



LANGUAGES

MATHEMATICS

SCIENCE

SOCIAL STUDIES

RELIGIOUS
AND MORAL
EDUCATION

ARTS AND
CRAFTS

PE AND
GAMES

DRAMA
AND MUSIC

CELEBRATIONS

TEACHERS' RESOURCE PACK[®]

A Resource Pack of lessons and activities linking school orchards to the Outdoor Learning curriculum



www.forthenvironmentlink.org



INTRODUCTION

Who would have thought the humble apple could influence our lives in so many ways!

At Forth Environment Link we have been working for the past four years to bring orchards back into our schools and communities. Our dedicated team of orchard experts has developed over 180 new orchards, providing support, advice and learning around orchard planting, care, maintenance and harvesting.

Sustaining an orchard as a valuable community resource starts with our young people. Through our work with schools and the development of school orchards we have created a Resource Pack for teachers to help schools integrate their orchards into every aspect of the curriculum.

This Resource Pack is bursting with ideas and suggestions on how to inspire primary school children through outdoor education. Each suggestion offers practical advice and guidance to teachers on how to achieve key curriculum aims through a school orchard, bringing learning alive in every sense.

Take a journey through legends and weather, habitats and songs, shapes and problem-solving, not forgetting Sir Isaac Newton's now infamous fruit and how it shaped our understanding of gravity, and celebrate the humble apple.

As an organisation, Forth Environment Link is passionate about the world around us and how, together, we can make it a better place to live. When we started our orchards' journey we hoped we could make a difference to how orchards were managed and developed locally. Five years on and our small project has blossomed into a nationally recognised initiative. The most valuable legacy from this work will be to see existing school orchards cared for and new orchards developed in more schools.

Learning through doing - from pip to pie!

Clara Walker,
Executive Director,
Forth Environment Link.
October 2014



RATIONALE

“We are giving our children a bank of memories. They will not remember page 33 of the mathematics book, but a vivid outdoor learning experience will last a lifetime.”

Susan Humphries, Coombes School, Reading.

“A fruit tree is one of the best resources for learning and teaching.”

Gillian Forster, Green Routes, Gartmore.



Many schools have planted fruit trees in their grounds and use them extensively. These trees are well maintained and cherished. Others, perhaps because they have not been integrated into the curriculum, can become neglected and a valuable resource lost.

Over many years, with lots of pupils and teachers, we have developed ideas to use orchard trees and their fruit in every-day curricular activities. We are delighted to be able to collate them here for you to share and enjoy.

Rather than link these orchard activities to any particular curricular structure, we suggest age groups and in some cases, the best seasons. An orchard can be just a few fruit and nut trees, but it can greatly enliven and enrich your programme of outdoor learning and provide a very valuable focus for many aspects of Eco-school activities.

Be fruitful and multiply..... and draw and write and sing!

Forth Valley Orchards Initiative
Forth Environment Link, Stirling
October 2014



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LANGUAGES IN THE ORCHARD

Giving a dynamic and lively context for:

- reading, writing, talking and listening
- a wide range of genre: diaries, menus, stories and poems
- creative and functional writing
- discussions and talks



LANGUAGES IN THE ORCHARD

Stories and Legends

Ages 7-12

Rationale

Several stories and legends use fruit as a theme - golden apples, magic fruits, etc. Use orchard fruits as a stimulus for creative writing.

Aims

- To explore stories and legends which use fruit as a theme
- To create own stories which include unusual or magical fruits
- To consider what makes a story a legend and to practise writing in this genre

Resources

Examples of stories and legends eg Sleeping Beauty (look online for examples), group discussion time and writing resources.

Method

- Share a story or legend and discuss what part the fruit plays in the tale - a reward, perhaps of a golden apple, a danger, perhaps as a poisoned fruit, a challenge, etc
- Decide on a theme - a golden plum and a brave hero/ heroine - and set the scene - introducing characters, what happens first, next and the resolution
- Allow time for the stories to develop, then publish them for other pupils with appropriate illustrations



Further Ideas

- Create stories with fruit as inspiration: ruby-red cherries, silver plums, etc
- Make up stories to illustrate how some apple varieties received their names: Jupiter, Lemon Queen, Pig's Snout, Greensleeves, Golden Delicious, Stirling Castle and Bismarck



LANGUAGES IN THE ORCHARD

Poem Shapes Ages 7-12

Rationale

Freeing poetry writing from the need for rhyme, but with the structure of an actual shape can lead to imaginative results.

Aims

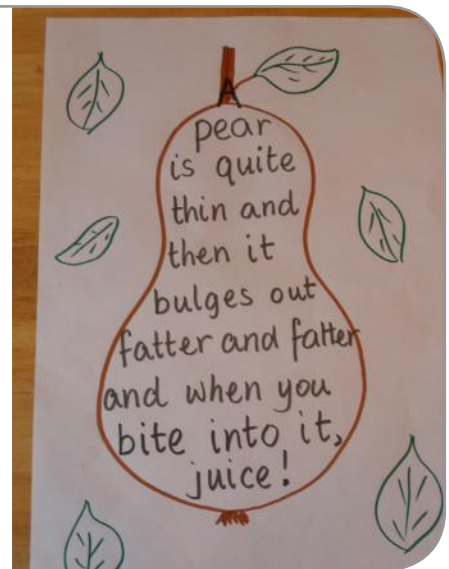
- To create poems in the shape of orchard fruits
- To use the fruit to suggest and inspire the words chosen

Resources

Large fruit outlines - pear, apple, plum or cherry cluster - on A3 paper, fruity wordbank of taste, colour, texture and some real fruit.

Method

- Discuss and compile a wordbank of colours and patterns, shapes, textures and tastes, variety names, insect life, seasons, weather, etc
- Consider how words might fit into a pear shape, eg the stalk might just contain 'A' or 'I' or 'The', then more words can fit in as the shape bulges out
- Explore similes: as tasty as, as rough as, like a....
- When a shape poem has been created communally, set the task of individual or paired writing
- Mount the shape poems as part of an orchard display



Further Ideas

- Create spring or autumn leaf poems, large blossom ones. Draw a bare-branched tree and add trunk, branch, twig, leaf, blossom and fruit poems. Add a bee-shaped one, and maybe some to represent the sun, clouds and the wind

LANGUAGES IN THE ORCHARD

Acrostic Poems **Ages 9-12**

Rationale

The orchard can be used as a stimulus for a variety of writing: acrostic poems are a good way of using language in a structured format.

Aims

- To explore the format of an acrostic poem
- To use the orchard as a stimulus for writing acrostic poems

Resources

Examples of acrostic poems (Appendix 1, p127), time to discuss and draft, display areas and writing materials.

Method

- Explain that each line of an acrostic poem begins with a letter of the chosen word. Show examples
- Invite suggestions of words that are orchard related, perhaps fruit names, textures, colours, or insect life, etc
- Select one word and create a class poem, using, for example, APPLES, JUICY, ORCHARD. Choose words to match the word chosen, remembering that acrostic poems need not rhyme
- Create a display of acrostic poems. Laminate a few and use them to attach to your orchard trees



Further Ideas

- Carry out a similar activity with haiku poems which have three-line structures: 1st line with 7 syllables, 2nd line with 5 syllables and the 3rd line again with 7 syllables (Appendix 1)



LANGUAGES IN THE ORCHARD

Parts of Speech Ages 9-12

Rationale

In creative writing we encourage the use of imaginative verbs, adjectives and adverbs to make the work come alive. Use the orchard for inspiration for parts of speech and writing.

Aims

- To explore parts of speech using the orchard as a stimulus
- To gradually build up, over a week, a bank of interesting words
- To create lively, imaginative phrases and sentences

Resources

4 colours of paper, laminating pockets and laminator, string, orchard trees and writing resources.

Method

- On day 1, discuss nouns. Using one colour of paper, create a bank of nouns relating to the fruit trees: bark, blossom, bees, leaves, clouds, etc. Laminate each one and attach it to a tree with string
- On day 2, using a different colour of paper, carry out a similar exercise with verbs: shaking, rustling, buzzing, etc. Laminate and attach to the trees as before
- On day 3, do this for adjectives: brown, rough, furry, etc
- On day 4, work with adverbs: slowly, lazily, etc
- On day 5, choose words to make great sentences



Further Ideas

- Try the preposition challenge: what can pupils find or see in the orchard which is in/on/under/beside/through/between/above, etc

LANGUAGES IN THE ORCHARD

Opposites Ages 5-8

Rationale

Orchard fruits can be an imaginative stimulus for extending pupils' comparative vocabulary.

Aims

- To create a bank of opposites
- To use these to create sentences and phrases of comparison

Resources

A6 cards (labels stuck onto old playing cards do very well), coloured pens and a range of orchard fruits.

Method

- Begin by creating a wordbank of sizes: big/small, long/short, light/heavy
- Add comparative words: bigger/smaller, etc
- Add words relating to taste and texture: sweet/sour, dry/juicy, crunchy/soft, smooth/rough, etc
- Add words for colour: red/not red, green/not green
- When you have a good list, write them onto the cards and play opposite pairs
- Make sentences using more than/less than



Further Ideas

- Make word sequences: light, lighter, lightest, sweet, sweeter, sweetest, etc, and display on pictures of orchard fruit



LANGUAGES IN THE ORCHARD

Reporting All Ages

Rationale

We use a wide variety of ways to share information from written reports and photographs to email, Facebook and Twitter. Orchard reporting will share news across the school.

Aims

- To practise using a variety of reporting techniques, with the orchard as the theme

Resources

Writing materials, display areas and computer access with relevant programmes.

Method

- Discuss an orchard activity and consider the best way of sharing it with different audiences
- Share orally, initially to the class, then at assembly
- Compose captions for photographs and display them
- Create a storyboard of 6-8 boxes describing the activity
- Write a report using bullet points
- Make up instructions for others to follow the activity
- Create a report for local newspapers, school newsletters, the school website



Further Ideas

- Carry out another activity and share different reporting methods among pupils. Discuss which works well

LANGUAGES IN THE ORCHARD

Surveys Ages 7-12

Rationale

Creating and carrying out a survey can be not only a useful skill, but will allow pupils to find out more about their neighbourhood and parent families.

Aims

- To create an orchard survey for parents and staff
- To collate results and plot the information on a local map

Resources

Writing and word-processing materials, a local map, clip-boards and pencils.

Method

- Practise creating surveys on pupil choices of eg, crisp flavours, TV programmes, colours
- Discuss what information would be useful from an orchard survey: number of fruit trees, varieties, age of trees, amount of crop
- Use word-processing to make a good copy
- Decide on means of surveying: actual visiting around neighbourhood, in school newsletters, on school website etc
- Collate and add information to a local map



Further Ideas

- If the survey shows that someone has a large crop they can't use, discuss options for helping with this, then perhaps juicing or cooking with the fruit, or even collecting to add to compost



LANGUAGES IN THE ORCHARD

Orchard Guide All Ages

Rationale

By creating an orchard guide leaflet, you will ensure that the orchard is well-visited and that knowledge about it is shared.

Aims

- To create a leaflet to guide visitors around the school orchard
- To be able to produce information in an attractive and clear way
- To encourage visitors and pupils and teachers from other classes to enjoy looking round the orchard

Resources

Labels, laminating resources, photographs of the trees, information about each tree, either from school records or from orchard websites.

Method

- Visit the orchard and make sure each tree is labelled with its variety, eg Apple - James Grieve, Pear - Beurre Hardy. Create and laminate labels if necessary
- Number each tree to make a good route to visit each in turn
- Create a route map, then document each tree in turn, giving as much information as possible, including a photograph of the tree and its fruit
- Design a cover, make lots of copies and invite pupils and adults to enjoy using it to visit the orchard



Further Ideas

- Share your leaflet with other local schools and visit each other's orchards

LANGUAGES IN THE ORCHARD

Orchard Calendar All Ages

Rationale

Creating an orchard calendar can be a great way of exploring your orchard month by month to record what is happening. It can also be a good fund-raising exercise.

Aims

- To create an orchard calendar using photographs, drawings and ideas

Resources

An IT programme format to produce a calendar, cameras, photographs, writing and drawing resources.

Method

- School calendars can run from August to July of the next year. Find a suitable format that will allow you to insert information and pictures
- Take a range of photographs which show your orchard at different seasons, and with tasks and activities taking place
- Add interesting information, such as seasonal care, recipes, activities and events, and what can be seen
- Produce the calendar before the end of the summer term so that it will be ready for the new session



Further Ideas

- Display a page from the calendar each month on the school website, and share your orchard activities and ideas with other schools



LANGUAGES IN THE ORCHARD

Orchard Diary **Ages 7-12**

Rationale

A school orchard is a valuable resource and keeping a diary of its progress will be an excellent way of creating a record to pass on to support its care and maintenance.

Aims

- To develop diary-keeping skills
- To monitor and record the progress of the school orchard in diary format

Resources

Cameras, a diary or diary format pages, perhaps on a computer programme, writing materials and a regular commitment of time.

Method

- Choose a specific day and time that you can maintain throughout the session eg 1st Monday at 11.00am
- Photograph each tree and record useful data: height of tree, circumference of trunk, leaves or blossom or fruit, insect life - good or bad, etc
- Add other information such as weather and temperature. Note any maintenance tasks, such as weed growth around tree, damaged branches and pass this on to those who care for the trees
- Display photographs and data on the eco-board



Further Ideas

- Select a few photographs each month, collate them into an orchard calendar and add suggestions of activities and tasks for others to follow. Share across the school and with other schools

LANGUAGES IN THE ORCHARD

Fruity Recipes All Ages Autumn

Rationale

Recipes lend themselves to lots of outcomes: weighing and measuring, health and safety and language skills of discussion, co-operation and reading.

Aims

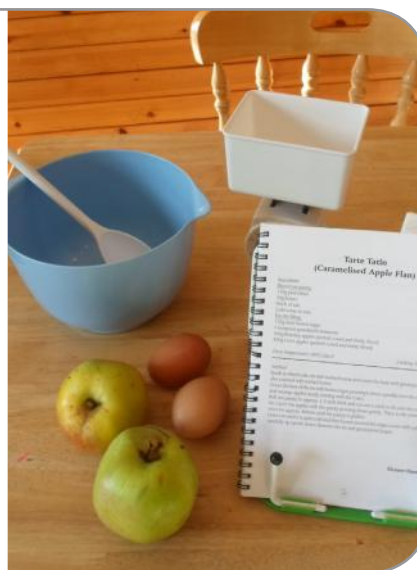
- To use simple recipe formats
- To use orchard fruits in simple recipes
- To record the process and the results

Resources

A selection of recipes from books, magazines or online (see Appendix 2, p128, for ideas), ingredients and utensils as appropriate, and orchard fruits.

Method

- Display a recipe on the whiteboard and discuss its format
- Discuss health, hygiene and the utensils needed
- Choose a simple recipe which will use fruit from your orchard - this is a good way of sharing a little among a large group
- Display the recipe, with photographs and pupil comments and share it in the school newsletter for parents to try at home. Give some to the staff too - good encouragement to use your orchard fruits



Further Ideas

- Collect other recipes and collate them into a booklet to sell for school funds
- Invent a recipe using apples or pears with chocolate or cheese
- Make up imaginative or even silly recipes to practise using the recipe format



LANGUAGES IN THE ORCHARD

Orchards Menu All Ages

Rationale

As your orchard develops, you will be finding lots of ways to use the fruit: fresh from the trees and in recipes. Menus have a specific format and a fruity feast could be fun to imagine, and even prepare.

Aims

- To look at a variety of menus, discussing their format
- To consider good and attractive presentation
- To create a fruity menu for a real or imaginary event

Resources

Recipes from books, magazines or online, samples of menus from as many sources as possible and writing materials.

