

The New Primary Science Curriculum & How to Link to Outdoor Settings



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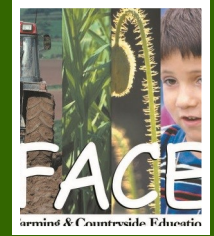
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Introduction

Cobble Hey Farm near Garstang in Lancashire hosted a seminar considering the Programmes of Study for Primary Science within the NC2014 and how it might be applied to outdoor sessions. The presenter on the day was Rachael Webb, Teaching and Learning Consultant for Primary Science from Lancashire Professional Development Service.

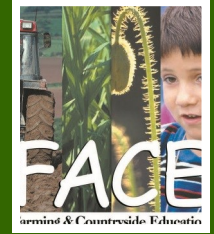


Attendees were able to explore how to deepen children's understanding of the new expectations for each year group and how to develop subject specific language through practical experiences. The day allowed teachers and farmers to work alongside one another to plan opportunities within an outdoor setting and realise the potential of a farm visit. Farmers and teachers were all too familiar with how enjoyable an experience a farm visit can be but were keen to develop ideas further regarding how to ensuring pupil progress and in terms of how to link a farm visit with other opportunities back in school.

This booklet extracts many ideas from the day and presents practical activities for you to try with children either on a visit or within other outdoor settings, even within school grounds.

Throughout the booklet when the word "farm" is used, you can easily substitute "garden", "park" or outdoor area of any kind. Just adapt the activities to suit your setting!

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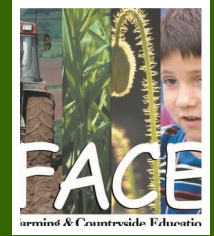
Key Changes in NC2014 in relation to using the outdoors – New Opportunities

The Programmes of Study (PoS) for NC2014 encourage schools to focus on using the outdoors more frequently to ensure the children are able to experience a wider range of animals, plants, habitats and seasonal changes over the course of a year and not just for a six week half term unit.

With the new curriculum and the emphasis on ‘observation over time’, it would be good practice for each year group to use the outdoors at least once a month and record what they view (either with a focus on plants, animals, life cycles, habitats, weather, seasonal change, etc. dependent on their year group PoS). For example, Year 2 children could visit a habitat each month and see what creatures they find there; their ‘Bug of the Month’.

The children could do some annotated, observational drawings of their bug, try and find out what it is and maybe even ask a question about it or find out an interesting fact. Over the course of the year, their understanding of the biodiversity of mini-beasts will have developed and then when they do a sustained, perhaps 6 week unit on habitats later in the year, their experiences can be developed further. In Year 4, for example, the children might do something similar but develop their use and understanding of classification grids and present some more sophisticated research and annotated drawings linked to their individual ‘Bug of the Month’.

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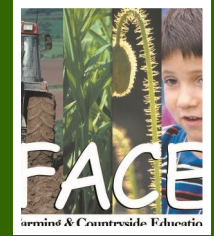


Children's experiences could be even further enhanced by including a visit or visitor linked to their unit. A trip to a farm setting, for example, provides an excellent way for children to see life cycles, variety of animals and relationships between plants, animals and habitats first hand which in turn enhances their understanding (as well as being an excellent way to engage learners and question 'real experts'). Perhaps consider different classes visiting the same farm / location but at different times of the year to enhance their experiences over a key stage.

Using the school grounds and outdoor settings throughout the year

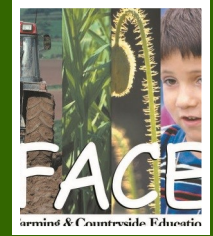
TASK: As a staff, produce a grid showing each month of the year, one for plants, one for animals/habitats, one for seasonal change/weather and one for visits / visitors. Discuss opportunities that can be provided each month that link with specific year group PoS. Try and include something for every year group for a minimum of 6 separate months (twice per term) throughout the year. See the tables on the following pages for some starting points for your discussions but remember to add local opportunities too e.g. enter a local food event, flower show or countryside show. Use experts around you by visiting real settings in your local community or consider plants for a moment and imagine if children left primary school being 'real gardeners' with the knowledge and experience of different crop types, planting, cultivating, harvesting and using produce for cooking. This can only be achieved by truly immersing children in outdoor learning on a regular basis linked to the statutory requirements in NC2014 both in school and using 'real experts' beyond the school setting within local communities.

