Why Farming Matters
Primary Schools

Classroom activities for KS2
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e-resources available: [www.whyfarmingmatters.co.uk](http://www.whyfarmingmatters.co.uk)
Why farming matters

Farming plays a vital part in all our lives; without it our ability to feed the world would be under threat. The role of farming is increasingly topical in an era when food security, climate change and energy security is of global concern.

The contribution that farming makes to our immensely diverse landscape, wildlife habitats, thousands of rural jobs, and in sustaining rural communities is well established. Farming today is a high-tech, science-led industry, that underpins a farming and food sector providing more than 3.5 million jobs.

At a time when issues of children’s health and diet are foremost in the national consciousness, pupils clearly benefit from any exploration of what food does for them and what they should expect from it. As increasingly sophisticated consumers of food, their opinions are of genuine interest.

As they are people who will have families of their own in the future, it is entirely appropriate that their voices should be heard and their questions taken seriously. The aim of this booklet is to help children develop a better understanding of a part of their world about which few of them have direct knowledge, and begin to find out “why farming matters”.
Getting started

Food and farming are topics of great importance to all our lives but, even more significantly, they will involve challenges which children will have to face as they become the consumers, parents, politicians, leaders and thinkers of the future. They will be confronted with the challenge of feeding more than nine billion people on the planet by 2050.

This resource contains activities to encourage Key Stage 2 pupils to start investigating this fascinating area of work, to carry out research, to discuss issues in class and to start forming their own opinions. How is our food produced? Who produces it and what are the many jobs associated with farming and the countryside? What impact does the weather have on farming? What effect does farming have on the environment? Why does farming matter? These are just some of the stimulating areas for classroom work.

All of the activities will help the teacher weave the themes of food and farming through the curriculum areas of English, maths, geography, science, art and design. They can be approached separately or as part of a larger topic on food, farming, climate change, history, the environment, wildlife and the countryside.

They will also help pupils to acquire personal learning and thinking skills which will allow them to become
● team workers
● self-managers
By engaging in these activities pupils are encouraged to participate and form opinions. They will need to:
- listen to the opinions of others
- change their views in the light of further information
- work together in pairs and groups
- develop individual work
- suggest possible solutions
- create new designs
- evaluate their work

In addition to the booklet which is available in hard copy and digital formats, the website www.whyfarmingmatters.co.uk contains some suggested answers plus further teacher information.
Using the picture cards

Farming landscapes
1. Stonewall feature in uplands
2. Outdoor reared pigs and arks
3. Straw bales ready to be collected after harvest
4. Solar panels in front of an oilseed rape field
5. Farmland pond
6. Wildflower margin around edge of crop field

Sheep farming
1. Newly born lamb, suckling ewe
2. Grazing sheep
3. Shearing
4. Weighing and grading lambs
5. Lamb chops

Crop farming
1. Preparing land (ploughing)
2. Sowing seed
3. Applying crop protection products
4. Harvesting of crop
5. Loaf of bread and wheat alongside
**Using picture set one, Farming landscapes**

Show the pupils photographs of a variety of farmed landscapes, explaining that farm landscapes are created by generations of farmers: they bring us food, provide habitats but also maintain the countryside for us to walk in and enjoy.

a. Think of words to describe the landscape. If you have laminated the pictures, children could use sticky notes to attach to each with their ideas.
b. Can they identify man-made/influenced features in the photos?
c. Can they see any boundaries? What are these for? (Farmers use these boundaries to keep their animals from escaping and to mark the limits of their land and to provide habitat for wildlife.)
d. Which landscapes do the children think are least influenced by man?
e. Which farm landscapes do the children like best? Why?

- Ask each pupil to choose to be one of the following people who were seen walking through their chosen landscape on one day:
  - Birdwatcher
  - Shepherd
  - Hiker
  - Artist
  - Person having a picnic
  - Wildlife enthusiast
- Ask them to imagine what they might have seen during their walk.
- Show them how to use pastels or chalk to produce pictures of scenes from their walk. Encourage them to smudge the colours with pieces of cotton wool or tissue paper to give realistic hills and sky. (When completed, adults can “fix” the pictures by spraying with hairspray in a well ventilated area.)
- Ask each pupil to talk about where they were going, what they saw and what they did on their walk through their landscape.
Using picture set two or three
Sheep farming or crop farming
a. Ask pupils to put the cards in sequence and devise a series of captions explaining the main events during the year.
b. Alternatively pupils could sequence the cards in a farming year calendar e.g. a circular display adding comments for the weather, main events and the kind of work a farmer might be doing at each stage.