Method

- Study the menus obtained and discuss the different terms: starter, main course, dessert, etc
- Set groups to find suitable recipes for each part of the menu, including a soup, fish course, cake, drinks, etc
- Create an interesting layout and compile a menu for a fabulous feast
- If a recipe seems feasible, enjoy making it with your orchard fruits



Further Ideas

- Send menu ideas using orchard fruits to the school meals' caterers
- Invite parents to make a more complicated recipe chosen by pupils. Make paper crowns and become royalty for the tasting event

LANGUAGES IN THE ORCHARD

Orchard Advice Ages 7-12 All Year

Rationale

The best way to maintain your school orchard is to ensure that more than one person or group is responsible. Passing on information, either orally or in writing, is a useful skill and will ensure good care.

Aims

- To record activities which ensure good orchard maintenance throughout the school year
- To create clear guidance notes
- To work co-operatively with others to share and pass on knowledge and skills

Resources

Cameras, timetable and advice on orchard maintenance (Appendix 3, p129), garden tools as needed: trowels, forks and garden gloves.

Method

- Discuss the orchard maintenance plan and the tasks which can be carried out by pupils: weeding, planting, picking and monitoring
- As each activity is carried out, photograph the task and the tools used and write clear instructions
- Share all you have done and save in the orchard file
- Try to share information and tasks with the next teacher and class who will take on responsibility for looking after the orchard



Further Ideas

- Create a leaflet with seasonal instructions and photographs. Share among staff and parents, and put on the school website



LANGUAGES IN THE ORCHARD

Ordering Ages 9-12 Autumn

Rationale

For a new orchard, or when adding trees, it is useful to involve pupils in the ordering process. They can research varieties, costs, provenance, and good sources for trees and other resources.

Aims

- To develop research skills
- To help in selecting appropriate resources for your school
- To use cross-curricular links eg science and maths

Resources

Internet access (suppliers' sites) and your budget total for all requirements.

Method

- Consider the following: budget total, site available, number and type of trees wanted (apple, pear, plum, cherry, nuts), flowering periods for cross-pollination and root-stock sizes for eventual tree height and vigour
- Research online to find trees from local suppliers if possible. Compare prices and varieties, and take advice on what grows well in your area. Add on extras: rabbit guards, tree stakes, ties, compost
- Demonstrate how to place an order



Further Ideas

- Research old varieties and those specific to your area: Stirling Castle, Clydeside, Keswick Codling, Norfolk Greening, Cornish Pendragon, etc

LANGUAGES IN THE ORCHARD

Orchard Talks All Ages

Rationale

Confident clear talking requires practice and knowledge. Your orchard and all that happens in it will be a good stimulus.

Aims

- To create opportunities for sharing activities and events using talking skills
- To use the school orchard and its fruit as a stimulus

Resources

A record of activities in the orchard, the programme of maintenance (Appendix 3, p129) and the use of an MS PowerPoint programme if appropriate.

Method

- Discuss and compile a list of talking criteria: clear voice, eye contact, consideration of audience's age and understanding, etc
- Plan a series of opportunities as orchard tasks and activities are done. Use photographs you have taken to make a PowerPoint presentation if appropriate
- Practise in class, with other classes, at assemblies, to other groups and schools as confidence develops



Further Ideas

- Plan a presentation in the orchard as part of your Eco-school inspection. Confident, clear speakers are strong indicators of good progress to assessors



LANGUAGES IN THE ORCHARD

Other Languages All Ages

Rationale

Many schools will start a second language with infant classes and all schools with older pupils. Relevant vocabulary is usually easier to learn, and the orchard will provide lots of opportunities.

Aims

- To explore the words used in other languages for orchards, trees and fruit
- To use these words in a variety of spoken and written work
- To display orchard photographs and activities with captions in chosen language

Resources

A range of pictures and objects showing trees, fruit, leaves, blossom, colours, etc, coloured cards, writing materials and language vocabulary.

Method

- Introduce the vocabulary for common colours and fruits and display them
- Make up cards with these words and their English translation. Play matching pairs games
- Gradually increase the vocabulary, and attach laminated labels of foreign words to the orchard trees
- Research this vocabulary in other languages used by pupils in your class: Urdu, Mandarin, Polish, etc



Further Ideas

- Botanists and gardeners use Latin vocabulary to identify and name plants. Discuss why a common language is useful across the world

LANGUAGES IN THE ORCHARD

Differentiation All Ages Autumn

Rationale

Accepting different views and opinions is a challenge for young people. Orchard fruits can give the opportunity to discuss likes and dislikes and encourage individual choices.

Aims

- To explore and discuss a vocabulary of taste, texture, colour and shape using orchard fruit
- To explore the vocabulary of differentiation
- To value individual opinions

Resources

Apples of different varieties (at least 2 of each), knife, chopping board, compost box, star worksheet (Appendix 4, p130 - reproduce on the interactive whiteboard) and small groups of 3/4 pupils chosen to make tasting choices each time (saves 30 + opinions).

Method

- Look at the shape of each apple and discuss its colours and patterns
- Add the missing opposite words to the star sheet and taking each apple in turn, share small pieces with pupils and record their choice of scoring (0=least, 6=most) with a coloured mark. Join the marks around the star to give the apple's shape
- Repeat with different apples, using contrasts of sweet and sour, green and red, etc and different pen colours for the marks



Further Ideas

- Record this activity by asking pupils to describe their favourite apple using the vocabulary of differentiation, or take a secret ballot and create a graph of choices
- Emphasize that everyone has slightly different taste receptors and there are lots of food choices



LANGUAGES IN THE ORCHARD

Orchard Quiz All Ages

Rationale

Teachers use a variety of ways to revise knowledge. An orchard quiz can be compiled by pupils and used to revise all they have learned about orchards and their wildlife.

Aims

- To create a quiz to revise orchard knowledge
- To share the quiz with other classes as part of an orchard event

Resources

Writing materials, laminating resources, stakes (we used wood saved from old pallets), drawing pins, rewards if appropriate and question suggestions list (Appendix 5, p131).

Method

- Ask pairs of pupils to create questions on an orchard theme: tree growth, seasons, varieties, colours of fruit, insect life, etc
- Ask them to add 2 incorrect answers which are close to the correct one, to make the quiz more fun, for example: "Which insect is best at pollinating blossom? A wasp/bee/spider?"
- Attach laminated questions to stakes and arrange these around the orchard or make quiz sheets on paper
- Challenge all to try the quiz



Further Ideas

- Create a pictorial quiz for infants, for example "Which colour will an apple be? Red/black/blue?"



Your own ideas for Language in the Orchard



MATHEMATICS IN THE ORCHARD

Giving a practical outdoor and indoor context for:

- measure
- co-ordinates, graphs and charts
- numbers and fractions
- compass directions
- problem-solving



MATHEMATICS IN THE ORCHARD

Measuring **All Ages**

Rationale

Measuring is an important skill and integral part of maths. Your orchard trees can be a good resource to give this activity more relevance.

Aims

- To choose the most appropriate measuring tools
- To record a series of measurements, including those suggested by pupils
- To use these as a record of annual growth

Resources

Measuring tools to include tapes, string, metre sticks and trundle wheel.

Method

- Select one tree and, as an example, carry out the following measurements communally: height from base to top of trunk or main branch, length of a long branch, a shorter one, a twig, the circumference of the tree at its thickest point, diameter and perimeter of the area surrounding the tree (ideally one metre kept weed-free), distance between this tree and its neighbour, etc
- Give groups similar tasks with other trees
- Save all measurements to compare next year



Further Ideas

- Measure and record the height of each pupil and each tree. Predict, then later measure, which will grow most in one year and by how much



MATHEMATICS IN THE ORCHARD

Time **Ages 7-12**

Rationale

As well as learning to tell the time, pupils learn about the calendar, time to an event, and historical time. An orchard develops over short and long periods of time. Some trees live for 300 years.

Aims

- To relate lengths of time to the school orchard
- To show how short and longer times affect growth
- To encourage research into specific time periods

Resources

Orchard trees, a current calendar, information of your tree varieties and a camera.

Method

- Carry out activities to raise awareness of a second, a minute, an hour, a day, etc
- Discuss each timescale and fit an orchard activity to each, eg a bee will take about 5 seconds to visit each flower, a bud will take about 1 week to open, an autumn leaf will turn brown in about 3 weeks, an apple will take about 3 months to grow, and leaf mould about 2 years
- Plot a calendar year in the orchard
- Decide how old your trees are, and carry out research into when they were officially registered as a variety



Further Ideas

- Explore cooking times with fruity recipes
- Visit, research and photograph trees in an old orchard
- Find out about the earliest fruit trees to be registered with the Royal Horticultural Society

MATHEMATICS IN THE ORCHARD

Fruity Volumes Ages 7-12

Rationale

Using orchard fruit for jams and juices requires knowledge of the volume involved. Displacement activities are a visual way of measuring volume, and fruit is a good resource.

Aims

- To estimate and measure volumes of liquids
- To use displacement activities to compare and contrast

Resources

A variety of fruit juice packs or cartons, apples of a variety of weights and sizes, a clean cloth, a grater, a liquidiser or smoothie-maker, measuring jars and water.

Method

- Grate an apple or pear onto a clean cloth and squeeze as much liquid from it as you can into a measuring jar. Measure the amount
- Repeat using a liquidiser and compare results
- Estimate how many apples might be needed to obtain a pack of juice
- Fill a measuring jar to 300ml. Put in an apple, gently push it below the surface and take a reading. The water is displaced by the fruit and so gives its volume
- Repeat with different sizes of apples



Further Ideas

- If you have a large crop of apples, borrow or hire a fruit press and make apple juice. Weigh the crop first, then measure the volume of juice extracted. The pulp left is greatly enjoyed by pigs and hens, or can go on your compost heap



MATHEMATICS IN THE ORCHARD

Temperatures **Ages 7-12** **Spring**

Rationale

There are several ways in which your orchard and its fruit can support work on temperature. This can be a seasonal activity to build up a record over time.

Aims

- To develop skills in reading temperatures
- To build up a record of orchard temperatures and to relate this to areas of the world which are suitable and unsuitable for orchard fruit-growing

Resources

Thermometers, minimum-maximum thermometer - window-mounted if possible and recording formats.

Method

- Plan a programme of recording daily temperatures and devise recording sheets
- At the start of January record morning temperatures over a week and calculate the average. Note what is happening in the orchard
- Repeat this activity over the next months, noting how temperature affects growth and tree development
- Look at world temperatures and discuss why some places are too hot or cold for orchard fruits



Further Ideas

- Stew apples and note the temperatures reached. With great care test temperatures when making jams

MATHEMATICS IN THE ORCHARD

Orchard Symmetry Ages 7-12

Rationale

Orchard resources can be a good way to explore symmetry. Young children often start with butterfly paintings. Older children will enjoy using fruit and leaves.

Aims

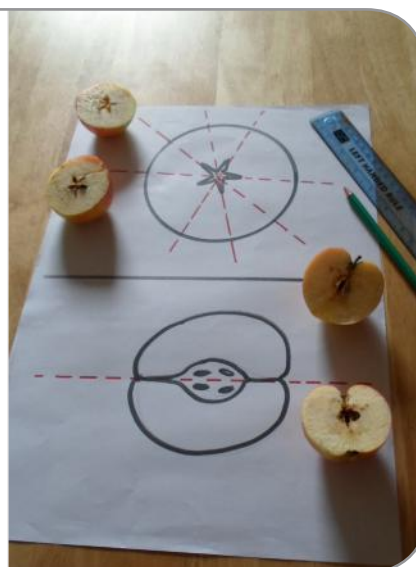
- To look at symmetrical patterns in nature
- To draw a symmetrical match given one half of a pattern

Resources

Orchard fruits, leaves, paper and pencils, double-sided tape, knives, rulers and scissors.

Method

- Cut leaves in half vertically through the central vein. attach with double-sided tape to paper and try drawing the other half of the leaf to match
- Cut an apple or pear in half vertically. Discuss the number of lines of symmetry (there will be one)
- Cut an apple in half horizontally, copy what you see onto paper and set the challenge of drawing all the lines of symmetry (there will be five)



Further Ideas

- Press apple or pear blossom between paper towels with heavy weights on top. Look for lines of symmetry. Even a bumblebee when viewed from above will be symmetrical



MATHEMATICS IN THE ORCHARD

Sorting All Ages Autumn

Rationale

Early maths work involves sorting into colour, shape and size. Orchard fruits come in many shapes, colours, weights and sizes.

Aims

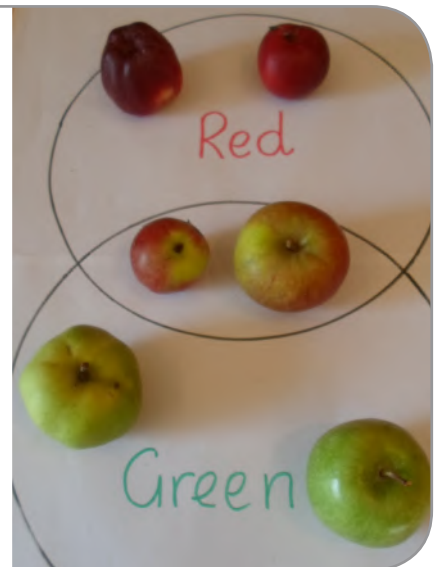
- To explore a variety of sorting activities
- To use formats such as Venn and Carroll diagrams for sorting orchard fruits and leaves

Resources

Orchard apples, autumn leaves, Venn diagram formats (use 2 large hoops) and Carroll diagram formats (make a large grid on A2 paper).

Method

- Use the overlapping circles of the Venn diagram to sort apples by colour, eg reds in one hoop, greens in the other, with fruit of both colours in the overlap
- Repeat using different criteria, eg more than/less than 50g. Use autumn leaves and colours yellow to brown
- Use the Carroll diagram and criteria, eg for apples: red/not red and heavier than 50g/lighter than 50g
- Repeat using leaves, eg yellow/brown and no holes/with holes



Further Ideas

- Consider what fraction or proportion of the total of the fruit has been sorted

MATHEMATICS IN THE ORCHARD

Number All Ages

Rationale

The four early number processes are made more relevant in schools with actual resources, which could be orchard fruits, particularly apples which handle better than pears.

Aims

- To use apples in number processes
- To create visual displays of number processes

Resources

Apples.

Method

- Use fruit with early years for simple addition and subtraction. Photograph and display
- Create a fruity record of a multiplication table. Demonstrate sharing and division with fruit
- With older pupils use fruit in predicting and problem solving: what is the average harvest crop from 3 trees?; fractions: if $\frac{3}{4}$ of apples are ripe, what fraction is unripe?; if 10% of the crop weighs 14kg, what will the total weight be?; if 14 pears weigh 1 kg, what will 147 pears weigh?



Further Ideas

- Set pupil challenges with eg 12/36/50 apples to come up with as many number stories as they can

MATHEMATICS IN THE ORCHARD

Money Ages 7-12

Rationale

Number work involving money can be made more relevant by using the orchard as a stimulus.

Aims

- To use the orchard to enhance learning and teaching about money
- To use knowledge and skills in practical ways in orchard management

Resources

Information on the financing of the school orchard (purchase of trees, sale of fruit, etc) and access to the internet.

Method

- Discuss the financing of your school orchard: purchase of trees, rabbit guards, tree stakes, etc. Work out the cost per established tree
- Look on appropriate websites for the present cost of fruit trees. Work out the cost of buying 10/20/50, etc. Add the cost of stakes, guards, etc
- Discuss the price of fruit in shops. Calculate the value of the crop on one tree if sold at current prices
- Supply your school tuckshop in autumn and calculate the savings made



Further Ideas

- Find out from a local shop how many apples, pears and plums are sold in one week, and the prices charged. Calculate what the grower will earn (approx 20% of retail cost)
- Compare prices at farmers' markets and supermarkets

MATHEMATICS IN THE ORCHARD

Compass Directions Ages 7-12



Rationale

Fruit trees in an orchard will benefit from maximum sunshine, and planting is advised in rows from north to south. Use a compass to look at directions in your orchard.