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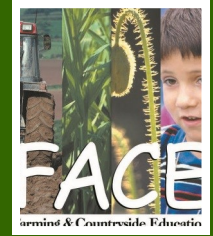
	Autumn Term			
	SEPT	OCT	NOV	DEC
PLANTS	Leaf shapes Harvesting / preparing planting plots for over winter	Harvesting: comparing vegetables and fruit Which part do we eat? Pumpkins	Trees and signs of autumn (deciduous) - first leaves to change colour, first tint, first leaf to fall Last leaf to fall / completely bare Bulb planting. Comparing diff roots	Bare trees Evergreens Christmas trees – artificial v real, decorating the outdoors (Y1) Holly, Mistletoe, Ivy, Moss
ANIMALS / HABITATS	Bird migration Spiders Bug of the month Visit another habitat or a farm, zoo, park, etc or invite in an expert	Worm rescue How many slugs, snails and worms can you spot on a dry day and on a wet day? Bug of the month	Spider webs (frost and dew) Bug of the month Visit another habitat or a farm, zoo, park, etc or invite in an expert	Microhabitat activity – minibeast hunt. Does anything live here in the cold winter months? Bug of the month
SEASONS	Introd nature journal to look at how things change over time What do they notice? favourite spot	Leaves changing colour Indicators of autumn Change in weather	Decreasing day length – link with bonfire night activities	Shortest day
WEATHER	Record weather Sun and cloud cover Weather in other places around the world – link with holidays	Record weather Rain and floods Wind	Record weather Rain and floods Wind LKS2 'floating gardens' to help communities in flood risk areas 'Practical Action'	Record weather Frost and snow Sun & shadows in winter months Other countries – weather on Christmas day!

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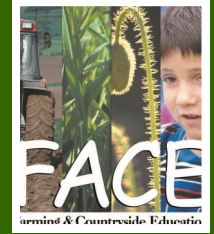
Spring Term		
JAN	FEB	MARCH
First signs of... snowdrops, crocus, daffodil (Y1) Recycle Christmas trees (Y2) Plant indoor plants: beans (Y2) indoor herb garden (Y3) Spider plant (Y6) Potato project registering	First signs of... Twigs and buds (Y1) First signs of... Daffodil, crocus, snowdrops, bluebells – recording growth and temperature Preparing for Spring...Potato chitting	First signs of... Twigs and buds - first leaf & first tree to flower/blossom (Y1/3) First bulb to flower (Y2) Plant summer-flowering bulbs Planting of veg patch (different crop examples each yr grp) Potato planting
Food for birds RSPB 'Big Garden Bird Watch' mid-end Jan Bug of the month Visit another habitat or a farm, zoo, park, etc or invite in an expert	Set up birdbox camera Compost heaps and worms – organic waste Bug of the month	Birdbox camera recording Birds collecting nesting materials Protect new spring shoots from slugs Bug of the month Visit another habitat or a farm, zoo, park, or invite in an expert
First signs of ... Clothes worn in this season		indicators of spring clocks change – day length recorded
Record weather Frost, ice and snow	Record weather Frost, ice and snow Ice sculptures – how long to melt?	Record weather Cloud cover World water day – March 22nd 'Mission: Explore -Water'

