

DOWN ON THE FARM



Curriculum Links for Key Stage 2

The Down on the Farm materials will help you meet the following Northern Ireland Curriculum links.

The World Around Us- Geography, History and Science and Technology:

Interdependence- how plants and animals rely on each other within the natural world, interdependence of people and the environment and how this has been accelerated over time by advances in transport and communications, the effect of people on the natural environment over time, interdependence of people, plants, animals and place.

Place- how place influences plant and animal life, ways in which living things depend on and adapt to their environment, positive and negative effects of people on places over time

Personal development and Mutual Understanding:

Understanding of the benefits and the importance of a healthy lifestyle; insights into society, other cultures and the environment, our interdependence and the need for mutual understanding and respect; the ability to use these insights to contribute to relationships, family life, the local and global community and the environment.

Personal development and Mutual Understanding:

Insights into society, other cultures and the environment, our interdependence and the need for mutual understanding and respect; the ability to use these insights to contribute to relationships, family life, the local and global community and the environment.



SOIL MATTERS

Give back what you take out!



“A healthy soil is full of life, with millions of bugs and important worms. The soil provides goodness for us to grow, and we can provide homes and food for bees, bugs and butterflies.”

Objectives

To understand how organic farming differs from conventional farming

To appreciate how important maintaining good soil quality is to organic farming.

Resources

1. Bag of soil
2. A packet of garden fertiliser
3. TEACHING RESOURCE 1 “six crop rotation pictures”.

What to do

Show the children the bag of soil. Carry out a collage activity as outlined in ‘Active Learning and Teaching Methods for Key Stages 1 & 2’ on www.nicurriculum.org.uk Ask some volunteers to come and feel it and describe what it is like. Ask the children what they know about soil. Where does it come from? What is it made of? Write ideas on the board.

Ask the children to explain why plants need soil to grow. Their first idea may well be to do with needing somewhere for the roots to grow so that the plants are held up. Make sure that they also understand that plants need to get goodness from the soil in the form of nutrients. Ask if any of the children know what a fertiliser is. Show them the packet of garden fertiliser and ask one of the children to come up and read the description.

Tell the children that they are going to find out how organic farmers build up soil fertility without adding chemicals to the soil. Explain that some plants build up soil goodness and some take it away. If you plant a range of different crops over a period of years you can keep the soil in balance. This is called a crop rotation. You may want to discuss the meaning of the word ‘rotation’.

Ask for six volunteers to come to the front. Give each of them a crop rotation picture and accompanying text and ask them to read it out. Make sure that the steps of the rotation are not in the right order.

On the board draw a set of arrows making a cycle, and in the gap between each arrow, write year 1, year 2, year 3, year 4, year 5 and year 6. Ask the children for suggestions of how they would order the crops if they were a farmer.

Assemble the crop rotation on the board. The correct order is shown below with accompanying teachers’ notes on each crop and its role in the rotation:

SOIL MATTERS

Give back what you take out!

ORGANIC FARMING

Activity Sheet 1

cont'd



Year 1: Clover ley - adds soil nutrients

Clover works as a 'natural' fertiliser. It belongs to the family of plants known as 'legumes'. As it grows in the soil, it draws nitrogen from the atmosphere and makes it available to plants growing in the soil, or following crops.

Year 2: Clover ley - adds soil nutrients

As above.

Year 3: Wheat - withdraws soil nutrients

Wheat is a demanding crop, which takes up lots of nutrients from the soil. This is why it is important to have a good fertility building crop like clover before it.

Year 4: Beans - keep soil nutrients in balance

Beans are an excellent break crop. This means they give the soil a chance to recover after the nutrient demanding wheat planted the year before, and 'break' potential pest and disease cycles. Beans take up soil nutrients as they grow but this is balanced by the fact that, as a legume, they add some nitrogen to the soil through the action of the bacteria in their root nodules.

Year 5: Oats - withdraw soil nutrients

Oats take up nutrients from the soil, but are not as demanding as wheat. They are a useful crop for low nutrient situations as their roots scavenge deeply looking for nutrients, and are therefore ideal towards the end of the crop rotation. They are also a good form of weed control as their leaf structure shades out light and prevents smaller weeds getting established.