Aims

- To demonstrate compass directions out of doors
- To apply these to the orchard setting
- To develop a compass-led trail



Resources

String, a cane or stake, sawdust (hamster bedding is a good resource, or make friends with a local joiner for sawdust), a compass, a wind-sock (streamers tied to a stick) or a toy windmill.



Method

- Put the cane in the centre of a large empty space. Attach one end of a 4m length of string to the stake and make a knot at the 3m mark
- Keeping the string taut, mark out a circle with sawdust following the line the knot makes round the stake. Use the compass to fix north on the circle, then space pupils evenly around to mark the other directions
- Pinpoint the sun and consider its direction. Use the windsock to find the direction of the wind



Further Ideas

- Set the challenge of creating a trail around the orchard, using compass directions and paces, eg go 6 paces north, then 4 paces east



MATHEMATICS IN THE ORCHARD

Co-ordinates Ages 10-12

Rationale

Even before your trees are planted, you should make a map of where each will go. Co-ordinates and mapping have real relevance and usefulness in the orchard.

Aims

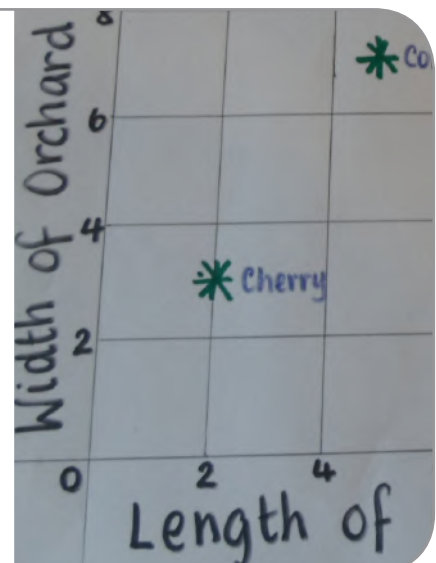
- To develop skills in using co-ordinates
- To apply these skills to map the school orchard

Resources

Orchard trees or marker posts to show where they will go, photographs and plans, square grids on paper or the whiteboard, numbered along the x and y axis in metres (or multiples of metres if the orchard is very large).

Method

- Practise using the grid with games like battleships, etc
- Use a photograph of the orchard to make a sketch. Expand or contract this to A4 and lay a grid over it
- Mark on the position of the trees, and record their co-ordinates
- Label each spot with the name of the tree
- Discuss and practise finding, eg the tree which lies at 10, 06
- Keep a copy of the grid in the orchard file



Further Ideas

- Play fruity battleships: an apple = 4 squares, a pear = 3, a plum = 2 and a cherry = 1 square. When a square is found, instead of saying 'hit', you say 'Crunch!' and instead of 'sunk', you say the name of the fruit, for example, 'Apple!'

MATHEMATICS IN THE ORCHARD

Fractions All Ages Autumn

Rationale

Learning about fractions can be fun if food is used as a resource. Problem-solving becomes more relevant if there are 6 apples and 30 pupils to share them.

Aims

- To use apples as a resource to support the teaching and learning of simple fractions

Resources

Apples of fairly standard size and shape (windfalls will do if tasting isn't important), knife, chopping board, compost box and rubber bands.

Method

- Show how an apple can be cut into equal halves/quarters/thirds
- Progress to showing that halves can become quarters, quarters become eighths and so on
- Use rubber bands to make whole apples using for example, one half and three sixths, two quarters and four eighths etc
- Decide what fractions will be needed to give everyone an equal share in a class of 30 of 5 apples, 6 apples, 10 apples etc



Further Ideas

- Extend to show that, eg 9 sixths will equal one whole and one half. Capture your apple fractions in photographs



MATHEMATICS IN THE ORCHARD

Bar Charts and Pie Charts All Ages

Rationale

Pictorial charts make recording of measurements and figures much easier to interpret. Display all the measurements made in the orchard in chart form.

Aims

- To develop and use IT skills in the creation and use of bar charts and pie charts
- To record information as bar charts for younger pupils

Resources

Computer access, using programmes which produce bar and pie charts, a variety of orchard measurements of length, height, weight of crop, etc.

Method

- For younger pupils, design a bar chart with columns and boxes, either on paper or on the interactive whiteboard. Enter the data and discuss what can be seen
- For older pupils, enter the orchard data and when the bar chart and pie charts are produced, interpret the information developing a good vocabulary of comparison
- When the activity is repeated, note any trends, display the information and keep a copy in the orchard file



Further Ideas

- Challenge pupils to find other data to interpret: the number of bumblebees visiting the orchard over 10 minutes each day; the number of red/green/yellow apples in the crop, etc



Your own ideas for Mathematics in the Orchard



SCIENCE IN THE ORCHARD

Giving a relevant and resourceful context for:

- a study of the natural world
- seasons and the weather
- environmental issues
- early chemistry and physics



SCIENCE

IN THE ORCHARD

Weather Effects All Ages

Rationale

Concentrating a study of weather throughout the year in your orchard also allows pupils to see its effects on the trees and their leaves, blossom and fruit.

Aims

- To observe and study the weather in the orchard
- To record its effects on the fruit trees
- To take preventative action where appropriate

Resources

Rain gauge, a simple wind-sock or child's windmill, compass and a thermometer.

Method

- Set up the rain gauge. Check the amount collected each day over one week, each season. Note how leaf shapes allow rain to run off from the points
- Make wind-socks with streamers of paper or strips of light fabric attached to a stick. Choose a windy day and test directions. Note the effect on leaves, and on blossom if it is being blown off or pollinating insects are unable to be out
- Take temperature readings throughout the year and note how they affect the trees' development



Further Ideas

- Use your results to ensure the trees do well: if the ground becomes water-logged, consider drainage channels; if blossom is being blown off, try wrapping small trees in fleece

SCIENCE

IN THE ORCHARD

Orchard Soils Ages 7-12

Rationale

It is good to know which kinds of soil are in your orchard - ideally before planting - remembering that well-balanced soil will ensure good growth and harvests.

Aims

- To examine soil samples and layers
- To carry out soil testing and to analyse the results
- To study porosity - how well water will drain away

Resources

Samples of soil from different parts of school grounds - near a hedge, in a vegetable bed, under a grassy area, etc, and most importantly, in the area where trees will be planted, a soil testing kit, spade, plastic sheeting, gallon can of water and plastic gloves.

Method

- Share out the plastic gloves and feel each sample in turn, deciding if it feels smooth, slimy, gritty, sandy, etc
- Pour a little water on each sample and squeeze to see if it will make a ball - sandy soils will not, heavy clay soils will
- Use the soil tester as directed to analyse each sample
- Dig a pit 2 spades deep, putting the top layer on one sheet of plastic and the 2nd on another. Look at colour and textures of both layers. Fill pit with water and time how long it takes to drain away. Replace soil afterwards



Further Ideas

- Sow cress seeds onto the different soil samples, put each into the same sunny space and water each the same amount. Observe which is the better growing medium
- If the soil around fruit trees is very heavy clay soil which doesn't drain well, dig in some sand and leaf mould to prevent it drying out in summer



SCIENCE

IN THE ORCHARD

Studying Soils All Ages

Rationale

Soil is the growing medium for almost all plants. Understanding its composition and properties ensures better growth of your fruit trees and other plants.

Aims

- To carry out experiments using soil from orchard areas

Resources

Access to bare ground, garden soils, a sieve, sticky tape, a jam jar and lid, basin, plastic gloves and a microscope or magnifiers.

Method

- Discuss the importance of soil, what it is, where it comes from, etc
- Collect some soil, rub it through a sieve to leave the small stones it contains. Attach these to some sticky tape and look at them through the microscope
- Half fill a jam jar with soil and top it up with water. Screw on the lid and shake it well. Observe what happens after 30 seconds, 5 minutes, 1 hour, 24 hours
- Half fill the basin with soil. Pour in water to cover, watch air bubbles emerge and any soil creatures



Further Ideas

- Compare the soils from different areas of your grounds. Carry out the jam jar experiment with gravel, soils and compost and observe the layers they form



SCIENCE

IN THE ORCHARD

My Tree All Ages

Rationale

Orchard trees show clear changes as seasons pass. Visiting the orchard at least 4 times a year allows new growth to be noted and tree care maintained.

Aims

- To visit orchard trees at least once each season from August to June
- To record seasonal changes and growth

Resources

Camera, magnifiers, thermometers, rulers and measuring tapes.

Method

- In August, allocate one tree each to groups of pupils for the year, note its name, position and photograph it with the group
- Measure each tree's height, circumference, length of longest leaves, weight of largest fruit. Note temperature outside, any insect life on the tree and also any dead, diseased or damaged branches to be pruned by the tree-management team
- Repeat activities in November, February and June and compare growth and progress



Further Ideas

- Measure height of pupils in August and find the group's average. Predict how much they will have grown by June. Do the same for the trees and compare results in June



SCIENCE

IN THE ORCHARD

Apple Pips Ages 7-12 **Autumn**

Rationale

Apple pips are the seeds of future plants, although most new trees are grafted. Where a pip grows, the resulting fruit will not be the same but a new variety.

Aims

- To examine apple pips in detail
- To experiment with pip growing

Resources

Apple pips from ripe apples (crab apples or Granny Smith work best), magnifiers, microscopes, a knife, blotting paper, a small plate and access to a dark space such as the back of a cupboard.

Method

- Cut through an apple vertically and remove the pips - ripe ones will be brown
- Look at the size, shape and colour of the pips - each of these could grow into a tree 5 metres tall
- Cut through the pip and look at its component parts through a microscope
- Put the cut pips onto damp blotting paper and discuss what might happen
- Put the pips into the dark and examine again after 1, then 2, then 4 weeks for signs of growth



Further Ideas

- Line a jar with blotting paper and push apple pips down the sides. Keep the paper damp, put the jar in the dark and examine regularly



SCIENCE

IN THE ORCHARD

Pip-Planting All Ages Autumn

Rationale

Some apple pips grow well, and if they grow into a tree and fruit, you will have a completely new variety to name. Note that this is a 3 year project!

Aims

- To plant apple pips and grow them on to become little fruit trees

Resources

Small flower pots (recycled polystyrene cups with a hole in the base work well), peat-free compost (John Innes seed or other fine soil), small polythene bags, twigs (about 20cms long), pips from ripe crab or Granny Smith apples, small labels and trays.

Method

- Label each pupil's pot and fill it with damp compost
- Push 2 or 3 apple pips into the compost, until just covered
- Put each pot in a bag (to act as a small greenhouse), push a stick into the centre and water the compost
- Tie the bag ends and put on a tray. Keep in a cool but light place until shoots begin to show in February
- When 4 leaves show, transplant very gently into small single pots. Keep watered. After one year, transplant into a larger pot. Plant outdoors after 3 years



Further Ideas

- Decide what your new variety will be called and design a label



SCIENCE

IN THE ORCHARD

Pip to Pie Ages 7-12

Rationale

The process of growth from a pip to a mature fruit is interesting because of all the occurrences which might help or hinder its growth.

Aims

- To consider the seasonal changes, insect and animal life and other events which will have an impact on the growth of a fruit tree

Resources

Pictures and photographs of insects (including caterpillars, bees and wasps), pictures and photographs of animals (including rabbits, deer and birds), pictures of children and weather images.

Method

- Discuss the insect life observed in your orchard, and consider the impact each might have: caterpillars eat leaves, wasps eat the fruit, but bees pollinate the flowers and ensure a crop
- Discuss the creatures: birds eat problem insects but will peck at fruit; rabbits and deer do enormous damage to tree bark; children may look after trees or damage them
- Discuss weather: strong winds and heavy snow may break branches, ample sun and rain is essential



Further Ideas

- Forth Environment Link has produced the Pip to Pie© Jigsaw Game which tracks the progress of a seed to becoming a mature tree bearing fruit
- Make up a sequencing worksheet showing the bad and good things which will hinder or help an apple pip to grow well

SCIENCE

IN THE ORCHARD

Orchard Needs All Ages

Rationale

All plants and creatures have basic needs for their survival. We compare human needs with those of a fruit tree.

Aims

- To consider the 6 basic needs of fruit trees and to compare them with those needed by humans

Resources

6 jam jars with lids filled as follows: 1 x empty (contains air), 1 x water, 1 x something yellow (representing the sun), 1 x soil, 1 x no space (completely full with shredded paper, beans, etc), 1 x picture of a clock, or with a real watch inside, pictures of human needs and cress seeds.

Method

- Elicit what pupils consider to be human needs: shelter, family, food, water, friends, sleep, medicine, etc. Discuss whether these are the same for fruit trees
- Show each jar in turn and discuss what each represents: Fruit trees need air around them, water to drink, sunshine to ripen fruit, soil for stability and nutrition, space to grow and plenty of time
- Discuss the effect of lack of these for the trees
- Experiment with growing cress seeds eliminating one of each of the tree needs in turn



Further Ideas

- Find out about seaweeds, air-plants, mushrooms, cacti, etc which do not all require the same growing conditions

SCIENCE

IN THE ORCHARD

Healthy Trees Ages 7-12

Rationale

We need food and drink to keep us alive. Fruit trees also need their kind of nutrition and learning about this keeps the school orchard healthy.

Aims

- To learn how plants absorb the food and drink they need
- To use this knowledge to ensure fruit trees stay healthy

Resources

250g soil, 2 shallow bowls, a container for water, a piece of turf about 30cm square, 4 old plates, and 6 used tea-bags for 5 days (from the staffroom).

Method

- Divide the soil into 2 bowls. Water one daily, leave the other to dry out. After a week, discuss changes
- Cut turf into 4 and put each on a plate. Leave the 1st without water, water the 2nd daily, water the 3rd with 1 cup cold water in which the tea bags have soaked, soak the 4th in as much water as the plate will hold
- Compare results after one week
- Fruit trees suck up water and nutrients from the ground and from rainwater. A healthy tree will need to be watered in prolonged hot, dry weather



Further Ideas

- Grate, then squeeze an apple to show how much water it contains. It is vital to keep fruit trees well-watered to allow fruits to develop

SCIENCE

IN THE ORCHARD

Chemistry Ages 7-12

Rationale

The process of changing raw fruit to cooked is a tasty way of demonstrating irreversible change through heat.

Aims

- To cook apples simply, to show the process of change

Resources

2 large cooking apples of similar size and weight, access to a microwave cooker, a suitable dish and a set of scales.

Method

- Weigh one apple on the cooking dish
- Cut through the second apple and consider its colour and texture: juicy, crisp, etc
- Put the first apple on the dish into the microwave for 1 minute at full heat. Remove and look for changes
- Repeat until the apple is cooked through and soft
- Discuss the changes observed, and weigh the apple and dish a second time
- Discuss the irreversible changes heat has made



Further Ideas

- Dry apple slices in the microwave at its lowest heat setting for 20 mins
- Use parent help to make apple jams and jellies



SCIENCE

IN THE ORCHARD

Pollination Ages 7-12 Spring

Rationale

The blossom on your fruit trees is a hopeful early sign of fruit to follow. Spring is a very good time to look more closely at flowers and their component parts.

Aims

- Through dissection, to look at the distinct and important parts of flowers
- To learn how fruit is created from flowers
- To encourage the 'look but don't touch' rule for orchard trees with blossom

Resources

Tulips or daffodils in full flower, ideally one per pupil, magnifying glasses, A5 cards prepared with a strip of double-sided tape in the middle from top to bottom allowing one for each flower being dissected.