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Summer Term		
APRIL	MAY	JUNE/JULY
RHS National Gardening Week Planting crops in school grounds Plants to attract wildlife...nettles attract ladybirds (Y4) sow outdoor herb seeds sunflower competition (Y1- parts of plant, Y3 – harvesting seeds)	Growing and comparing plants indoors and out (different varieties in each yr grp) Vegetables, salads, fruit, hanging baskets, containers Plants to attract bees / butterflies Nectar plants and Buddleia (Y3/4) Wild patch to encourage caterpillars (Y2 or 4) Weed growing areas Investigations with grass (y3), daisies (Y4)	Leaf shape variation (Y1) Fruits and seeds – strawberries, rasp., dandelion clocks, sunflower competition and sunflower seeds Investigations and observations with weeds (daisy, dandelion, etc) Wildflower meadow study (flowers and seeds Y3) Deadhead bedding plants Potato harvesting (weight in grams)
Birdbox camera recording Ladybirds incl lifecycles, frogs & tadpoles, ponds Improving the school environment for insects/minibeasts Bug of the month	Caterpillars (linked to food for birds and camouflage) Microhabitats - minibeast hunt Bug of the month Visit another habitat or a farm, zoo, park, etc or invite in an expert	Butterfly survey 'Big Butterfly count' mid July-mid Aug Bees Bug of the month
		Longest day – June
Record weather Cloud and rainfall Collect rainwater and investigate ways to recycle water for irrigation	Record weather Sunny spots and Shady spots Sun & shadows in summer months	Record weather Sun and cloud cover Weather in other places around the world – link with holidays

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An emphasis on ‘Working Scientifically’

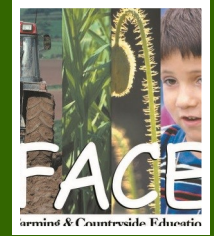
The NC2014 uses the phrase ‘working scientifically’ when referring to science skills. Staff and pupils should all be encouraged to use this terminology so the children are aware when they are ‘working like a scientist.’

NC2014 clearly states the key skills to develop in each area of science in each year group and encourages teachers to develop a variety of approaches beyond fair testing for example;

- Raising and answering questions;
- Exploring and Observing (incl. a greater emphasis on recording over time);
- Looking for patterns;
- Grouping and classifying (comparing and contrasting a wider variety of examples and identifying examples from their locality and beyond);
- Comparative and fair testing (controlled investigations);
- Researching (including ‘asking an expert’);
- Collecting, analysing and presenting data;
- Drawing conclusions

Science linked to outdoor learning provides a wealth of opportunities for children to practice these skills effectively.

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Keeping a Nature Journal

A nature journal can be an effective way for children to log their experiences, visits and findings from their outdoor learning and off-site visit experiences. Nature journals can take many forms, for example;

- a hand-bound collection of a variety of experiences,
- a separate exercise book to record learning outdoors, or even
- a variety of mini-journals recorded in fun ways such as a rolled-up paper scroll, tree hangings, outdoor flags/banners, messages/findings wrapped in 'natural parcels' using only materials found in the outdoors, mini origami booklets, etc.

Be creative and the children will too! Keeping journal logs together in one place can aid the children in looking back at previous additions and provide a better opportunity to compare and contrast examples, times of year, etc. Reviewing changes over time is an excellent skill to develop and one which is encouraged in NC2014.

Nature journals can be used to;

Add photographs (add a visual scale next to the specimen before photographing to introduce the idea of scale)

Record annotated observational drawings

Compare and contrast different specimens, times of year, places, etc.

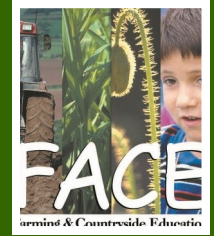
Ask and record questions

Add research facts and information

Practice using scientific vocabulary and writing definitions linked to their experiences (e.g. writing and re-editing definitions for pollen, pollinator, nectar after research and first hand experiences).

Collecting plant samples (these can be progressed into making 'Herbarium Specimens' used by scientists in the real world. (see below for more details).
Introduce in Y4 perhaps when looking at different plants in different habitats.

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Making a Herbarium Specimen

A herbarium specimen is a method used by scientists to collect, press, describe and identify plant specimens they have found in the field. There is a common format and layout used by scientists. A herbarium specimen should include:

- Sample of pressed plant specimen

- Locality specimen found

- Habitat description

- Animal and plant identification (using classification grids)

- Collector's name

- Date of collection

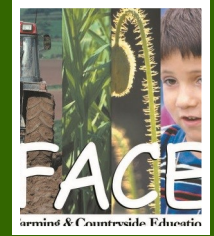
- Plant description including colour match card to identify colour at time of collecting (this will change after drying, pressing and storing).