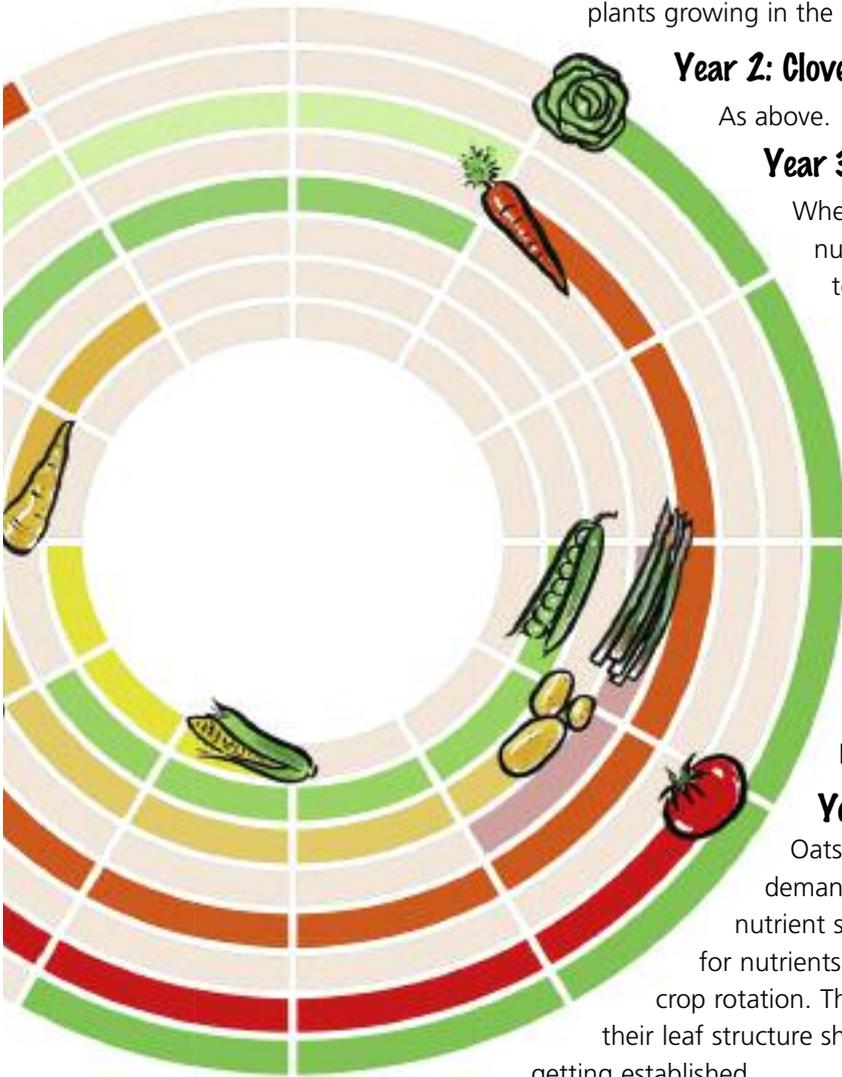
Year 6: Turnips - withdraw soil nutrients

Turnips act as a break crop after the oats grown the year before. While they do not add nutrients to the soil, they do not take as many nutrients out as the wheat and oats. Also, turnips will often be eaten by sheep and other animals which add manure to the soil as they are feeding.

The children could then draw their own version of a crop rotation.

Further activities

If any of the teachers or parents has a compost heap in their garden, ask them to bring in a sample of compost. Collect together some organic matter in a bucket, and ask them to compare. Can they believe that the vegetable peeling, fruit skins and so on can turn into rich brown compost? Ask them what is good about composting, for example putting the nutrients back into the soil.



HEALTHY ENVIRONMENT

Wildlife and Food Chains



“The farmer doesn’t spray any chemicals to control pests on the crop. Instead he creates homes in the meadows and hedges for us to live. We enjoy eating the aphids and other crop pests.”

Objectives

To understand that food chains are encouraged on organic farms and that this is important with regard to conserving wildlife.

To consider how the choices that people make about buying and eating certain food can have an impact on wildlife.

Resources

1. TEACHING RESOURCE 2: “Food chain cards”
2. Access to internet www.soilassociation.org/farmtrails go to ‘Church Farm’

What to do

Children begin by playing the food chain game. Five children are given a card with a picture on it: wheat, aphid, ladybird, skylark and hawk. They have to arrange themselves to form a food chain that can be found on a farm.

The teacher then explains that the aphid has been sprayed with pesticide and so the child with that card has to leave the chain. This in turn affects the ladybird which has nothing to eat. It leaves the chain as do the skylark, and then the hawk, leaving only the wheat. This shows how using pesticides can affect food chains all the way to the top predator.