Method

- Dissect one flower as a demonstration, removing in turn and attaching to the tape: the petals, the stamens and the central stigma. Where there is an ovary (at the base of a really mature flower) open it to show the miniscule seeds inside
- Invite pupils to dissect their flowers
- Explain that petals are landing platforms with colours leading to the centre, the stamens carry the pollen and the stigma receives pollen from another flower to be able to make seeds in the ovary



Further Ideas

- Take magnifiers to look at orchard blossom, which is too small to dissect. Ensure pupils understand that if flowers are removed from the tree, there will be no fruit



SCIENCE

IN THE ORCHARD

Pollinators Ages 7-12 Spring/Summer

Rationale

Pollinating insects are a vital part of our world, especially in our orchards. Their numbers are in decline and so the more we know of them the better chance they have of surviving.

Aims

- To learn about bees and bumblebees and the important and vital role they play in fruit production
- To consider ways of attracting pollinating insects to your orchard

Resources

Paper and pencils, a daffodil or tulip, a clear, large picture of a bumblebee or if possible, the 2D pack of bumblebees from the Bumblebee Conservation Trust.

Method

- Without prior discussion, ask pupils to draw a bumblebee. Discuss legs, wings, eyes, etc
- Use the 2D pack or a good image of a bumblebee and elicit that it has 3 body parts: a head with 2 eyes, a mouth and 2 antennae, a thorax with 6 legs and 2 pairs of wings, and an abdomen
- Use the flower showing how a bee or bumblebee uses its long tongue to suck up nectar (for making honey) from the centre of the flower. Explain that pollen from the flower's stamens is collected for bee food



Further Ideas

- Observe bees and bumblebees on orchard blossom, going from flower to flower. Look carefully to see pollen being carried on their back legs. Observe long tongues probing the centre of the flowers for nectar

SCIENCE

IN THE ORCHARD

Change and Decay

Ages 8-12

Rationale

All food will decay in time and the process can be fascinating. Orchard fruits too go through the process of shrinkage and mouldiness, a natural part of change and decay.

Aims

- To observe the process of change and decay
- To consider the value of the process in ridding us of unused foods

Resources

At least 5 jam jars with lids, a whole fresh apple, pear, plum, a slice of bread, a piece of cheese, scales and sellotape.

Method

- Record the weight of the jam jar and lid, and each separate piece of food
- Put each food into a jar, label the jar and close the lid, sealing it with sellotape
- Day by day weigh the jars and note any changes in the contents: liquid forming, moulds growing etc
- After 2-3 weeks, dispose of the jars and their contents, unopened



Further Ideas

- Leave an apple, a pear and a plum out on a plate and observe their change and decay over a few days
- Research how long it takes for everyday rubbish to decompose - some take hundreds of years!

SCIENCE

IN THE ORCHARD

Gravity Ages 7-12

Rationale

It is said that Sir Isaac Newton discovered Gravity when an apple fell on his head. It seems logical therefore to do gravity activities in the orchard.

Aims

- To observe the effects of gravity on orchard fruit
- To create experiments with other resources to see how they are affected by gravity

Resources

Windfall orchard fruit, a stopwatch, feathers, seed heads, string, some light-weight fabric and a safe ladder with an adult to hold it.

Method

- Discuss the force of gravity and why everything falls to the ground. Consider which things might fall more slowly: a dandelion seed, a person using a parachute
- Use orchard fruits and drop them from different heights: a standing position, on the lower steps of the ladder, from the top step of the ladder. Discuss what pupils observe
- Time the dropping of seeds which have wings, feathers
- Set the challenge of slowing down the fall of an apple using string and fabric



Further Ideas

- Find out how long it would take for an apple to fall from eg the Eiffel Tower, the height of Mount Everest, on the Moon



SCIENCE

IN THE ORCHARD

Light and Darkness Ages 7-12

Rationale

Fruit trees should have a metre of ground around them which is kept free of weeds. Light deprivation techniques can make this manageable.

Aims

- To experiment with light deprivation on plants
- To use this knowledge to help to keep an area around orchard trees free of weeds

Resources

Thick dark plastic (the inside of compost bags is good), bricks or stones.

Method

- Choose short grassed areas which are not used for general play
- Cut large shapes out of plastic: squares, circles, feet, etc and lay them on the grass
- Weigh each shape down with bricks or stones and leave undisturbed for at least 3 weeks
- Lift the shapes and observe the grass below, which will be yellowing and dying
- Allow the grass to regrow. Use plastic weighed down with stones to surround fruit trees to kill weeds



Further Ideas

- Instead of light deprivation around fruit trees, a planting of chives, nasturtiums, or other flowering herbs can be beneficial and attract pollinating insects

SCIENCE

IN THE ORCHARD

Habitats Ages 7-12

Rationale

The study of habitats of orchard trees emerged from a rainforest topic, as the study of any mature tree is interesting. Choose a summer day when an apple or pear tree is in full leaf.

Aims

- To look at the variety of wildlife and plant life at different levels of a mature tree
- To consider what each part brings as a habitat for wildlife

Resources

Access to mature or old fruit trees of a good height, a camera, binoculars, magnifiers, small mirrors, trowels, and garden gloves.

Method

- Ground level: dig around base of tree and look for insects, fungi and plants. What might live there? Are there holes between roots? Why might the ground be empty of plants?
- Eye-level on the tree: branch and twig growth, mosses and lichens, insects on and in bark
- Upper level: use mirrors, binoculars to look for evidence of life: holes for birds and mammals, nests
- Record each layer with photographs. Recognise that mature fruit trees can provide rich habitats for wildlife



Further Ideas

- Look at the tree again in winter when branches are bare. Note the holes, bark crevices and root spaces which can be habitats for hibernating animals and insects



SCIENCE

IN THE ORCHARD

Minibeasts All Ages Spring/Summer

Rationale

Orchards will give a home to the 'good guys' and 'bad guys' of the insect world. This topic will allow you to ensure that trees are not being damaged, and to encourage pupil research.

Aims

- To look for and try to identify common minibeasts on orchard trees and their surrounds
- To investigate life cycles
- To find out which minibeasts are beneficial and which might be damaging to trees or fruit

Resources

Magnifiers, pooters to collect small insects, a white cloth, insect identification keys and books, access to internet sites.

Method

- Display books and resources and discuss common insects: ladybirds, bees, wasps, caterpillars, spiders, etc
- Ensure pupils know how to use magnifiers and pooters
- Examine leaves, blossom and trunks for insect life
- Spread the cloth below a tree in full leaf. Shake branches vigorously and look at what falls onto it
- Research some insects: carnivores will eat troublesome pests, herbivores will eat your leaves and fruit. Research the life cycles of caterpillars and ladybirds



Further Ideas

- Squeeze halved grapefruit. Place dome-side up around the orchard, and hold in place with a skewer or pointed stick. Check after a few days for the insects which may have crawled inside



SCIENCE

IN THE ORCHARD

Nocturnal Visitors All Ages

Rationale

At night, your orchard will be the home to a variety of nocturnal visitors. Discover what they are and what they are doing.

Aims

- To set up experiments to attract nocturnal creatures to visit the orchard
- To record what they might be and what they are doing there

Resources

6 house bricks, a small bucket of sand, twigs, string, slates, apple pieces or windfall apples.

Method

- Discuss which creatures might visit the orchard: slugs, snails, mice, birds, rabbits
- Use the 6 bricks to make a small roofed shelter, spread sand inside and put some apple pieces at the back. Next day look for footprints
- Make a triangle with twigs and string. Attach to a stick and push into the ground near a hedge or bush. Look for a spider web in the triangle
- Lay a slate pathway to pieces of apple. Check for slug or snail trails at the end



Further Ideas

- Push the end of a twig into a windfall apple and push the other end into the ground near a bush. Check in the morning for little teeth marks or pecks



SCIENCE IN THE ORCHARD

Garden Bird Watch All Ages Spring

Rationale

Many schools take part in the annual RSPB bird survey. With some prior preparation, your orchard could become a good focus for this, and birds will eat over-wintering bugs too.

Aims

- To set up feeding stations in the orchard - at least two weeks in advance of the RSPB survey
- To encourage identification of common bird species
- To participate in the Garden Bird Survey

Resources

Fine birdseed (put a mixture in a sieve to sift out the finest), runny honey, green hedging (cupressus is ideal), a tray or shallow dish, string, paintbrushes, apples, shelled sunflower seeds, twigs, pictures of common garden birds, a copy of the RSPB Bird Survey and a screen made of willow, hedging, etc.

Method

- Lay hedging sprigs on a shallow tray and attach some string to one end of each. Paint with runny honey, sprinkle with bird-seed and tie onto orchard trees
- Push a hole through each apple from top to bottom, thread a length of string through and attach a small twig as a perch to the lower end. Make holes in the skin and push in sunflower seeds. Tie low down on orchard trees
- Set up a screen to avoid scaring off birds, and carry out the RSPB survey as directed



Further Ideas

- Popcorn strings and fat balls will also attract birds. If you grow willow, make a screen so that bird-watching becomes a regular feature through the seasons



SCIENCE

IN THE ORCHARD

Quadrat Study Ages 7-12

Rationale

Unless the school orchard is kept as grass, there will be a wealth of plant-life to investigate. It is not important for teachers to know each species - far better that pupils learn through investigation.

Aims

- To carry out small investigations into areas of the orchard
- To increase observational skills
- To increase the variety of wild-flowers and grasses

Resources

PE hoops, twigs, kneelers (try carrier bags filled with folded newspapers), magnifiers, microscopes, a spade, a shallow tray without holes in the base, plant books with identification keys if possible and wild-flower seeds.

Method

- If the orchard is closely mown, leave an area roped off for about 4 weeks in spring or summer
- Lay hoops in spaces, held down with twig pegs, allocating 4-6 pupils to each
- Collect samples of each variety of plants and match to the identification keys where possible. Record findings. If possible, press samples then laminate when dry
- Cut a section of turf, lay it in the tray and water until it is submerged. Record which creatures emerge. Return them all to the orchard



Further Ideas

- Repeat this activity at different times of the year and record how the plant varieties have changed. In April and May, cut out circles of turf and sprinkle in the spaces wild-flower seeds covered with soil to increase the variety of plant life



SCIENCE IN THE ORCHARD

Tree-Training Ages 9-12 Winter

Rationale

Fruit trees can be bought ready-trained into a variety of shapes, but this is very expensive. It is quite possible to achieve these shapes with new young trees, guidance, practice and patience.

Aims

- To research tree training shapes and methods
- To try training into a variety of shapes with young fruit trees

Resources

String, soft tie (plastic-covered wire), bricks, canes, training and pruning advice (see Appendix 3, p129).

Method

- Study the shapes which are commonly used for fruit trees and decide which ones might be appropriate for your orchard
- Use some of the resources above to gently train your young trees into the chosen shapes
- Remember that these trees will require to be pruned more often and training ties checked for tightness
- Compare the fruit harvest from trained trees with the harvest from trees grown without special shaping



Further Ideas

- Visit an orchard where trees have been trained, look online, or invite an expert to advise on the variety of methods available



SCIENCE

IN THE ORCHARD

Senses in the Orchard All Ages

Rationale

It is good to use orchard fruits to explore the five senses. A wide vocabulary of senses can be achieved and pupils encouraged to enjoy healthy fruits.

Aims

- To use orchard fruits to explore the senses of sight, touch, smell, hearing and taste
- To encourage the development of a senses vocabulary

Resources

Orchard fruits - apple, pear, plum, cherry and nuts as available (choosing a variety of shape, colour, texture of skin and taste), a knife, a small plate and a few blindfolds.

Method

- Lay out the fruits and show that the sense of sight can distinguish shape, colours, patterns and markings
- Use the sense of touch and blindfolds to identify fruits and to note skin textures: rough, smooth, slippery
- Use the sense of smell on fruit skins and flesh
- Taste pieces of fruit and compare sweet, sour, juicy, dry
- Create a sounds bank as pupils eat pieces of fruit: crunch, slurp, lick, chew



Further Ideas

- Create a senses display of all the descriptive vocabulary around large images of orchard fruit



Your own ideas for Science in the Orchard



SOCIAL STUDIES IN THE ORCHARD

Giving a purposeful context to the study of:

- climate, seasons and hemispheres
- food miles and transport issues
- apple varieties and their origins
- travels along the Silk Road and the development and spread of apple cultivars





SOCIAL STUDIES IN THE ORCHARD

Climate Zones

Ages 8-12

Rationale

Although orchard fruits are widely grown across the world, they do need specific growing conditions.

Aims

- To consider the factors required for orchard tree growth
- To use maps to plot distinct areas
- To establish that orchard fruit grows best in temperate climates

Resources

A large world map, labels for these regions: arctic, desert, tropical rainforest, tundra, temperate, etc, examples of orchard and tropical fruits (real or in picture form).

Method

- Discuss and agree on the factors needed for tree growth: sunshine, water, soil
- Lay all the labels on the map except for the 'temperate' ones. Discuss why these areas are unsuitable for reasons of lack of warmth, rainfall, soil base, etc
- Lay temperate labels across the broad bands of the world remaining, showing that they have moderate temperature ranges, a balance of rainfall and sunshine, and good soil options, ideal for orchard fruits



Further Ideas

- Look at the labels on orchard fruits in local shops. Look at where they have come from and discuss that country's climatic zones
- Colour code a world map on the interactive white board



SOCIAL STUDIES IN THE ORCHARD

Seasons and Hemispheres Ages 8-12

Rationale

People nowadays want to buy orchard fruit all year round, so we see apples coming from New Zealand, South Africa, etc. We should understand why we can't grow British apples all year round.

Aims

- To find out about the different seasons of the north and south hemispheres
- To consider the growing conditions for orchard fruits, relating these to each hemisphere

Resources

A large world map, 4 A5 laminated labels (Winter, Spring, Summer, Autumn), a lamp or torch, a globe of the world and 2 lengths of tape, each as wide as the map.

Method

- Use the lamp as the sun, to show that the earth is tilted at an angle with different parts lighting up as it turns
- Lay the tape on the tropics of Capricorn and Cancer. The part in between is too hot to grow orchard fruits
- Discuss that when it is winter in the northern hemisphere, it is summer in the southern. Use the labels to show how the seasons are opposite
- Elicit that we have blossom on fruit trees in spring and fruit in the autumn, however our spring months match autumn months in the southern hemisphere



Further Ideas

- Create worksheets with a bare-branched tree in each quarter. Label two, 'Spring' and two, 'Autumn'. Draw what would be on the trees in the northern hemisphere in spring (leaves and blossom) and in the autumn (leaves and fruit). Do the same for the southern hemisphere

SOCIAL STUDIES IN THE ORCHARD

Food Miles **Ages 8-12**

Rationale

Labelling of orchard fruits in shops show that much of it has travelled hundreds or even thousands of miles, even though much can be grown in Britain. 'Food Miles' create unnecessary pollution.

Aims

- To look at the origin of the fruit in our shops and supermarkets
- To consider the food miles it will have travelled
- To encourage environmentally-friendly shopping

Resources

A large world map, lengths of coloured wool, a measuring tape and a variety of orchard fruits with labels to show their countries of origin (use peel-off labels attached to cocktail sticks, pushed into each fruit), a model lorry, ship and aeroplane.

Method

- Lay the labelled fruits on their country of origin. Discuss why these fruits don't come from arctic or tropical regions (too cold, hot, dry)
- Discuss that orchard fruits are harvested in the autumn, September - November in the northern hemisphere and February - April in the southern
- Lay wool along the route fruits travel to Britain, measure and compare distances and consider that transport might be by air-polluting plane or ship
- Discuss buying fruit in season and from local suppliers



Further Ideas

- Look at this link for a pupil-friendly calculator of distances: <http://www.organclinker.com/food-miles.cfm>
- Explore ways in which British fruit can be stored for months. Research local suppliers



SOCIAL STUDIES IN THE ORCHARD

Supermarket Uniformity Ages 8-12

Rationale

Orchard fruits in supermarkets are limited to a few well-known varieties. Local fruits are rarely there. It is interesting to explore some of the reasons for this limitation of availability.

Aims

- To use measuring skills to assess varieties
- To consider storage requirements
- To consider other aspects which influence consumer choice

Resources

At least 3 bags of different apples, tape measures, scales, a jam jar with a lid, small plates, polythene bags and access to a refrigerator.