For more information on creating Herbarium Specimens with primary aged children visit the 3 'Herbarium' referenced resources at <http://www.nationalstemcentre.org.uk/elibrary/resource/10262/collectors-activity-3-collecting-specimens>

(You will need to visit www.nationalstemcentre.org.uk home page first to register yourself/school FREE OF CHARGE before you can go to this link and download the resources for free).

For classification keys and guides for plants, minibeasts, pond life, etc. visit Nature Detectives at www.naturedetectives.org.uk and Gatekeeper at www.gatekeeperel.co.uk

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Visiting an outdoor setting beyond the school grounds to enhance learning

A visit to a farm, park, zoo, differing habitat, etc. can be a truly enriching experience with a huge amount of learning opportunities linked to the real world. Below are some ideas for ensuring that they are not only enjoyable, memorable experiences but are also opportunities to move children's learning on ensuring genuine understanding of a concept and true progression of learning.

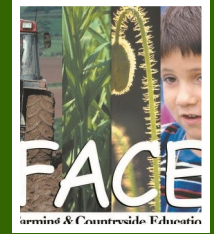
Capturing Evidence of Learning

Nature journals can be an excellent way of capturing evidence of children's experiences prior to, during and after a visit to ensure their understanding of a concept has developed and their use of scientific terminology improved.

Generating ideas and questions

Consider asking children for a definition of, for example, a farm before they visit. Ask them to suggest what they might see. Recording individual, initial thoughts will provide a useful assessment of what children understand, what they might not be sure about, what language they are currently using and where they might have misconceptions. They can collate their own thoughts and the thoughts of others in their group on a large piece of paper which can have ideas added to or altered as their learning and understanding develops.

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The aim of all learning experiences including a visit is to develop children's understanding and their use of subject specific vocabulary so they can articulate their learning more effectively. All the better if they have fun whilst they are there! Prior to a visit children can generate questions about what they would like to find out and during a visit the children can collect evidence to move their learning on. These can be added to the nature journal on return to the school e.g. answers to questions, photographs/video which are annotated, observational drawings (annotated), specimens and some self-assessment such as 'What did we learn from our visit?', 'What did we enjoy the most and why?', 'What questions do I still have?', etc. Think of nature journals as a way of collecting evidence about the world around us and summarising our questions and our learning about it (including scientific and topic specific vocabulary).

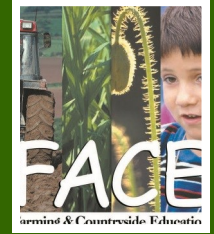
Whiteboard 'Science Words'

Before going on a visit consider 'What can the children collect to evidence their learning and to talk/write about on return to share their understanding? Can a 'Science Words' whiteboard be taken around during the visit itself for children to focus on and collect new words they have come across. This can then be used back in school when children are sharing what they have learned.

The science curriculum 2014 identifies the importance of spoken language and scientific vocabulary:

"The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. "

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Go on a tour!

This activity was carried out with a group of teachers during the Cobble Hey training event.

Once children arrive on a site they will need some time to familiarise themselves with the setting. This is a good opportunity for children to gather some evidence of ‘What makes a farm?’ This activity can be used to develop Geographical Skills linked to the terminology ‘features’ and ‘setting’ and to the skills of mapping.

Send the children out in groups with recording materials—paper and pencils, ipads, cameras—whatever is available.

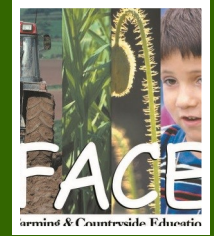
Supply a simple map or trail of the site you are visiting (A simple tourist map would be ideal). Children should use this to find their way around the farm.

Their task is to record the **features** of the farm. These can include fields, hedges, ponds; or **buildings** like the farmhouse, stable, barn; actual **objects** such as tractor, wheelbarrow, water butt; or even **animals** such as ducks, pigs, sheep.



When the children return from their tour, collect their words. These can be used within a geography context to develop the children’s understanding of the term ‘features’ and also when discussing animals and habitats in a science context.

