Nature Reserve

by Loch Leven, Kinross
www.rspb.org.uk
Tel: (01577) 862355

This is a RSPB Educational Development Centre.

GOOD SOURCES FOR SEEDS, PLANTS & TREES FOR A WILDLIFE GARDEN

Alba Trees plc

Email: sales@albatrees.co.uk

www.albatrees.co.uk Tel: (01620) 825058

Lower Winton
GLADSMUIR
East Lothian EH33 2AL

No wildflower seeds

Cheap source for larger quantities of wildflower plants, native shrubs and trees.

BTCV Enterprises

www.btcv.org

The Conservation Centre
Balby Road
DONCASTER DN4 0RH
Tel:(01302) 859522

Wide range of wildflowers, plants, shrubs and trees on mail order.

John Chambers

15 Westleigh Road
Barton Seagrave
KETTERING
Northants NN15 5AJ
Tel: (01933) 652562

Very wide range of wildflower seeds, seed mixes, farm crop seeds. Limited range of wildflower plants and bulbs (on mail order).

Landlife Wildflowers Ltd

Email: info@landlife.org.uk

www.landlife.org.uk

The National Wildflower Centre
Court Hey Park
LIVERPOOL L16
Tel: (0151) 7371819

Wildflower seeds and seed mixes. Good range of wildflower plants on mail order. Teachers' resource pack available.

Edinburgh Wildlife Group

Tel: (0131) 469 3326

Locally collected wildflower seeds.

Native wild plants, shrubs and trees.

c/o Christine Latham
City of Edinburgh Council
Quality Services, Level 2
10 Waterloo Place
EDINBURGH, EH1 3EG

BIBLIOGRAPHY:

SOME USEFUL INFORMATION SOURCES

If you are like us at High School Yards, you will probably have your own favourite reference and story books to do with nature and wildlife. However, there are some books which we found to be so useful when we were developing the projects in this Pack that we would like to share them with you. These titles would certainly help to build on what we have been able to present, and to create your own tailor-made wildlife schemes.

‘Action for Birds Project Guide’ *The Royal Society for the Protection of Birds, The Lodge, Sandy Bedfordshire SG 19 2DL*

‘A Guide to Habitat Creation’ *by Chris Baines & Jane Smart, London Ecology Unit, 125 Camden High Street, London NW1 7JR, 1991.*

‘Corn Rigs & Barley Rigs’ *by Mary Bryden, Spotlight Series No.1*

‘Not Just Haggis’ *by Katriona Hazell Spotlight Series No.3, National Museums of Scotland, 1996*

‘Grounds For Learning’ *A Celebration of school site developments in Scotland by Kate Kenny, Grounds for Learning, Airthrey Cottage, University of Stirling, STIRLING, FK9 4LA*

‘The Green Releaf Primary Project’ *A guide to using plants for informed and extra-curricular activities in school groups. Learning through Landscapes, Third Floor, Southside Offices, The Law Courts, Winchester, Hampshire SO23 9DL.*

‘How to Make a Wildlife Garden’ *by Chris Baines, Elm Tree Books/Hamish Hamilton, 1985.*

‘Keeping Mini-Beasts. Earthworms’ *by Chris Henwood.*

‘Keeping Mini-Beasts. Frogs’ *by Chris Henwood.*

‘Keeping Mini-Beasts. Snails & Slugs’ *by Chris Henwood. Franklin Watts, 12A Golden Square, London W1, 1988*

‘The Scots Kitchen’ *by F Marion McNeil Panther Books/ Granada Publishing Ltd, 1974.*

Various **Project Guides** and **Videos** available from:
Environmental Education Adviser, RSPB, 17 Regent Terr, Edinburgh EH7 5BN. Tel 0131 557 3136. Fax: 0131 557 6275

Get your claws into 2003



Start the New Year in striking style with Birds of Prey stamps, available from January 14th at Post Office™ branches, or by Mail Order. Highlights of 2003's Special Stamp programme include the 50th anniversary of the Coronation, the decoding of DNA, the conquest of Everest and other great feats of exploration, and 250 years of the British Museum.

Don't miss out! Fill in the form below and subscribe to a year's Presentation Packs.

Order your 2003 Presentation Pack subscription below Complete and send this form to Royal Mail, FREEPOST EH3647, 21 South Gyle Crescent, Edinburgh EH12 9PE. No stamp required.

Mr		Mrs		Miss		Other (please specify title)																			
First name					Surname																				
Address																									
															Postcode										
Email					If you would like to receive information by email, tick here																				
Your order					Order no			Price/set			Sets			Total			Gift?								
2003 Presentation Packs					AP0000			£34.95*						£											
															Total amount of enclosed payment					£					
Your payment Please enclose a cheque payable to 'Royal Mail', or complete your card details below																									
Cheque/Postal order						Visa				Mastercard				Switch				Delta							
Credit card/Debit card number																									
Start date										Expiry date									Switch issue number						
Cardholder's signature															Date										

Mail Order 0845 072 2000

Text Talk 18001 0845 072 2000

Sending a gift? Please tick the relevant box at left and state the recipient's name and address on a separate sheet.

***Price** Please note that this price is an estimate based on planned special stamp issues/products for 2003, and was correct at the time of going to press. We will send you account statements on a regular basis advising you of products sent and any further payment required, if any.

1: Prices include VAT at the current rates and remain valid until 31st January 2003, 2: Orders for destinations within the UK are sent postage paid, 3: Royal Mail will try to dispatch Your First Day Cover or Presentation Pack on the issue date, however, this is subject to availability and volume considerations. Items may be dispatched separately, 4: Royal Mail reserves the right to withdraw any item at any time and any payments made in respect of orders not yet processed will be refunded. Royal Mail is a trading name of Royal Mail Group plc, registered in England & Wales, under number 4138203, registered office 148 Old Street, London EC1Y 9HQ. The information you provide will be held under the Data Protection Act 1998 and will be used by Royal Mail Group plc, including Parcelforce Worldwide, Post Office Ltd and Consignia Customer Management Ltd. We may want to contact you from time to time with details of other products and services available from us. If you do not want this, tick here ☐ Stamp Designs © Royal Mail Group plc 2002. All rights reserved.