Method

- Note the obvious similarities of colour, shape, size and weight of each variety. Discuss why similarities are useful for bagging and displaying fruit
- Experiment with different means of storage: on a plate in direct light/near heat/in the dark, etc. Put an apple in a closed jam jar, in a polythene bag, in the fridge, etc. Check fruits daily. Record which method keeps better
- Discuss options for large quantities of fruit in transport
- Discuss customer choice and take a poll among pupils/staff/parents about their choices and influences



Further Ideas

- Look at the harvested fruit from your own orchard. Discuss its uniformity or lack of it, and use the best storage method to keep any surplus, bearing in mind that some chilled apple varieties can be kept for up to two years

SOCIAL STUDIES IN THE ORCHARD

Fruit Varieties Ages 9-12

Rationale

Over 2000 British apples used to exist with hundreds also growing in other lands. Through mass global trading and increase in supermarket shopping many have been lost.

Aims

- To find out about local orchard fruit varieties
- To look at fruits available in shops today
- To support the planting of local varieties in school and community orchards

Resources

Internet access, samples of supermarket apples and a large world map.

Method

- Use internet sites and appropriate books to find out about fruit varieties which originated near your locality. Explore whether they are still grown today
- Look at the varieties from local shops and plot their origin on a world map. Discuss the popularity of some varieties, eg Granny Smith, which means these apples are grown in many countries today
- If possible, source a local variety of apple tree from a recommended supplier to plant in your school grounds



Further Ideas

- Find out about the fruit grown in a local orchard, and if possible discuss with the owner why these varieties were chosen, the quality of the fruit obtained and which trees would be recommended



SOCIAL STUDIES IN THE ORCHARD

Scottish Apple Varieties Ages 8-12

Rationale

There used to be around 300 varieties of apples of Scottish provenance (registered with the Royal Horticultural Society by Scottish producers). Only 50 or so are still available.

Aims

- To find out about varieties of Scottish provenance and plot them on a map
- To learn about some of the growers and the nurseries they worked in

Resources

A world map, a map of Scotland, either on paper for pupils to use or on the interactive whiteboard, access to internet sites as required, Scottish apple varieties and information (Appendix 6, p132).

Method

- Discuss and consider the needs of orchard fruit for good growth: sunshine, rainfall, soil conditions, temperatures and latitude
- On the world map, discuss the latitude of Scotland in comparison to England, France, Germany, Romania, etc, and the impact temperatures and weather will have on this
- Plot the Scottish varieties on the map, and share what is known of their producers
- Find out about the origin of the school's apple trees



Further Ideas

- Counties of England have their own special varieties, especially in the south. Plot some of these on a map of England. Discuss the warmer climate as latitudes edge nearer to the equator
- New varieties are being created all the time. Do a taste comparison test



SOCIAL STUDIES IN THE ORCHARD

Local Orchards Ages 8-12 Autumn

Rationale

It is becoming increasingly difficult to maintain private orchards and their fruit. Establishing a good relationship with orchard owners could be productive for both schools and owners.

Aims

- To find out about local orchards and the issues their owners might face
- To discuss visits and possible help

Resources

Time to contact owners and to arrange visits and transport, cameras.

Method

- Research local orchard owners and enquire if a well-supervised visit would be possible
- Discuss the reasons for the visit with pupils and encourage them to set standards of behaviour
- Use the visit to give the owner an opportunity to share with everyone the issues which might affect the orchard: eg old trees, changing demands of shops and customers, vandalism and Access Rights
- Discuss ways in which pupils could help, perhaps with harvesting, using fruit, preventing vandalism



Further Ideas

- Share photographs and information throughout the school and the message of establishing a good relationship for future visits



SOCIAL STUDIES IN THE ORCHARD

Fruit Names All ages

Rationale

New varieties of orchard fruits will be named by their producer before being officially recognised by the Royal Horticultural Society (RHS). We can consider why a fruit has been so named.

Aims

- To look at five apple varieties in particular and discuss their names: Granny Smith, Cox's Orange Pippin, Royal Gala, Pink Lady, Golden Delicious
- To research the names of local fruit varieties
- To create lists of varieties according to their name definitions

Resources

Internet access, supermarket fruit names and one each at least of the five varieties named above, art materials and a list of fruits (Appendix 7, p133).

Method

- Discuss the name of each fruit in turn and what pupils think are the reasons for their names: Granny Smith and Cox after their growers, Pippin because the original was grown from a pip. Pink Lady and Golden Delicious because of their colours and tastes, Royal Gala after an event
- Share some of the fruit names from the list and group them according to how they are named: colour, place of origin, owner's name, an event
- Imagine, draw, colour and name a new apple variety



Further Ideas

- Carry out similar research into pear, plum, cherry and nut varieties



SOCIAL STUDIES IN THE ORCHARD

Old Trees **Ages 8-12**

Rationale

Apple trees can live for about 100 years, pear trees for up to 300 years. We can consider what events they might have lived through.

Aims

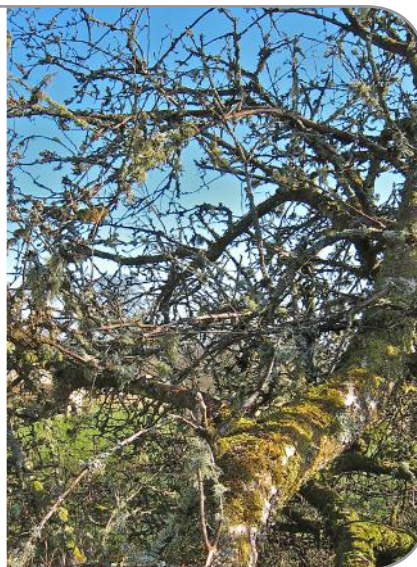
- To research the local history of an ancient orchard tree
- To discuss what has happened since the school orchard was planted
- To have fun predicting what might occur in the future while the trees survive

Resources

Local maps and records (from internet and local library/history society), local monuments, eg war memorials and an old neighbourhood fruit tree.

Method

- Carry out a survey through the internet or local media to find the oldest tree locally
- Research information and record in stories, poems or photographs what has happened in your area and nationwide over these years
- Plot a timeline for the school orchard's trees, eg class intakes, local events, school changes, new siblings



Further Ideas

- Imagine what might happen over the next 50 years while your trees are growing: people landing on Mars, ice-caps melting, cars able to fly, aliens landing? Create a timeline across an orchard image where each pupil imagines a different year



SOCIAL STUDIES IN THE ORCHARD

Apple Propagation Ages 8-12

Rationale

Over 2000 years ago, the Romans brought many different foods to Britain, including varieties of apples. Skills in propagation grew and the stock of varieties increased.

Aims

- To learn about the propagation skills developed to produce new and better varieties
- To demonstrate with trees in the orchard, how this process is still used today

Resources

Fruit trees in the school orchard, a sharp knife.

Method

- Look at the knobby part near the base of the school trees; this is where the tree variety was grafted (joined) to the rootstock (tree root system)
- Gently scrape a little bark from one tree to show the green cambium layer just below the bark: the only living part of a tree. This is where tree joins are made
- Find a bud on a tree and explain that this could be grafted to another tree to clone the same variety
- Contrast this method with planting pips, which result in producing a new variety, not always of good quality



Further Ideas

- Invite a fruit expert to visit in spring or summer to show how bud or scion (twig) grafting is done



SOCIAL STUDIES IN THE ORCHARD

The Silk Route Ages 8-12

Rationale

Research shows that the earliest apples travelled along the Silk Route from east to west with merchants and their horses, whose droppings probably played a large part in the story.

Aims

- To follow the Silk Route on a map of Asia and Europe
- To extract and plant apple pips

Resources

A large world map or one showing Europe and Asia, crab or Granny Smith apples, small flower pots or recycled polystyrene cups, compost and small polythene bags.

Method

- Use the map and trace a route from China through most of the countries whose names end in 'stan' to the western countries of Spain, France and Britain
- Discuss transport for the merchants (horses, mules, camels) and their eating of crab apples on the way, with the pips passing through in their droppings
- Look at the apple pips which should be ripe and brown. Plant these into pots of compost, using the polythene bags as mini-greenhouses



Further Ideas

- Find out about the uses made today of animal waste: slurry and dung



SOCIAL STUDIES IN THE ORCHARD

Apple History and Travel Ages 8-12

Rationale

The history of our modern varieties of apples is fascinating, with different influences and skills developing.

Aims

- To chart the development of apples and the influences in their development from early times

Resources

A large world map, colourful stickers numbered 1-4 and a ripe apple cut open to show its pips.

Method

- Place stickers numbered 1 on Uzbekistan, Kazakhstan and Tajikistan. Here early wild crab apples originated
- Stickers numbered 2 go on the mountain routes used by silk merchants to Italy, Greece and Russia. Pips grew in horse droppings along the routes, producing trees
- Stickers numbered 3 go on France. Monks from 14th - 15th centuries learned to graft (join) twigs and buds to make better varieties
- Stickers numbered 4 go on England where King Henry VIII wanted only the best French varieties planted



Further Ideas

- Attach stickers numbered 5 on the map to show your own school orchard, which is carrying on the history of orchards by planting locally



Your own ideas for Social Studies in the Orchard



RELIGIOUS & MORAL EDUCATION IN THE ORCHARD

Giving a context for the development of:

- respect for the natural world
- self-esteem and confidence
- consideration of other world religions and customs





RELIGIOUS & MORAL EDUCATION IN THE ORCHARD

Awe and Wonder **All ages**

Rationale

What could be lovelier than a pear or apple tree in full blossom! Using each season's opportunities, pupils can learn to develop a sense of awe and wonder, and the words to express them.

Aims

- To use orchard trees to develop pupils' senses of awe and wonder
- To encourage the development of a vocabulary of expressive feelings

Resources

Orchard trees, magnifiers and microscopes, cameras, art resources, displays and library resources. Below are some ideas of times and examples:

Method

- Spring day: Buds and new leaves - marvel at new life
- Gentle rain: Raindrops on leaves, sounds, smells
- May: Blossom, pink and white, bees searching for nectar and pollen, aroma of flowers
- June: Embryonic fruit formation - marvel at tree's method of growing its seeds inside a fruit
- Autumn: Leaves of many colours, crunchy sounds
- Winter: Frosty branches and cobwebs, sky and clouds, snow on branches



Further Ideas

- Create wordbanks of expressive vocabulary on large images of orchard trees
- Display photographs and share impressions at assemblies
- Compose an acrostic poem using the words "Awe and Wonder"



RELIGIOUS & MORAL EDUCATION IN THE ORCHARD

Self Esteem **All ages**

Rationale

Schools with fruit trees will find ways of integrating orchard care into their programme of eco-work. This ensures continuity and shared responsibility, passed from pupil to pupil.

Aims

- To develop skills in caring for the orchard and the ability to pass on these skills
- To develop self-esteem through accepting responsibility, developing knowledge and following instructions

Resources

Cameras, recording resources, eg Word programme, logbooks, diaries, school-appropriate programme of annual maintenance, (see Appendix 3, p129) linking to eco-programmes of Grounds, Bio-Diversity, Health and Nutrition, Caring for our World, etc.

Method

- Large School: assign a class to care for the orchard from August to April, using the summer term to pass on skills and information to the next class
- Small School: assign vertical groups of pupils to each tree, so that older pupils pass down skills
- Photograph each tree in August, recording useful information: height, quantity of crop (heavy, medium, light, none) and the health of the tree
- Follow the annual programme of maintenance, recording changes regularly



Further Ideas

- Create a calendar or diary of your orchard year for the next group, for eco-assessments, other schools, CPD sessions or to sell for school funds
- Invite pupils to share their knowledge at assemblies, and with other schools



RELIGIOUS & MORAL EDUCATION IN THE ORCHARD

An Orchard Sukkot All ages Autumn

Rationale

The Jewish religion is commonly studied in schools and the festival of Sukkot seems to lend itself to an orchard setting. Eat apple fritters in an orchard Sukkah.

Aims

- To use orchard trees to create a shelter
- To use apples in an adaptation of a Jewish snack

Resources

Orchard trees, 10 long canes, string, tree prunings, cooking apples, plain flour, sugar, water, a knife, chopping board, mixing spoons, a large bowl, a spatula, oil, a portable gas stove, paper plates or napkins and a girdle or frying pan.

Method

- Choose an orchard tree with spreading branches, push 6 canes into the ground under it in two rows, each about a cane width apart. Tie a cane across 2 uprights at a time, using the last cane to go across the middle
- Attach tree prunings, laminated leaves, fruit pictures, etc to the horizontal canes. This is your Sukkah shelter
- Make a flour and water batter using 1 teaspoon of sugar to each tablespoon of flour. Peel and core the apples, cut into rings, coat with batter and fry in oil until browned on both sides



Further Ideas

- As you enjoy your apple fritters in the Sukkah, share the ways in which Jewish people celebrate Sukkot and the foods that are traditionally served



RELIGIOUS & MORAL EDUCATION IN THE ORCHARD

Other Festivals All ages

Rationale

Many schools like to include celebrations from other religious or secular festivals. It is nearly always possible to include orchard fruits.

Aims

- To incorporate orchard fruits into other world celebrations

Resources

Craft resources, nightlight candles, cooking ingredients and apples.

Method

- Chinese New Year (Jan-Feb): use apples joined together with cocktail sticks to make fearsome dragons. Add paper decorations using Chinese symbols
- Diwali (Oct-Nov): insert nightlight candles into the top of apples. Push a few cloves into the apple around the candle and enjoy the lights and aroma
- Jewish Hannukah (Nov-Dec): give fruit as gifts, play games with firm apples, make apple fritters, muffins and turnovers



Further Ideas

- Study religious and secular festivals from other lands and try to incorporate orchard fruits into the celebrations



Your own ideas for Religious and Moral Education in the Orchard



ARTS AND CRAFTS IN THE ORCHARD

Giving a purposeful context for

- creating and designing
- making good use of natural resources
- developing observational skills
- studying the work of environmental artists





ARTS AND CRAFTS IN THE ORCHARD

Fruity Colours Ages 7-12 **Autumn**

Rationale

Orchard fruit colours can range from deepest maroon to almost white with shades of red, yellow, green, russet and brown between. Still-life art often contains minutely observed orchard fruit.

Aims

- To identify and match colours to fruits
- To create these colours through mixing and discussion
- To paint orchard fruit with colours, patterns and markings closely resembling the actual fruit

Resources

Paint sample cards in reds, yellows, greens and browns from a DIY shop, paints to include red, yellow, green and white, brushes and mixing trays, paper, and orchard fruits chosen for variety of colours and patterns.

Method

- Study fruits and name colours, using vocabulary of shades, comparison (lighter, deeper, etc) and recognised terms such as lime-green, crimson, russet, etc
- Use the paint cards to try to match the fruit to the colours
- Practise mixing colours to match
- Create images of orchard fruits to resemble the real ones as closely as possible



Further Ideas

- Study the work of artists - look online for 'still-life art with fruit'
- Make up new names for apples using their colours as inspiration
- Discuss why fruit colours appeal: would we want to eat a blue apple?



ARTS AND CRAFTS IN THE ORCHARD

Apple Printing All ages Autumn

Rationale

If you end up with lots of windfall apples, thinnings of fruit or fruit too sour to eat, they will be ideal as a resource for printing.

Aims

- To create designs using apples
- To explore different colours and shades through mixing, overlapping and blending

Resources

Windfall apples (remember to put them on the compost heap afterwards), paints (red, green, yellow), paper, paintbrushes, kitchen roll or paper towels.