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Map sticks

Also called Memory Sticks / Story Sticks

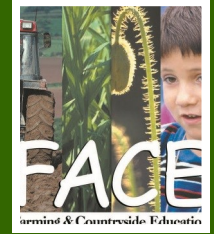
Ask each child to find a stick which will be the basis for a record of their journey around the farm.

Give each child a small ball of coloured string. As they move around the farm they collect small memorable items to remind them of a particular place e.g. a leaf, sheep's wool etc. Each item is bound tightly to the stick with their string to make a record of their journey and the things they visited or saw.

A memory stick is personal to each child but children can be encouraged to share their memories –and their vocabulary—when you all come together again either on the farm or back at school. Key vocabulary can be added to a science display or learning wall in the classroom to encourage children to revisit the language.



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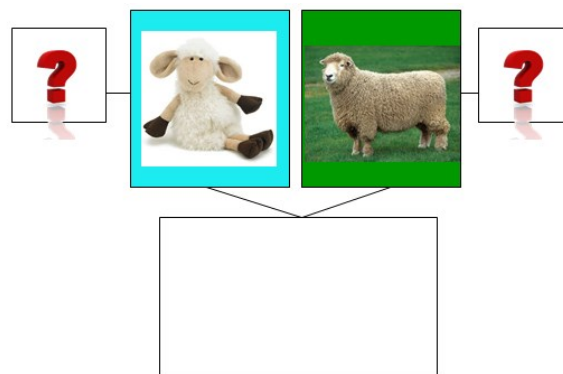


Ideas linked to 'Animals'

Compare and Contrast

This activity takes the form of a guided discussion during which the children compare and contrast images of an actual animal with a fictitious animal. For example, you can use images of a sheep and Shaun the Sheep; or of a pig and Peppa Pig.

The format below can be used to record a small group discussion where the adult scribes.

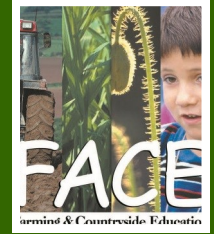


What is different? – Write in the boxes next to each picture recording what this sheep can do.

What is the same? – Write in the box underneath what **both** sheep have / can do. For example, they might say 'Shaun' walks on 2 legs and the real sheep on 4 but in the box at the bottom you can write 'move using legs' as they have this in common.

Other common features that they both have are; a head, a body, a tail, a woolly coat, senses (eyes for seeing, ears for hearing, nose for smelling, mouth for tasting/eating). During a farm visit different groups of children can collect photographs of different features e.g. one group could focus on heads, another on tails and another on animal movement, etc.

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Discussions might lead to talking about emotions and feelings and hence to animal welfare. What makes Peppa Pig happy/sad? What makes a pig on the farm happy/sad?

Obviously, input from the farmer will be valuable in these sessions.

Raising Questions

During the discussions, the children often raise questions about things they are not so sure about. Collate these questions as evidence of their curiosity and use them to question the farmer / expert during a visit.

True / False / Not sure

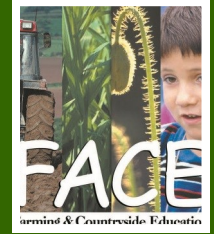
If children do not actively raise questions or if you want them to raise more sophisticated questions then scaffold this skill by giving some True/False Statements. Here are a few as examples,

- All sheep look the same
- All sheep have woolly coats
- Some sheep have black coats and some have white coats
- Female sheep have babies called lambs
- All lambs are born in April because it is warmer then
- All sheep have their wool shaven off for making into jumpers
- Sheep only live for a year
- There are many different types of sheep that have different features

Do the children think these are true or false (or use the language 'Yes / No / Maybe' for younger children)? They can have a go at sorting the questions and then use them as a focus for asking once they visit the farm. Answers can then be collated on return to summarise learning. Can they answer them now and give a reason why they know?