Pesticides are routinely used by many farmers in the U.K. Organic farmers, on the other hand, rely on more natural methods. They can only use 6 of a total of 450 pesticides and then only with special permission.

Rather than spraying pests, ask children how could farmers use naturally occurring food chains to control pests such as aphids and slugs? For example, ladybirds eat aphids, and birds eat slugs. By encouraging these animals on farms, farmers are working with nature and not allowing any one species to dominate. An example of this is many organic farmers planting wild flowers around the edge of a crop. These plants provide food and shelter for predatory insects which will move into the crop to eat pests like aphids.

Can children think of any food they eat that is made from wheat? [Bread, cereals, pasta, biscuits, cakes]. Can they see how their decisions about what to buy and eat can have an impact on the amount of wildlife living on farms. Explain that some people buy organic food because they believe that this helps to protect wildlife.

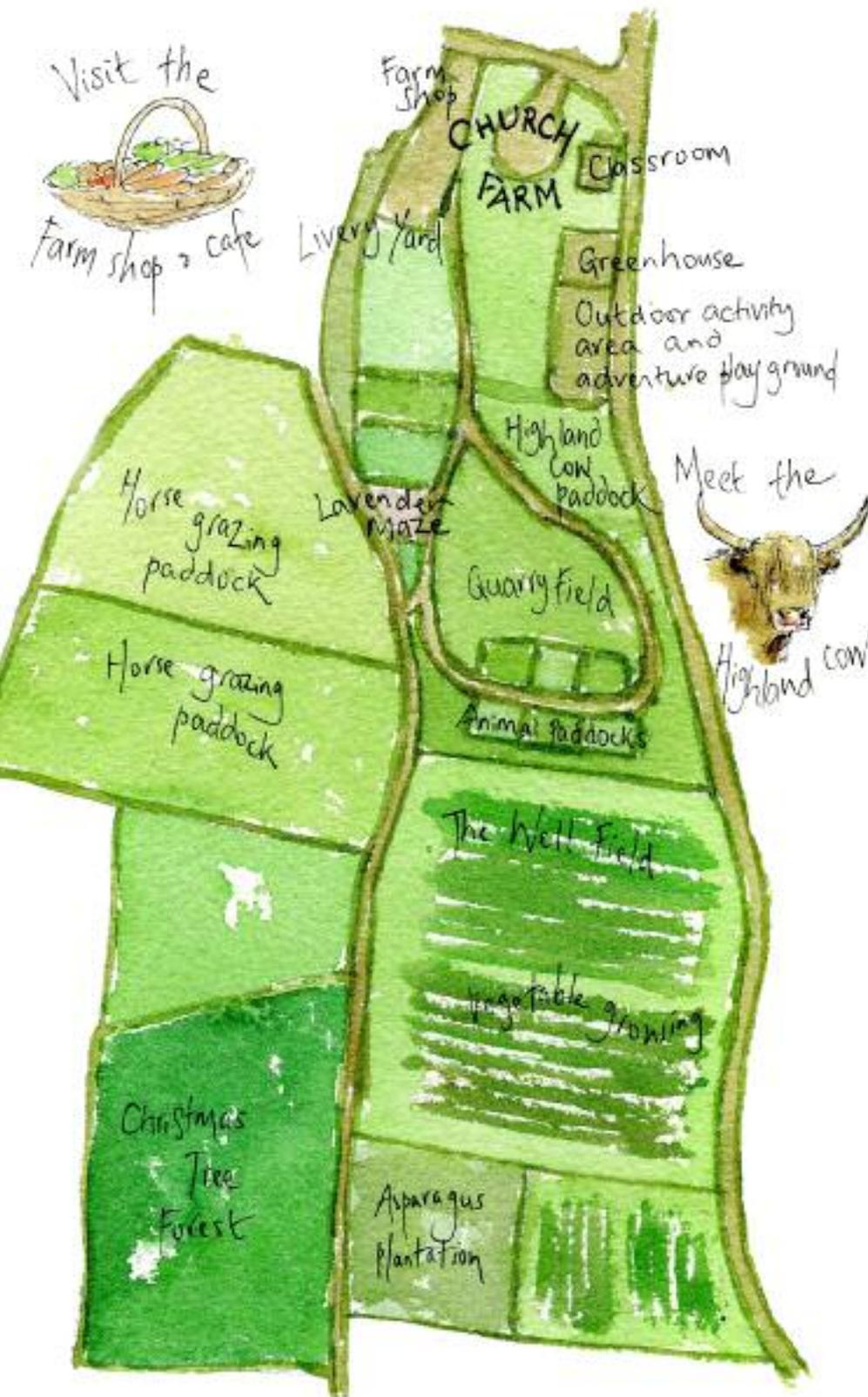
HEALTHY ENVIRONMENT

Wildlife and Food Chains

ORGANIC FARMING

Activity Sheet 2

cont'd



Further activity

To learn more about food chains on farms pupils could go to the Church Farm trail on the Soil Association website: www.soilassociation.org/farmtrails go to 'Church Farm'. The trail shows a variety of habitats and food chains that can be found on a farm, and introduces terms such as "producer" and "consumer". Discuss with then children what they have found out on the trail. Are they surprised at how many different habitats they saw on the trail?

HEALTHY ANIMALS

Animal Welfare



"I have cousins who have to live inside a big shed all day. They never get to run around the fields so I feel very lucky to live here."

Objectives.

To understand the difference between intensive farming where there are high inputs of capital, fertilisers, labour, or labour-saving technologies and non-intensive animal farming where there is a low input of materials and labour with the crop yield depending largely on the naturally available, soil fertility, water supply or other land qualities

To consider the rights of farm animals

To consider how the choices that people make about buying and eating certain food can have an impact on animal welfare

Resources

1. TEACHING RESOURCE 3a and 3b: "Images of farming". Photo cards of animals.
2. ACTIVITY SHEET 1: "Animal Charter."
3. TEACHING RESOURCE 4: "How the other half live".
4. Range of egg boxes: Barn eggs, Free range, Organic

What to do

Show the pupils the photo card with the battery hens and the sow in a farrowing crate. Ask them questions about it. For example: Why do they think the animals are kept in cages? Have they ever seen hens or pigs on a farm? Did they live in the same conditions? Compare with the photo card of free range hens and pigs. What do the children think about the animals on this card?