Method

- Prepare dishes with separate colours of paint, each with one or two dedicated brushes
- Cut apples in half, some vertically to show the core, the rest horizontally to show the hidden star inside
- Wipe cut surfaces of apples on kitchen paper to absorb excess juice
- Paint directly onto the apples, then press onto paper with the flat of the hand. Repeat the printing a few times before renewing paint
- Experiment with colour mixes, overlapping prints, etc



Further Ideas

- Print onto fabric, attach beads or stitches to create pips and frame or make into a greetings card
- Print onto cardboard to frame an orchard photograph



ARTS AND CRAFTS IN THE ORCHARD

Collages All ages

Rationale

An orchard collage can be an extensive project where captions, photographs, stories and poems are added to artwork, as seasons change and pupils' knowledge develops.

Aims

- To create an orchard collage showing the cycle of annual growth of a fruit tree, season by season
- To display lots of information and creative artwork
- To develop a variety of collage skills using junk materials, fabrics and a wide range of art skills

Resources

Dedicated display space, art resources, scrap fabrics, wools and threads, photographs, etc.

Method

- Visit the orchard and discuss how it will change and evolve over the seasons
- Create a large bare tree shape, including its root structure, using paint, coloured wools, fabric etc
- Divide the tree into 4 seasons and visit the orchard in September, November, March and May, taking photographs, creating artworks, adding poems and stories to suit each season
- Display the wonderful, finished tree across the school, and share all you have observed



Further Ideas

- Attach leaf and fruit shapes to show when maintenance tasks were carried out, for example weeding around the base, picking off caterpillars, or removing tiny underdeveloped fruits



ARTS AND CRAFTS IN THE ORCHARD

Orchard Cartoons **Ages 8-12**

Rationale

Many fruit varieties have names which lend themselves to cartooning, eg Pig's Snout, Lemon Queen, Domino.

Aims

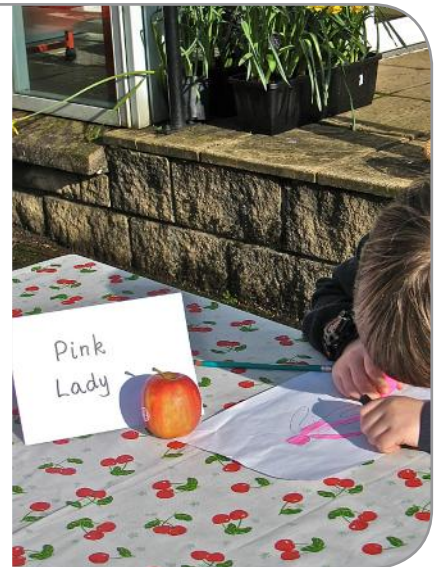
- To draw cartoon images which reflect the names of orchard fruits

Resources

A list of fruit names (see Appendix 7, p133), paper (quarters of an A4 sheet are a good size) and pencils, felt pens and crayons.

Method

- Discuss some of the names suggested, and others you have sourced and invent some apple-name stories
- Explore ways of creating these fruit names in drawings
- Develop this into a game where pupils have to suggest the name of the fruit from the drawing
- Create cartoon drawings of the fruit trees in your orchard, laminate and attach to the trees; display with photographs of the trees



Further Ideas

- If you plant apple pips and they produce trees with fruit (takes 5 years), you can name these new varieties as you choose. Imagine that you have a range of new apples, decide on their colouring, and suggest names for them in cartoon form



ARTS AND CRAFTS IN THE ORCHARD

Ephemeral Art All ages

Rationale

Ephemeral art, by its very nature is created for the moment. Working outdoors, with as many natural resources as possible, wonderful creations last just enough for a photograph.

Aims

- To study the works of ephemeral artists
- To explore the creation of ephemeral art in the orchard

Resources

Examples of ephemeral art by Andy Goldsworthy and others (look online for 'ephemeral art'), natural materials: (some of these) grasses, pebbles, flowers, windfall apples, straw (hamster bedding), leaves and twigs, hedging offcuts, cones, etc (ask pupils to bring in as much as they can).

Method

- Look at the work of some ephemeral artists, who may use only one or two resources to create wonderful works
- Use your fruit trees as a backdrop, the space around them or the trees themselves to explore creating artwork with natural resources
- Photograph the results and display
- Leave the materials for pupils to explore making other ephemeral art at playtimes



Further Ideas

- Repeat with one or two criteria, eg use only two resources; create your work against the tree trunk; create a central hole in the artwork; make an apple or pear the centrepiece of your work



ARTS AND CRAFTS IN THE ORCHARD

Head-dresses All Ages

Rationale

Celebrate spring, summer or autumn in your orchard with seasonal head-dresses.

Aims

- To use craft-work and natural resources to make simple seasonal head-dresses, learning about orchard seasonal changes in the process

Resources

Strips of card long enough to circle each pupil's head (don't join ends until finished), pressed leaves and flowers, tissue paper, fruit and insect shapes and drawings, thread, fabric and wools, etc.

Method

- Decide which season you will celebrate, visit the orchard and observe the trees for growth, insect life, leaf colours, fruits, blossom etc
- Decorate the paper strips with colourful pictures, pressed leaves, insect drawings, etc
- Join strips to fit pupils' heads, adding strips across the crown if necessary (particularly for nursery children) and have an orchard parade around the school and in the orchard



Further Ideas

- Create a special head-dress for a May Queen, The King of the Pippins, etc
- Make papier-maché hats (Art in the Orchard p 91) to suit the season

ARTS AND CRAFTS IN THE ORCHARD

Papier-Maché Hats All ages

Rationale

Papier-maché work is fun to do if you can devote more than one session to creating 3D objects. Here is an orchard idea that works well.

Aims

- To use papier-maché to make individual fruity hats

Resources

Lots of newspaper, wallpaper paste made up in shallow containers, table coverings, balloons, string, small twigs or paper straws and paints.

Method

- Blow up each balloon and tie the opening firmly. Sit the balloons in bowls to hold them steady
- Tear newspaper into long strips about 4cms wide, draw them through the paste and cover all but the base of the balloons with at least 5 layers of strips
- Cover the twig or straw with papier-maché, flare out the end and attach it to the top of the balloon
- Leave until completely dry, burst the balloon and gently trim around the lower edge to fit pupils' heads
- Paint in fruity colours



Further Ideas

- Make giant fruit by covering whole balloons with papier-maché: round ones for apples, pear-shaped balloons for pears and several round ones joined together to make bunches of grapes. Burst the balloons when dry and suspend the painted fruits from the ceiling



ARTS AND CRAFTS IN THE ORCHARD

Badge-making All Ages

Rationale

Badges are a great way of identifying pupils in groups, praising efforts and as a creative activity. Use them to allocate orchard trees to different pupils, and for apple day teams.

Aims

- To create badges using a range of resources

Resources

Badge 1: Paper shapes, laminating sheets, safety pins and sellotape; Badge 2: Fimo, baking sheet, safety pins and glue; Badge 3: Hired badge-maker (from local council or library), paper circles (usually supplied), pens and crayons.

Method

- Badge 1: Draw bold colours onto fruit shapes, laminate each and attach safety pins with sellotape
- Badge 2: Make fruit shapes with colours of Fimo. Place on a baking sheet and bake as directed on Fimo packet. Glue on safety pins
- Badge 3: Create bright paper circles then follow the instructions for using the badge machine



Further Ideas

- Orchard tree groups can include the name of 'their' tree and could use cartoon drawings (Art in the Orchard, p88) for their badges

ARTS AND CRAFTS IN THE ORCHARD

Felting Fruits All Ages

Rationale

Felt-making is an ancient and enjoyable skill, and using orchards and their fruit as inspiration encourages colourful creating.

Aims

- To learn and practise the skill of felt-making
- To use felt-making to create 3D artwork

Resources

Wools designed for felt-making in red, green, yellow and brown, cheap soap, small empty milk cartons with holes punched in the lids, warm water, old towels to protect the tables, large-eyed needles, thick brown wool and some apples to show shape and colours.

Method

- Cut tablespoonfuls of soap pieces and put them into the milk cartons with warm water. Shake vigorously
- Give each pupil felting wools to make a round shape about the size of a tennis ball
- Soak each ball with soapy liquid and squeeze firmly, turning over and over for at least ten minutes until the wool has felted together
- Leave to dry for a few days, then using thick thread and a needle, make a stalk at the top and leaf remnants at the base



Further Ideas

- Create 2D pictures in felt of orchard fruits, trees, bees, blossom, etc by laying coloured wools on top of 5 alternating layers of white wool (first one up and down, the next side to side and so on), soaked in soapy water, placed between 2 layers of bubble wrap and rolled very firmly with a wooden rolling pin



ARTS AND CRAFTS IN THE ORCHARD

Sketching and Bark-rubbing All Ages

Rationale

If you have cherry trees in your orchard, you can see their distinctive bark patterns. Use mature fruit trees for good bark rubbings and sketching - probably best when they are bare in winter.

Aims

- To develop observational skills through bark-rubbing and sketching of winter trees in the school orchard

Resources

Wax crayons (greens and browns), paper, clipboards, pencils, charcoal sticks, cameras and kneeling mats (carrier bags filled with folded newspaper) or chairs.

Method

- Discuss the bark and patterns on a mature fruit tree
- Choose a clear space on the trunk, lay on a piece of paper and show pupils how to use crayons to make a rubbing. Encourage them to choose a clear area of bark and to hold the paper firmly
- Using paper on clipboards, look carefully at the shape created by a tree, and sketch with pencil or charcoal to show branches growing from the trunk and twigs from the branches. This should encourage drawings which move on from infants' 'lollipop' trees



Further Ideas

- Cut a frame shape from a bark rubbing, insert a sketch of the same tree, laminate and display beside photographs of the tree in spring and summer



ARTS AND CRAFTS IN THE ORCHARD

Orchard Bugs All Ages

Rationale

The study of insect life in the orchard can give the opportunity for some enjoyable bug-making activities.

Aims

- To look carefully at the insect life in the orchard, and those in books and online
- To use clay, natural and other resources to create models of these insects

Resources

Clay (choose air-drying), twigs, pipe-cleaners, google-eyes, feathers, leafy twigs (hedging is good), seed heads, grasses, etc, insect books and pictures.

Method

- Look at the insects on and around the orchard trees. Collect small ones carefully in pooters and study legs, body parts, wings, etc before releasing them
- Forage if possible for natural resources, then using a lump of clay about the size of a golf ball, encourage pupils to experiment with the resources provided to make an insect they have studied
- Photograph all the insects then either take them indoors to dry off, or find places in the orchard for them to gradually disintegrate



Further Ideas

- Discuss the usefulness or otherwise of the insects they have found: snails, slugs and greenfly will eat leaves and fruit, beetles, wasps and ladybirds will eat other insects whereas bees and butterflies will pollinate fruit blossom



ARTS AND CRAFTS IN THE ORCHARD

Apple Hogs **All Ages** **Autumn**

Rationale

If you have a good harvest of eating apples, the creation of apple hogs can be a good basis for discussion of maths and development of artistic skills. They are also good to eat.

Aims

- To use dessert apples creatively
- To follow detailed instructions

Resources

One apple per pupil, cocktail sticks (halved to give each pupil at least 10), cereal or crisps shaped like hoops, grapes or large raisins, mini-mallows, small paper circles and crayons.

Method

- Decide how the food ingredients will be shared, eg each pupil can use 15 mallows, 10 grapes, 12 hoops
- Pupils begin by drawing faces on the paper circles. These are attached to the apple using a halved cocktail stick and a mallow or grape for the nose
- Prickles are then made by putting food ingredients onto the halved cocktail sticks BEFORE pushing them into the apple
- Finish with an apple hog display, evaluating the use of the correct number of ingredients



Further Ideas

- Make a healthy-eating choice apple hog, using carrot slices, cheese cubes and raisins

ARTS AND CRAFTS IN THE ORCHARD

Orchard Witches Ages 7-12 Autumn

Rationale

It is probable that Hallowe'en falls at the time of year when most of your apple crop is past its best. Do this activity at least 2 weeks in advance noting that these apple witches are not edible.

Aims

- To use windfall apples and those beyond eating, creatively

Resources

Enough firm, good-sized windfall apples for one per pupil (mis-shapen ones will be excellent, as will those which are spotted or split), black paper, green wool, cocktail sticks, raisins and sturdy twigs about 15cms long.

Method

- Using a cocktail stick, make 2 holes for eyes in each apple, and a line of little holes for a mouth. Add a nose with 3 raisins on a halved cocktail stick
- Make a cone hat of black paper, stick green wool 'hair' on its inside and attach to the apple with pieces of cocktail stick
- Push a twig into the bottom of the apple and place it on a baking tray. Dry it out in a very cool oven overnight or better still, leave it on a radiator to shrivel into a witchy face for a couple of weeks



Further Ideas

- Experiment with making other creations out of apples and cocktail sticks: caterpillars, monsters, etc



ARTS AND CRAFTS IN THE ORCHARD

Poster Design **Ages 7-12**

Rationale

The creation of posters is cross-curricular, involving language, art and design as well as IT skills. Posters can be valuable to advertise all sorts of orchard events.

Aims

- To create posters for a variety of orchard events
- To extend skills in poster design through art and craft, IT skills and the use of appropriate language

Resources

Access to computing design programmes, art materials, paper and display spaces.

Method

- Consider and discuss what makes a good poster: font size, clarity and brevity of text, bold colours, good images, etc
- Plan the event you wish to publicise and highlight the important details of place, time, activities
- Select orchard images from websites, clip art and scanned pupil drawings, choose border patterns and use text colours of red, orange, green and brown
- Laminate posters and display widely



Further Ideas

- Design posters inviting birds to the bird-table, bees to the pear blossom, ladybirds to your fruit-tree leaves in spring



Your own ideas for Arts and Crafts in the Orchard



PE AND GAMES

IN THE ORCHARD

Giving indoor and outdoor opportunities to develop:

- skills and agility
- team work and co-operation
- listening to instructions
- following game rules





PE AND GAMES

IN THE ORCHARD

Hunt the Apple Ages 7 -12

Rationale

This is a good game for the end of the day, when shouting is permissible! Use the Gym, before large equipment is put away or the classroom at the end of the day.

Aims

- To work co-operatively, in a team and in pairs

Resources

A blindfold and an apple per team, a largish room with ample clear space, but with some obstacles to negotiate (desks and chairs, PE equipment, etc).

Method

- Divide pupils into teams and allocate each a space or corner to sit in
- Each team chooses one person to be blindfolded and one to be a guide; these two leave the room while the rest find a hiding place for their apple
- When the two return, their team has to shout instructions to go forward, back, etc to find their hidden apple. As all teams are shouting, it become rather noisy. (Teams should ensure that the guide takes good care of the blindfolded person)



Further Ideas

- For a quieter version, choose one person to leave the room, the rest to hide the apple, and then to give instructions in the foreign language being studied, or in mathematical terms eg 5 steps forward, one quarter turn anti-clockwise, etc



PE AND GAMES IN THE ORCHARD

Apple Hoops All Ages

Rationale

Team games play a lively part in the PE curriculum. This one is adapted from a game being hugely enjoyed at an Apple Festival in Spain.

Aims

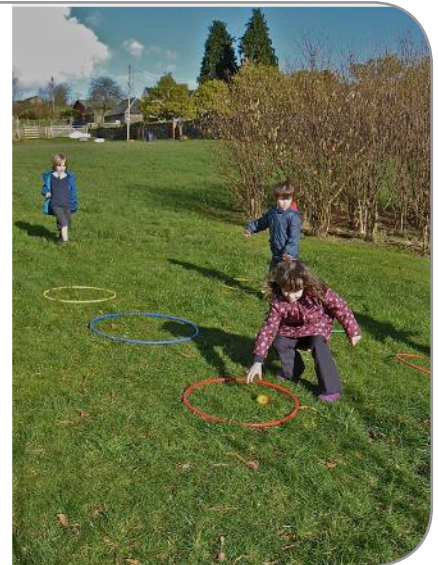
- To enjoy the challenge of a team game, using fruit as a resource

Resources

One apple and 5 small hoops or rings per team of 10.