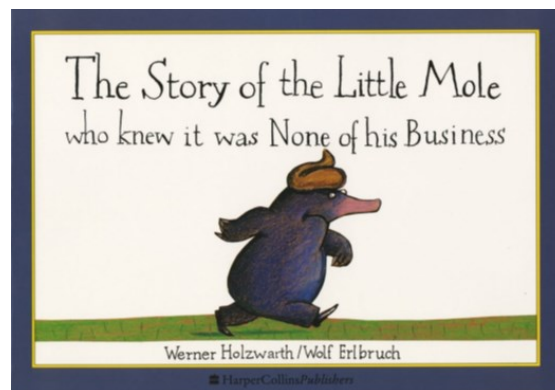
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All Animals Poop!

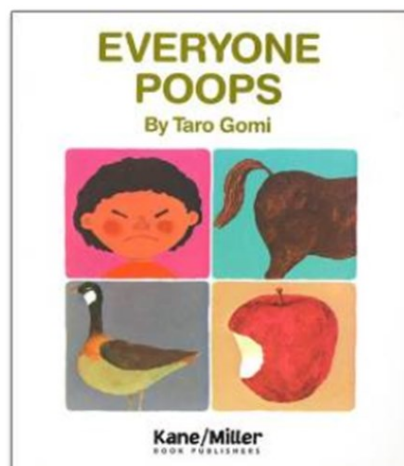
One of the things the children first notice about visiting a farm is the smell. Pre-empt this by introducing the following children's books:

“The Story Of The Little Mole Who Knew It Was None Of His Business.”

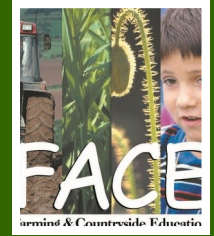


Search ‘Smart Science Mole’s Mess’ to find an investigation that links to this book that involves the children finding the ‘splattiest poop!’ using foodstuffs to model animal poop. (e.g. chocolate mousse for cow poop, natural yoghurt for bird poop!, etc.)

And “Everyone Poops”



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Ideas linked to 'Habitats'

Habitats – exploring habitats in school both in KS1 and KS2 can provide an excellent opportunity to develop a better understanding of 'the biodiversity of living things' and of 'life cycles'. Again the more variety that can be observed, the better the children's understanding. In the NC2014 teachers are also encouraged to support children in identifying *common features* of life cycles beyond just experiencing different examples.

Below are a variety of opportunities that can be explored both in the school grounds and settings beyond this:

Observe over time

Take photographs of different life cycles throughout the year. For example; chicks, tadpoles, caterpillars, birds, flowers, trees, crops, sheep, cows, etc. Sequence photos and annotate cycles. Which year group will focus on which example(s) thus avoiding repetition (Y2 habitats, Y4 habitats, Y5 life cycles of plants and animals)? Can any teachers / children find examples of more unusual life cycles to extend learning? Remember to include plant life cycles too!

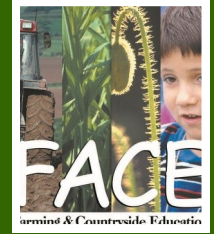
Researching common features of life cycles

The ARKive website www.arkive.org includes useful presentations and resources for exploring more unusual life cycles in UKS2 (Y5). Search for their 'Turtle Life Cycles' unit which considers the features and similarities/differences between mammal, amphibian, reptile and plant life cycles.

UKS2 should be researching a variety of different animals and/or plants in order to consider *features* such as:

- Live young/eggs
- Gestation/incubation period
- Similar to adult then grow or metamorphosis
- Reproduction
- Parental care/no parental care

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Pose lots of questions for the children to answer to address the points above – even KS1 can begin to gain evidence for things such as live young or eggs, gestation period. Use language they will understand and that is age appropriate but introduce new words too e.g. seasonal; cyclical.

Being able to see new life is an amazing, memorable experience. During the visit to the Cobble Hey Farm training event the teachers were able to see day old chicks and even watched a lamb being born. Truly memorable, certainly engaging and encouraged lots of questions! Even from the adults!

Useful Websites

There are many sources of inspiration for work on this area of the curriculum (Living Thing and Their Habitats).