After looking at the pictures, give the children the sheet entitled "How the other half live" in small groups. Ask them to read the information. Using the Conscience Alley technique outlined in 'Active Learning and Teaching Methods for Key Stages 1 & 2' on www.nicurriculum.org.uk. Explain that they are going to draw up a charter for animals. Discuss the idea of a children's charter by way of introduction. What are their rights; somewhere comfortable to sleep at night, good food, and education? They should choose at least six statements for their charter and write them on Activity Sheet 1 "Animal Charter".

HEALTHY ANIMALS

Animal Welfare

ORGANIC FARMING

Activity Sheet 3

cont'd



The following points are based on the Soil Association's organic standards and may be a useful reference. Animals should:

- Always have free-range access to pasture
- Have natural light and ventilation when housed
- Have enough space to move around
- Be fed a natural diet and clean water
- Be allowed to grow at a natural rate
- Have comfortable bedding
- To be given medicine only when they need it, and not 'routinely'

Organic farms have strict welfare standards that need to be met in order to sell the produce as organic. These are inspected every year by the Soil Association who awards its organic symbol to farms who meet the standards. Many non-organic farms have high animal welfare standards as well but by looking for the Soil Association symbol, you know animals have been kept to the highest welfare standards in the view of Compassion in World Farming.

Children should present their charters to the other groups. They could then each produce a final version, and the best ones could be chosen for a display in the school hall.

Examining eggs

Show the children a selection of egg boxes: Farm Fresh eggs - laid by battery hens; Barn eggs - from birds crowded together indoors in percherics; Free Range eggs - these birds have more space and access to the outdoors through holes in their huts; Organic eggs - these birds have the most space, small flock sizes and free access to the outdoors.

Children can discuss what they think the labels mean? Do they think any of the terms are misleading? Do they think it is worth paying more for eggs laid by hens which have a better quality of life?

Approximate prices:

Farm fresh eggs: £0.69p

Barn eggs: £0.78p

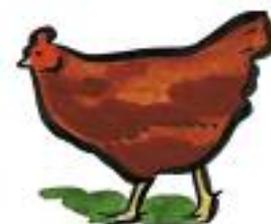
Free range eggs: £1.19p

Organic eggs: £1.59p

Further activities

You could give the children an understanding of what confinement might feel like. Make a 2m² pen using ropes and posts or chairs. Fit in as many children as possible and then ask them to pretend to be battery farm chickens (you could explain that many battery farm hens only have as much floor space as a piece of A4 paper). How would they feel about spending all day like that? What would the problems be? This activity could be done during a PE lesson, as you could then let the pupils run around as organic chickens!