Method

- Divide pupils into teams of 10 and mark out a starting line
- Arrange the hoops in front of each team in a long line
- The 1st person in each team runs up to put the apple in the first hoop running back to the team before the 2nd moves it to the second hoop and so on. The 6th person moves the apple back one hoop, and so on, with the 10th person bringing the apple back to the starting line
- The winning team is the first back with its apple



Further Ideas

- Adapt for smaller numbers, using half the number of hoops to match the number of pupils in the team



PE AND GAMES IN THE ORCHARD

You Are Out! Ages 7 -12

Rationale

Use orchard fruit to create a game with eliminations somewhat like 'Pass the Parcel' except that it introduces vocabulary of position.

Aims

- To understand positional directions as part of a team game

Resources

An apple, a pear and a plum each in a rigid plastic cup, a second adult helper and elimination position cards (see Appendix 8, p134).

Method

- Seat pupils in a large circle and give three pupils at random the cups with the fruit in
- Begin passing the cups round the circle clockwise until the helper shouts 'STOP'. Choose one position card and eliminate the person it refers to
- Continue until nearly all pupils are eliminated



Further Ideas

- Ask pupils to pass one cup behind their backs. Select one person to stand in the middle with his/her eyes closed until the passing has started, then they should try to guess where the cup is while pupils continue to pass it or act as if they are passing it



PE AND GAMES IN THE ORCHARD

Over, Under Game Ages 7 -12

Rationale

Team games are a good way to develop co-operative skills and to follow instructions.

Aims

- To listen carefully to instructions and to use these to join in team games

Resources

Firm apples, one per team. For each team using the further idea, a die, newspaper, an large, firm apple, a length of string and a pair of gloves.

Method

- Divide pupils into equal teams and arrange in lines
- 1) Practise passing the apple over heads one by one to the person at the back who runs up to the front and continues passing until everyone is back in their original places
- 2) Repeat but this time pass the apple between everyone's legs
- 3) Repeat alternating passing over then under



Further Ideas

- Give each team a die, newspaper, an apple, string and a pair of gloves. The winning team will be the first to wrap and tie up their apple, however players can only begin to wrap up the apple if they throw a six on the die. Every time another player throws a six, he/she has to take over from the person doing the wrapping



Your own ideas for PE and Games in the Orchard



DRAMA AND MUSIC

IN THE ORCHARD

Giving a useful and interesting context to:

- encourage discussion and sharing of ideas
- creativity
- experimenting with sounds and voices
- presenting and experiencing drama





DRAMA AND MUSIC IN THE ORCHARD

Orchard Sounds All Ages

Rationale

Your orchard will be full of sounds: bird-song, leaves rustling, bees buzzing, rain and wind, and more.

Aims

- To create a soundscape of an orchard through the seasons
- To explore and create a variety of 'instruments' to illustrate these sounds
- To compose a sequence of sounds to share at orchard events and assemblies

Resources

Pupils' voices, orchestral instruments some will play, percussion instruments, pupil-made sound effects with, eg gravel on a tray, rusty paper, sand, combs and paper, whistles

Method

- Spend time in the orchard over a week in summer. Note the sounds you have heard and find words to describe what they sound like
- Assemble a variety of resources for pupils to experiment re-creating the sounds
- Plan a sequence of sounds to describe an orchard day: early morning birdsong, weather effects, children's voices
- Consider how these sounds might change in winter, during a storm, if a herd of deer visit, etc



Further Ideas

- Listen to music composed to show bird-song, running rivers, mountains and floods
- Tell the story of your orchard with sounds alone or with voices included to show a day in the orchard, or a year



DRAMA AND MUSIC IN THE ORCHARD

Kicking up a Storm All Ages

Rationale

We had great fun composing a storm sequence while doing a project on rainforests. It seemed just as appropriate to imagine such a storm in an orchard.

Aims

- To create the sequence of a torrential rain-storm
- To encourage observational skills
- To extend this with older pupils to create a 'follow my leader' sequence

Resources

A reasonable space, preferably with a wooden floor, and a group of pupils.

Method

- Seat everyone in a circle with legs stretched out in front
- Practise the following movements: finger clicks, rubbing hands together, tapping flat hands on the chest, slapping thighs, leaning back on elbows and drumming feet on the floor
- Discuss a storm, and how these movements can replicate its gradual build-up and decline
- Choose a responsible person to lead the changes of movements and create the storm's rise and fall



Further Ideas

- With older pupils, extend the sequence to a 'follow my leader' so that the movements start with only one person finger-clicking, letting it gradually extend around the circle clockwise, with each person only changing the actions when the person on their right has done so



DRAMA AND MUSIC IN THE ORCHARD

A Lost Orchard Ages 8-12

Rationale

Eco-Drama (www.eco-drama.org.uk) has created a fantastic show about an orchard in danger of becoming 'lost'. Imagine why this could happen and create a drama about its rediscovery.

Aims

- To create a drama about an orchard which is in danger of becoming lost
- To learn that old trees can be grafted and people motivated to help to preserve neglected orchards

Resources

A reasonable space and imaginative pupils, access to a mature orchard if possible.

Method

- Consider and discuss what could happen to an old, forgotten orchard, (the land sold for buildings, owners dying without heirs, disease spreading)
- Create a drama where some pupils find an old orchard, rediscover amazing fruit crops, etc. Discuss what could be done to save the orchard
- In development work include the idea of campaigns, meetings, work-parties
- Enjoy everyone's contribution, and video the drama



Further Ideas

- Invite a fruit expert to demonstrate grafting a scion or twig from an old tree onto new root stock, showing how old tree varieties can be saved and new orchards created



DRAMA AND MUSIC IN THE ORCHARD

Johnny Appleseed All Ages

Rationale

Stories are told of John Chapman who travelled across America long ago, planting apple cores along the way, which grew into fruit trees. He became known as Johnny Appleseed.

Aims

- To create the story of Johnny Appleseed in words and sounds
- To consider and discuss what his world would have been like

Resources

Pupils' voices, orchestral instruments some will play, percussion instruments, pupil-made sound effects, a relief map of America and an apple cut open to show its pips.

Method

- Role-play Johnny's life, travelling in all weathers, meeting danger from wild animals, native peoples, etc
- Revise to show that Johnny made friends with wild animals through gentle non-threatening behaviour, learned from the native people about medicinal herbs and was welcomed by settlers who found fruit trees on their land
- Use instruments and voices to create the effects of weather, animals, etc



Further Ideas

- There is a musical play about Johnny Appleseed with songs and drama suggestions
- Create the idea of a traveller in other lands, meeting indigenous peoples, encountering wild animals and extremes of weather



DRAMA AND MUSIC IN THE ORCHARD

Orchard Treasure All Ages

Rationale

The best treasure in an orchard drama will be the pips which could grow into new fruit trees.

Aims

- To create a treasure hunt in drama with pupils' suggestions of treasure, ending with the best for an orchard - apple pips

Resources

Paper copies of a map of the school orchard, pencils, a variety of 'treasures', eg coins, gold paper-covered objects, a bag of sweets, small flower pots, compost and a pot of apple pips.

Method

- Divide the class into groups: one for each 'treasure' and one more as seekers. Use the map to decide where each treasure is buried, or if outdoors, bury them
- Each group rehearses why their treasure is best while the seekers decide on the order of finding
- Send the seekers out to discover the treasures, leaving the pips till last
- Plant the pips in soil, keep them indoors and well-watered and if shoots grow, transplant them into larger pots in the spring



Further Ideas

- The seekers' group could make a map of their treasure journey while the other groups could make posters of why their hidden treasure is best



DRAMA AND MUSIC IN THE ORCHARD

Orchard Chants Ages 9-12

Rationale

Sound poems, shouts and chants are fun to build up and perform. Explore orchard vocabulary and create sound pictures.

Aims

- To create orchard sound pictures through words and voices

Resources

Pupils' voices, and a bank of words (colours, sounds, etc) suggested by pupils.

Method

- Seat everyone in a large circle. Imagine the preparation and eating of an apple. Starting quietly, build up phrases for pupils to repeat lots of times, not in chorus but overlapping, such as: smoooooooooth skin, red and yellow, sharp knife, peel and peel and peel, lo-o-o-o-ng skin, juicy juice, open wide, CRUNCH!
- Try this again with the growth of a tree: teeny, tiny pip, drip, drip raindrops, wa-a-a-rm sunshine, tree is growing, green, green leaves, look at the flowers, buzzzzzzing bees, nearly ready, (tongue-twister) RED APPLE, YELLOW APPLE!



Further Ideas

- Try using changes of weather sequences building up from cold, cold winter to hot, hot summer



Your own ideas for Drama and Music in the Orchard



CELEBRATIONS IN THE ORCHARD

Giving ideas for appreciating fully:

- the huge variety of weather and seasonal changes
- local and national events
- special days and times of year
- the joys of your orchard and its value and importance





CELEBRATIONS IN THE ORCHARD

Seasonal Celebrations All Ages

Rationale

If you can celebrate your orchard through the seasons, this will guarantee its well-being and give good reasons to explore all its seasons.

Aims

- To create a range of activities for spring, summer, autumn and winter celebrations

Resources

Cameras, bird feeders, wool, feathers, stuffing, hair-clippings, coloured paper, laminates, seeds and plants, pots, compost, cooking ingredients, nuts and seeds, pop-corn, bug hotel resources (see below), flower pots and string, etc - depending on the seasons you celebrate.

Method

- **SPRING:** new leaves; put wool, feathers, stuffing, hair-clippings into bird feeders; dress trees with laminated green leaves with good wishes for blossom time
- **SUMMER:** blossom, fruits, bees and butterflies; place pots of wildflowers, chives, lavender and nasturtiums around trees; dress trees with poems on bee shapes
- **AUTUMN:** autumn colours; make jams and jellies, pies; dress trees with autumn leaves as thanks for harvest
- **WINTER:** bare branches, frost and snow; attach bird feeders; dress trees with icicle wishes for a safe winter



Further Ideas

- Make a bug hotel out of layers of pallets filled with slates, logs, flower pots filled with straw, etc, or just stuff hollow twigs into flower pots, to create safe dry places for insects to hibernate
- Create a seasons' calendar of tree-poems and photographs



CELEBRATIONS IN THE ORCHARD

May Blossom Day All Ages

Rationale

In May, when your trees are at least three years old, you should have a wonderful display of blossom, well worth celebrating.

Aims

- To use a variety of resources and activities to celebrate and learn more about orchard tree blossom

Resources

Paper (plain, coloured, tissue), paints, brushes, picnic food and drinks, wild-flower seeds, pots and compost.

Method

- Follow Science Activities on pollination, p51-52
- Use art resources to make headbands with blossom, leaves, bees and butterflies
- Dress trees with words about spring, colours, flowers, smells, and sounds
- Have a picnic lunch in the orchard
- Sow wild-flower seeds in pots to stand with your trees
- Invite a bee-keeper to tell about their importance in pollination and fruit production



Further Ideas

- Decorate plain biscuits with pink and white icing and tiny flowers made from fondant icing
- Stir teaspoonfuls of runny honey into tablespoonfuls of plain yoghurt, pour into ice-lolly moulds, insert lolly sticks and freeze



CELEBRATIONS IN THE ORCHARD

Summer Orchard Picnic All Ages

Rationale

What could be better, near the end of the summer term, than a themed picnic in your orchard!

Aims

- To plan, prepare and participate in a summer picnic
- To use a variety of orchard-themed resources

Resources

Apples, recipe ingredients, (see Appendix 2, p128 for ideas) art, craft and PE resources depending on activities chosen.

Method

- Plan your event: who to invite, what refreshments will be needed, and what activities you will do
- Send out invitations and collate the replies
- Prepare, with parent help, some recipes using orchard fruits and make up a programme of events: an orchard trail, games and drama, a quiz, depending on the age group
- Arrange seating in and around your orchard and remember to take lots of photographs



Further Ideas

- Plan an autumn picnic where food is autumn-coloured with lots of your own harvest in recipes or a winter picnic with hot apple and carrot soup and apple buns with frosted icing



CELEBRATIONS IN THE ORCHARD

Apple Day All Ages

Rationale

National Apple Day, instigated by Common Ground in 1991, is now celebrated widely on or around 21st October. Choose a date to suit your school and celebrate your orchard.

Aims

- To use a variety of resources and activities to celebrate Apple Day

Resources

Orchard fruits, recipe ingredients, art and craft resources, internet access, etc, depending on activities chosen (see Appendix 9, p135 for Apple Day celebration ideas).

Method

- Try to choose a day when as many pupils as possible can participate. In some schools, each class plans or takes part in a different activity, in others, pupils follow a rota of activities
- Ensure that at least one activity takes place in the orchard or design a quiz to take pupils round it
- Report all the activities at assembly, share photographs in a display and include everything in your Eco-School events folder



Further Ideas

- Invite other classes, other schools, nursery pupils, parents and carers to share Apple Day with you. If you have planted pips, give them out, with instructions, to be nurtured at home

CELEBRATIONS IN THE ORCHARD

Hallowe'en All Ages October

Rationale

Hallowe'en is discouraged in some schools, but if not in yours, use it to enjoy a range of orchard fruit-related activities.

Aims

- To use apples and other recipe ingredients in a variety of Hallowe'en activities

Resources

A large baby bath or similar, eating and windfall apples, 2 cooking apples stewed with a little sugar, forks, towels, green jelly, fondant icing, blue, green and black food colouring.

Method

- Use the large bath for dooking for apples, either by kneeling to catch them in teeth or by using dropped forks while kneeling on chairs
- The day before, make up a green jelly using stewed apple as part of the liquid quantity. Add 2 drops of blue food-colouring and leave to set to a spooky colour
- Use fondant icing to make apple and pear shapes. When dry, paint with food colouring to make witchy faces and top with black paper cone hats



Further Ideas

- Cut a circle from the top of windfall apples, push in night-light candles and use to illuminate your Hallowe'en party room



CELEBRATIONS IN THE ORCHARD

Greener Christmas All Ages

Rationale

As a welcome change from making decorations with tinsel and glitter, use natural resources and apples to make a greener Christmas in your school.

Aims

- To use a variety of natural resources in the making of Christmas decorations

Resources

Apples, night-light candles, greenery from holly or cupresses bushes, cloves, spices, string, red ribbon, fir cones, reasonably fine wire, tin-foil, peel-off labels and cocktail sticks.

Method

- Cut apple rings, dry for 20 mins at a very cool microwave setting, thread onto string interspersed with fir cones tied on with wire to make garlands
- Cut circles in the tops of apples, insert night-light candles and push in cuttings of greenery well-below the candle flame. Slice the bases to make them steady
- Prick apples all over with cocktail sticks, push in cloves, roll apple in mixed spices and leave to dry
- Wrap apples in tinfoil, push in greenery. Make name flags with labels for a Christmas party meal



Further Ideas

- If you have a Christmas tree, decorate it with fat balls and popcorn strings for birds to enjoy after the end of term



CELEBRATIONS IN THE ORCHARD

British Festivals (1) All Ages

Rationale

Food plays a large part in most festivals, and apples can be incorporated into all suggested here. Consider each festival as it comes along and enjoy its fruity potential.

Aims

- To suggest ways in which apples can be incorporated into a variety of annual celebrations
- To challenge pupils to devise other ways of using orchard fruits

Resources

Art and craft resources, recipe ingredients, apples and a seasonal calendar.

Method

- Epiphany (Jan 6th): apple gifting - an old tradition of giving apples studded with grains and herb sprigs
- Shrove Tuesday (Early Feb): roll up your pancakes with a filling of cooked apple and brown sugar
- Valentine's Day (Feb 14th): use fruit images to make a card with messages such as "You are the Apple of my Eye", "We would make a fine Pear", "I'm just Plum-crazy for You", "You are my Cherry Blossom", etc
- Commonwealth Day (Early March): sample apples and fruity recipes from Canada, New Zealand and Australia



Further Ideas

- Celebrate Mothering Sunday (end of March) by baking apple and fruit cakes in small empty baked bean tins and giving with an apple-printed card



CELEBRATIONS IN THE ORCHARD

British Festivals (2) All Ages

Rationale

As the year progresses, you will find lots of other British festivals to enhance the curriculum, with their customs, history, poetry and art. Incorporate orchard fruits wherever you can.