Some of these include;

www.foodafactoflife

www.face-online.org.uk

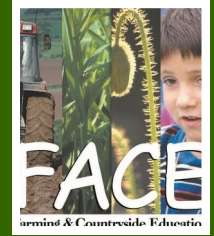
www.jamieskitchengarden.org

<http://apps.rhs.org.uk/schoolgardening/default.aspx>

At school or on the farm pupils can be involved in sowing seeds and observing life changes in the vegetable garden or the farmer's field.



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Ideas linked to 'Plants'

Crops

On the farm there is the opportunity to promote a greater understanding of:

Plants providing food

Crop rotation

Fertilising the soil

Pests

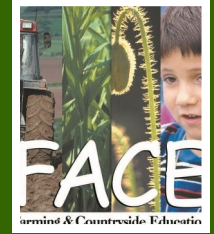
Farmers can use hands-on methods, where pupils can feel the grain, see the seeds, examine the growing crop, grind the wheat, etc. Farmers might like to create their own journal for the farm as an example of change over time. This can be available on the farm or taken into school by the farmer.

One school in Lancashire visited a market gardener who grew lettuce. They explored the different variety of lettuces grown, the conditions required, harvesting and also discussed ideal soil for growing with the farmer. Children then went back to school and had a lettuce growing competition exploring the benefit of fertiliser on their crop by growing seeds with and without fertiliser. They also compared different soil composition and contacted a school in another part of the UK (a region that the farmer had identified as having superb soil quality) and asked the children to send them a sample of soil from a local farm so they could make comparisons. They even went on to explore common garden pests and different ways of preventing them which had been discussed with the farmer on their initial visit. A super example of children learning about the interdependence of plants and animals on one another!

Teachers can also explore the national initiative 'Farm to Fork' on the website;

www.foodafactoflife.org.uk

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Plant life cycles

In UKS2, the NC2014 encourages teachers to plan opportunities where children can look at all the different ways in which plants develop and reproduce (sexual and asexual reproduction in plants). 'Genetics and Ecology: A Guide for Teachers' recommends the following as examples which can be observed in schools but farmers and market gardeners may provide further examples;

From a *runner* - *strawberries or spider plants*

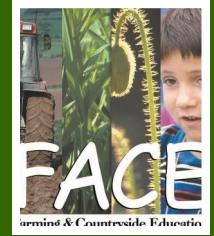
From a *cutting* - *geraniums or roses*

From a *bulb or corm* - *daffodils, tulips, gladioli*

From a *tuber* - *potatoes or dahlias*



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Observational Drawing

Observational Drawing

Throughout both key stages, children need to be able to identify and name some common examples of plants and animals. This is much easier if children are immersed in viewing lots of different examples throughout the year and given lots of opportunities to talk about, compare and contrast examples, draw and record their observations, and begin to use keys and guides to support classifying and identifying. Observational drawing is a skill that needs to be taught and given time to practice. It can aid ‘close observation’ skills and encourage comparisons as well as support accurate recording.

This activity can be used with KS1 children to help develop observational drawing skills.

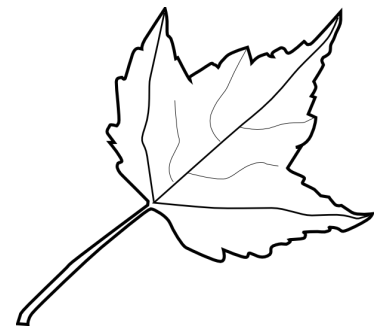
Hold a leaf, collected from the outdoor setting, in front of you. Use your finger (imaginary pen) to “draw” around the outline of your leaf.

Use your finger to draw the leaf again but this time in the air to the side of your actual leaf. Keep looking back to the real leaf to make sure you have all the details. Teachers can model language here such as, “Does your leaf have bumps, curves, spikey parts, broken or eaten bits, etc.?”

Repeat the same action but this time do it on your partner’s back.

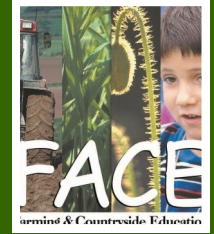
Repeat again but this time use your finger on a piece of paper – make your outline as large as possible.

Now try drawing your leaf outline with a pencil making it as large as possible on the page. What details can you add inside the outline?