Talking about animal welfare can be a very emotive subject, and it is important to remember that some children may be very sensitive about the issue. It may be worth sending a note home to let parents know you have discussed this issue.



HEALTHY ENVIRONMENT

Food Miles



“We love the beautiful countryside, the meadows, flowers and crops. We enjoy watching the butterflies and ladybirds, and meeting the animals that graze in the fields. But most of all, we like coming here to buy our food - it tastes fantastic and supports the farmer because he is providing us with great food from a living countryside.”

Objectives

To consider how the choices that people make about buying and eating certain food can have an impact on the environment

To raise awareness of the global trade in food.

To appreciate that many foods have been transported a great distance before we eat them.

To understand that there are environmental costs associated with the transportation of food.

Resources

1. A carrier bag containing a range of foods from around the world, which includes processed foods and labelled fresh produce. Try to provide items from every continent, and some fresh produce, for example apples and lettuce that could have been grown in the UK, but which have been imported from other continents. A bag for each group of four children will be needed. Try to have different foods in the bags so that pupils can report new information back to others.
2. A large world map displayed on the board.
3. ACTIVITY SHEET 2: “Where in the world?”
4. TEACHING RESOURCE 5: “How far has your food travelled?”
5. An atlas per pair.

What to do

Pupils work in groups to find out about the contents of their shopping bag, recording their findings on the activity sheet “Where in the world?” They can use an atlas to locate where each food is from, and draw a line out from the country to the edge of the map where they can draw the food, write its name and work how far it has travelled. The accompanying teaching resource “How far has your food travelled” shows distances to Belfast from major food producing countries. Groups can then present what they have found to the rest of the class.

Food Miles



Discuss the reasons why food is transported so far:

1. Some climates are suitable for certain crops, e.g. bananas, coffee.
2. Refrigeration, preservatives and fast transportation all mean that foods can survive long journeys.
3. Heated greenhouses and other intensive methods enable countries to grow crops out of season, for example we can have strawberries all year round.
4. Supermarkets say people want to have access to all kinds of foods all year round, for example strawberries in the winter.

What do they think about the fact that we import foods that we can produce ourselves? For example, for every pint of milk we export, we import approximately two pints. Pupils need to understand that transporting food over great distances creates a great deal of pollution, and that is one of the key problems with the global trade in food.

Brainstorm what could be done to reduce food miles: Eating food that is in season; buying from markets, farm shops and vegetable box schemes; growing your own fruit and vegetables in a garden or allotment; asking supermarkets to stock locally produced food. Pupils could produce posters to promote these alternative ways of shopping.

Further activities

This idea could be developed in the form of a giant whole school display where a world map could show pictures of foods, or actual labels and where they come from.

Pupils could be challenged to find out how far a typical British Sunday lunch has travelled. They could make a list of ingredients and then find out where these could have come from by accompanying their parents on a shopping trip. They then need to total these distances.

Teachers' notes

Useful background information on food miles can be found on the Oxfam website:
www.oxfam.org.uk/coolplanet/teachers/makemeal/background

HEALTHY SOIL

Plough to Plate - The Story of Food



“This is an organic farm.” replies the farmer. “I don’t use chemicals on my land and instead work with nature to grow my crops. The pigs and hens have plenty of land to roam and are happy and healthy.”

Objectives

To understand the story of food production, from planting seeds to harvesting, processing, cooking and eating.

Resources

TEACHING RESOURCE 6 “Food stories”. The cards need to be cut up and put into the wrong order. Examples of each of the foods featured in the cards.

What to do

Introduce the activity with the title *From the plough to the plate*. Ask children what they think this might mean and what they think they are going to be learning about.

In groups, pupils study the story of one of the foods by reading the text on the cards and then sequencing them. They then present their group’s food story to the rest of the class. This could be by simply reading the information out, or they could create characters, for example the farmer, the driver or even the carrot! Representing the food story as a drama will make it more engaging and memorable for the other children.

Alternatively, pupils could draw a food story diagram showing the food from their group. This should have a picture for each stage and a short description of what is happening.

Point out to children that if we compost the peelings from vegetables and use the compost to grow the food again, this makes a complete ‘cycle’. What happens to the goodness in the potato skins if they are not composted, but simply thrown in the bin?