Aims

- To use a variety of resources and activities to celebrate British annual festivals

Resources

Art and craft resources, recipe ingredients and apples.

Method

- Easter (March-April): roll apples to reach targets chalked on the floor. Make thin strips of pastry into cross shapes, lay on slices of apple, sprinkle with lemon juice and sugar and bake
- All Saints' Day (Nov 1st): find out about the saints who have had fruit named after them - St Ailred, St Cecilia, St Martin
- Armistice Day (Nov 11th): tie poppies onto one of your fruit trees in remembrance of the men of your community who died in the two world wars



Further Ideas

- Celebrate royal events: enjoy Victoria plums, make Queen of Puddings, decorate apple pies with crown pastry shapes, decorate a sponge or buns with Royal icing
- Challenge pupils to incorporate fruit into a Father's Day celebration



CELEBRATIONS IN THE ORCHARD

Tree-Dressing **All Ages**

Rationale

A very good way to celebrate your orchard, ensure its good care, revise and extend vocabulary and share information is to 'dress' your trees - loosely tying on labels.

Aims

- To use a variety of resources and ways to dress orchard trees
- To use this process to revise knowledge, share information and inform the school community

Resources

Orchard trees, paper shapes, string, ribbons, laminator and laminating sheets (when laminating for outdoor use, leave a part of the sheet as clear laminate, then any holes punched through this part will not become filled with rainwater).

Method

- Use coloured card with nouns, verbs and adjectives describing your trees and their leaves/blossom/fruits
- Use apple and pear shapes with acrostic poems and haikus written on them
- Create a bank of taste, colour and texture words
- Use vocabulary from the foreign language being studied
- Make eco-advice labels: "No fruity food miles here", "Bees are our pollinating friends", etc



Further Ideas

- Take photographs of pupils who care for the trees, add their comments and what they do and hang these from the branches
- On Apple Day, invite everyone to write a few words about the orchard on fruit shapes and tie them loosely onto the trees



CELEBRATIONS IN THE ORCHARD

Winter Festival All Ages Winter

Rationale

On a cold, clear day, a visit to the orchard to have a Winter Festival gives the opportunity for a range of wintry activities and the chance to see that all is well in the orchard.

Aims

- To use a variety of resources and activities to celebrate the orchard in winter
- To establish an annual custom for your school
- To make sure that the trees are in good condition for surviving the winter months

Resources

Depending on the activities chosen: orchard trees, paper shapes, laminating sheets and laminator, string, ribbons, evergreen hedging, runny honey, fine bird seed, long sturdy sticks, warm fruit juice and cinnamon.

Method

- Dress the trees with wintry words on laminated icicle shapes
- Coat greenery with honey, sprinkle on bird seed and attach with string to trees to feed birds in winter
- Make up an orchard shivery dance, add percussion sound effects and perform it round the trees
- Beat the bounds (perimeter) of the orchard in a long line, stamping feet or beating the ground with sticks
- Set up a Nativity scene among the trees and sing Christmas carols



Further Ideas

- Share the custom of Wassailing, by serving everyone with some warm fruit juice laced with a little cinnamon, and inviting them to pour a little on the tree roots and say, "A drink for me and a drink for my tree"



Your own ideas for Celebrations in the Orchard



APPENDICES



1. Acrostic Poems and Haikus
2. Recipe Suggestions
3. Orchard Maintenance
4. Star Evaluation Sheet
5. Orchard Trail Questions
6. Scottish Apple Varieties
7. Fruit Names
8. Elimination Game Cards
9. Apple Day Suggestions



APPENDIX 1

ACROSTIC POEMS

An acrostic poem starts each line with the letters of a chosen word. Choose a short but descriptive orchard word related to texture (JUICY, CRUNCH), colour (GOLDEN DELICIOUS) name (GEORGE CAVE, GRANNY SMITH, STIRLING CASTLE).

Autumn fruits hang from the trees,

Pippins and russets and tiny crabs.

Preserve them and save them,

Luscious and juicy, dripping with flavour,

Enjoyed by all children,

Sunshine's harvest in each bite.

HAIKU POEMS

Haikus are short with a specific number of syllables in each line: line one has seven, line two has five, line three has seven. It is a good idea to tap the syllables as the haiku is read aloud.

Apple blossom pink and white

In the orchard at night-time

Bees and butterflies

Creeping and sliding

Seek sweet nectar and pollen

Tiny mice and slugs and snails



APPENDIX 2

RECIPES (to share among a class of 30 pupils)

Apple Jelly

Ingredients: 2 green jellies, 2 large cooking apples, 2 tablespoons sugar, boiling water

Method: Stew the cooking apples with a very little water, add the sugar and purée. Measure and make up to the required amount with boiling water. Stir in the jellies, mix well and leave to set. For a special effect, add drops of food colouring

Apple and Cheese Puffs

Ingredients: packet of puff pastry, 4 eating apples, 250g cheddar cheese

Method: Roll out pastry into a rectangle and divide in half. On one half lay slices of peeled and cored apple. Top them with grated cheese. Dampen the pastry edges and lay on the second half, pressing edges together well. Bake for 30 mins at 200°C

Chocolate Apples

Ingredients: one eating apple per pupil, milk chocolate cooking blocks (allow 1 block per 10 pupils), hundreds and thousands (allow 1 tub per 10 pupils), lolly sticks

Method: Wipe each apple and push a lolly stick into the base. Melt the chocolate in the microwave and swirl each apple in it until nearly covered. Sprinkle on hundreds and thousands and stand the apples upside down on greaseproof paper to cool. (This is easier, less messy and much safer than making toffee apples).

Apple Fritters

Ingredients: use 2 tablespoons self-raising flour, 2 teaspoons caster sugar and 1 large cooking apple per 5 pupils, oil and extra sugar.

Method: Make a batter with the flour, sugar and enough cold water to make a smooth, thick mixture. Peel, core and grate the apple and mix it into the batter. Fry tablespoons of the mixture on a hot, greased girdle until both sides are nicely browned. Serve on napkins or paper plates.



APPENDIX 3

ORCHARD MAINTENANCE

General:

- Keep an area weed-free around each tree by using a mulch of bark and by weeding regularly
- Use guards to protect bark from rabbits and strimmers
- If the summer is exceptionally dry, give the roots of each tree a good soaking once a week
- Check for branch damage regularly and remove anything which looks diseased, damaged or dead

Winter:

- Between November and February, major pruning should be done on apple and pear trees more than 3 years old; clean the blades of secateurs and loppers with methylated spirits before pruning each tree, and remove any branches which are dead, diseased, or damaged
- Prune free-standing trees to create an open goblet shape with 5 main branches and an open centre

Spring:

- Check regularly for caterpillar damage on leaves
- Plant lots of wild flowers to attract pollinating insects

Summer:

- During July, thin out fruits so that all the very small ones are removed, and allow one fruit to grow at approximately 10cm intervals along each branch
- Carry out the major pruning of plum and cherry trees now, removing branches as for apples and pears
- Take expert advice if possible before pruning cordon and espalier pear and apple trees where each branch growing from the main structure is cut back to about 10cms. Check that branches are tied securely, but not too tightly to their frames

Autumn:

- When apples start to drop, harvest those that are ready. Check by gently twisting the apple. If it is ripe, it will come off easily
- Pears will be ripe if they come off when gently lifted upwards
- Store apples in a refrigerator if not being eaten right away
- Check tree ties are not too tight and stakes are firmly positioned



APPENDIX 4

STAR DESIGNS

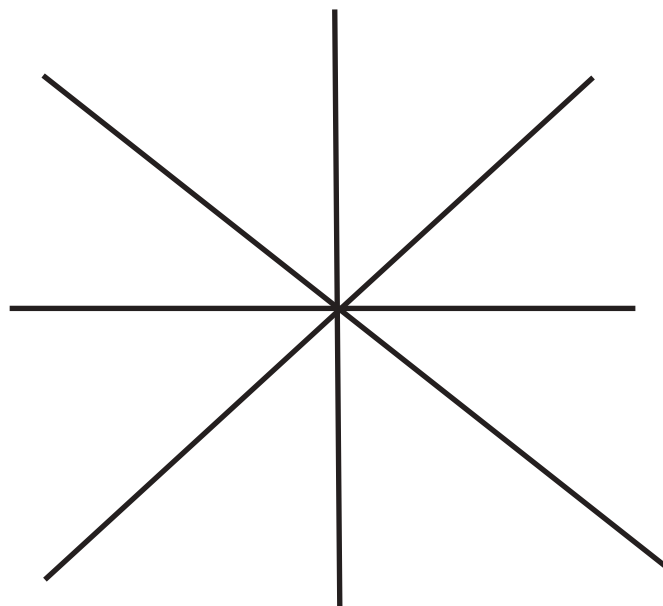
Star designs can be drawn onto worksheets, large A3 pages for display, on the interactive whiteboard for class use and on the playground for a wide variety of purposes.

Create a star shape with 4 lines crossing each other at the centre. Mark the centre with a 0, then evenly space 1-6 along each line from the centre outwards.

Through discussion, label the end of opposite lines with opposite words: sweet/sour, dry/juicy, soft/hard (or crunchy), red and not red, noting that the opposite of red is not green, but 'not red'!

When tasting apples, allocate a number to each choice so, for example, if an apple scores 4 on 'sweet', it will only score 2 on 'sour'.

Mark each choice with a coloured dot, joining these in order around the star to give a shape. Use a different colour for each new fruit tasted.





APPENDIX 5

QUIZ TRAIL IDEAS

Give three options of an answer, where revision of facts is the reason for the quiz. For very young children, the answers can be pictorial.

Which apple can you buy in the shops?

Granny Jones

Granny Smith

Granny McLean

Which plum has the name of a queen?

Mary

Elizabeth

Victoria

What might happen if you drop an apple? It will

Explode

Bruise

Disappear

Tree bark can be badly damaged by:

Hedgehogs

Rabbits

Spiders

Apples can grow in:

South Africa

Central Africa

North Africa

Apple Blossom is usually pollinated by:

Spiders

Wasps

Bees

An apple is called a Pippin if it:

Comes from 'Lord of the Rings'

Has no pips inside

Is grown from a pip

Apple tree growers feed their apple trees with:

Bone-meal

Oatmeal

Mealy bugs

Caterpillars are pests which eat:

Apples

Tree bark

Leaves

If you cut an apple in half crossways inside you will find:

A triangle

A star

A circle

An orchard can also contain:

Oak trees

Pear trees

Fir trees



APPENDIX 6

Here is a list of a few Scottish apple varieties with some information about their origins.

Bloody Ploughman: from the Carse of Gowrie, an eating apple, which is blood-red right through, with a deep red skin. Said to be named after a ploughman who was shot stealing apples, one of which grew subsequently into this variety. It has a sharp, juicy flavour.

Cambusnethan Pippin: possibly from Cambusnethan Monastery, a sweet, light-flavoured dual purpose apple.

Coul Blush: from Coul, Ross-shire, a golden apple flushed with red. It tastes equally good raw and cooked.

Galloway Pippin: from Wigtown in Galloway, a large, yellow cooking apple with russet freckles. Best used as an early cooking apple.

Hood's Supreme: from Edzell in Angus. This is a large sweet eating apple.

James Grieve: from Edinburgh. This is a yellow and red apple, which has a sharp, delicious flavour and a smooth greasy skin.

Oslin: from Arbroath, also known as the Arbroath Pippin. This is a yellow apple with pink dots. It has a good, sharp flavour, with a hint of aniseed.

Stirling Castle: from Stirling. This is a large, greenish apple which has plenty of flavour when cooked.

White Melrose: from Melrose, this apple is large with a ribbed surface and a pale lemon skin. It has a good, sharp flavour when cooked.

Thorle Pippin: a Scottish apple which is very flat-shaped, like a whorle which used to be used for spinning wool at the end of a spindle. It is a small eating apple with quite a sharp flavour.



APPENDIX 7

FRUITY NAMES

All of the names listed below are apple varieties! They will lend themselves to the 'Guess which Apple I am' drawing activity.

Cockpit Red-Sleeves Royal Jubilee Stirling Castle

Discovery Twin Bee Gala Bullock Chorister Boy

Fireside Crimson Spy Curl Tail Irish Peach

Goldilocks George Cave Isaac Newton's Tree Pixie

Lady's Finger Pink Lady King of the Pippins Queen

Lemon Queen Pearl Robin Underleaf

Cola Domino Double Rose American Mammoth

Apple Royal Banana Black Jersey Cadillac

Catshead Duck's Bill Eighteen Ounce Hawkeye

French Crab Green Goose Greensleeves

July Flower Mackintosh Red Old Lady

Paris Apple Pig's Nose Sunset The Doctor



APPENDIX 8

'YOU ARE OUT' ELIMINATION CARDS

Make and laminate cards with the following suggestions. One card will be chosen each time by the adult who is calling out 'Stop' in the game.

The person holding the apple	The person holding the pear
The person holding the plum	The person to the right of the person holding the apple
The person to the right of the person holding the pear	The person to the right of the person holding the plum
The person to the left of the person holding the apple	The person to the left of the person holding the pear
The person to the left of the person holding the plum	The person opposite the person holding the apple
The person opposite the person holding the pear	The person opposite the person holding the plum
The person 2 places to the right of the person holding the apple	The person 3 places to the left of the person holding the pear
The person 4 places to the right of the person holding the plum	The person before the person holding the apple
The person after the person holding the pear	The person after the person holding the plum
The person 6 places before the person holding the apple	The person 10 places after the person holding the pear
The person 5 places before the person holding the plum	The person nearest to the door who is holding a fruit cup



APPENDIX 9

A PROGRAMME FOR APPLE DAY CELEBRATIONS

This day gives you the opportunity to explore many curricular areas through the use of your orchard and its fruit. If you don't have enough of your own apples available to resource the activities, try contacting a local land-owner who might be glad to have some of the harvest used, or a supermarket.

Set up areas or classrooms which pupils can visit on a rota, with an adult based there to repeat each activity. Adapt what they do to suit ages and abilities: eg infant groups can use pictorial recording, older pupils can use IT.

Languages: shape poems, recipes, quizzes, differentiation of flavour

Mathematics: measure, symmetry, compass directions

Science: pip-planting, orchard needs, minibeasts

Social subjects: food miles

RME: awe and wonder activities

Art and Craft: printing, collages, cartoons, ephemeral art, head-dresses, badges, apple hogs, chocolate apples

PE: games activities

Music and Drama: sounds in the orchard, kicking up a storm, chants

Try to allocate at least one activity in your orchard, and end the day with a tree-dressing. Capture everything you do in photographs and invite visitors, pupils and staff to comment and evaluate activities.



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FORTH ENVIRONMENT LINK

OUR VISION: Linking people and the environment for a greener, healthier future

OUR AIMS: We work with others on environmental and food issues to:

- Encourage and support involvement, learning and practical action
- Educate and raise awareness
- Create and develop new ideas

Forth Environment Link (FEL) began as the Kippen Nature Club in 1989 with the aim of teaching children about biodiversity and nature. In response to community need and interest, the organisation grew in both mandate and geography, expanding to include adult education and demonstration projects.

In 2005 we reconstituted as Forth Environment Link, a company limited by guarantee with charitable status, serving three local authorities, Stirling, Clackmannan and Falkirk.

In 2008 Forth Valley Food Links merged with FEL, bringing an additional focus on sustainable local food production and consumption. In 2012 FEL took over the hosting of Cycle Stirling bringing a new cycling focus to our work and the establishment of the Cycle Hub at Stirling Railway Station.

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