Another suggested resource is: http://www.naturedetectives.org.uk/download/bingo_leaves.htm which encourages the use of appropriate scientific vocabulary linked to leaf shapes for KS1.

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KS2 Y6 Evolution and inheritance

The NC2014 has introduced a new unit on Evolution and Inheritance into the UKS2 PoS.

Pupils should be taught to:

recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

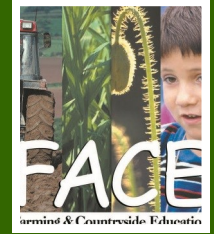
Discussing inheritance in school using family trees is best avoided at this age but can be done really effectively using animal breeding and selecting for certain traits.

Another way to think of this topic is under the heading “survival” and there are many opportunities on the farm to look at how plants and animals have adapted to survive.

Schools are very keen to ask an expert! If animals can survive long enough then they can reproduce and pass on some of their traits to their offspring.

Farmers can often give real examples of how animals are bred for certain traits and how these are sometimes linked to environmental benefits (e.g. sheep and colder, harsher climates). Sharing examples of different sheep, cattle, pig breeds can really give children a clearer understanding of inheritance and traits (or even explore looking at bird, rabbit, guinea pig and dog breeding examples) using any experts you might have within the school community).

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Prior to using 'real' examples of inheritance and traits begin by introducing the concept through modelling inheritance using biscuits!

We all know that biscuits cannot reproduce! Only living things reproduce. Can the children suggest what makes something living? There are 7 life processes which can be remembered by the mnemonic 'MRS GREN';

M – Movement R – Respiration S – Senses (sensitivity to environment)

G – Growth R – Reproduction E – Excretion N - Nutrition

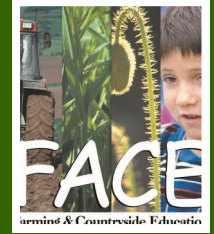
Imagine, however, if biscuits did reproduce? Imagine looking in the biscuit barrel and they had had babies! We are going to use biscuits to model inheritance but a model is a simplified version of a more abstract concept, not an exact replica.

Provide a selection of different biscuits for each group of children (e.g. custard cream, bourbon, chocolate digestive, plain digestive, rich tea, rich tea finger, nice, Oreo, malted milk, choc chip cookie)

1. In pairs, select a biscuit from the collection
2. Children use sticky notes to write down that biscuit's characteristics/traits (e.g. circular, chocolate, double layered, etc.)
3. Select second biscuit
4. Repeat step 2 for the second biscuit
5. Now IMAGINE biscuits could reproduce. Decide which biscuit, from the selection left, could be the offspring sharing at least **one trait** from each "parent" biscuit.
6. Now decide another biscuit which could also be the offspring sharing one trait from each "parent". Can they justify their reasons for this choice? The offspring are not exact replicas of one another but have their own characteristics sharing some traits, but not all, with the parents.



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Key Learning

Whether you are a teacher in school, a farmer hosting a visit or a farmer visiting a school, consider:

- What learning needs to happen before
- What evidence can be collected during
- How can the experience be used to develop a genuine understanding of a concept?

Think of novel ways to record evidence. Prepare leaf shapes, for example, as recording sheets. Use mapsticks (see page 8). Ipad and cameras can provide valuable records of learning.

Encourage children to use their own words to explain their understanding.

You might also find these FACE publications useful:

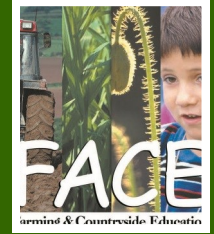
Beyond the Classroom: new National Curriculum Science KS1 & 2 <http://www.face-online.org.uk/science/beyond-the-classroom-new-national-curriculum-science-ks1-2>

And Science Skills Share: <http://www.face-online.org.uk/teachers/science>

There are also many useful resources on the new Countryside Classroom website www.countrysideclassroom.org.uk

The Countryside Classroom website also list farms and outdoor locations which host school visits; and people who will come into school to inspire pupils about food, farming and the natural environment.

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Rachael delivered an action-packed seminar for teachers and educators and we are grateful to them for contributing to the day.



Attendees at the seminar
ready to share their learning.