Using picture set three
Crop farming
Ask the children to think about how weather is important to farming.
● When during the growing cycle would the farmer like rain? (Water is needed for the seeds to germinate but too much rain before sowing means the ground is too wet to get machinery on the field which would damage the soil. Heavy rain near harvest can spoil a crop and add to costs e.g. grain may need drying.)
● What might happen if the summer was very dry? (Low yields, poor quality, need for irrigation and thus extra cost.)
● How might it be different for different farms? (E.g. a sheep or beef farmer whose main crop is grass may welcome more rain in summer as this keeps grass growing, but a cereal farmer may hope for less.)
● What might prolonged or torrential rain do to a newly emerged crop? (Damage it, wash it away, cause flooding.)
● What might a drought do to crops? (Poor growth and development)
● What might heavy rain near harvest do to a fruit crop, e.g. strawberries or raspberries? (knock them off onto the ground, or cause moulds to grow on them, spoiling the crop.)
● How might climate change affect what is grown and where?
Explain that global climate change might make weather unpredictable (very wet stormy winters and really dry summers). This makes it more challenging for farmers to produce food, which will affect us all. It can also mean that farmers are able to grow new types of crops (e.g. those typically found in warmer or wetter climates).

**Extension activity**

Help the children to set up a “drought” experiment. Sow seeds – cress, beans or wheat, possibly obtained from a local farm. Plant and water the seeds, keeping compost just moist until after germination. After germination set up plant groups as follows:

- Group A: No water (to represent drought)
- Group B: Excess water (to represent deluge/torrential rain)
- Group C: Optimum water (control – perfect climate and weather).

Record the results at regular intervals using notes, drawings or photographs.
Using the videos

Accompanying this booklet are a variety of videos of interviews with farmers talking about their lives, their farms and their attitudes to the environment, food production and the economy. Many important themes are explored including:
- growing crops
- rearing animals for food
- food chain processes
- environmental management.

Plus, minus, surprising

a. Ask pupils to watch all, or part of the video and then fill in a PLUS, MINUS and SURPRISING circle like the one opposite – looking out for one thing about a farmer’s life they think sounds good, one thing they think sounds difficult and one thing that surprised them.
b. Collect the individual pupils’ suggestions and create a class PMS circle. Discuss and compare results and derive class consensus on how their awareness of farming has been changed by the video.

This limited task and writing suits younger pupils and focuses activity during the video. Expressing/justifying personal choices encourages oracy and acceptance of other viewpoints as well as demonstrating “what we have learned”.

Hitting the target

a. Working in groups ask pupils to create a target shape with three rings around the middle “bull’s eye”. Written in the bull’s eye is “The most important thing about farming is...”.
b. Allow pupils to listen to the interviews and record any comments that they think are important about farming (food, environment or society) on sticky notes. Using a whiteboard create a whole class target and arrange pupils’ comments according to how important they think they are. Discuss the comments with the class and agree a consensus on what should go in the “bull’s eye”.

e-resources available: www.whyfarmingmatters.co.uk
Drama, drought and deluge

Assign pupils different roles in a farm environment e.g. trees, wheat, hedges, butterflies, birds, cattle, stream. Use a sand timer to give each pupil one minute to explain in role how they would react in one of the extreme forms of weather:

- a summer drought
- a winter gale
- torrential rain.

Postcards from vegetables

Invite each pupil to choose one of several vegetables found in shops. Challenge the pupils to write, in the role of the vegetable, a postcard telling the reader when they were planted, how they were harvested and transported and how they will benefit the consumer.

Fruity diaries

Provide each pupil with paper cut in the shape of a fruit such as a strawberry, apple or plum. Ask them to write a diary of their life as a fruit from growing to being sold.
Habitats and food chains

Farmers are responsible for looking after fields, grassland, ponds, ditches, hedges and woods. These are important as habitats for many different types of wildlife. Other than farm animals, what animals do the children think may live in these different habitats that the farmer creates and looks after?

a. Ask pupils to imagine a stretch of hedge or a pond that a farmer has created. Brainstorm a list of any animal, including insects and birds that might visit the hedge/pond. Provide pictures and non-fiction books for the pupils to research ideas.

b. Help the pupils to consider which creatures are there all the time and which visit in a particular season. Talk about why the creature visits/inhabits the place.

c. Record the information by making models of hedges/ponds for a season. Use card and scrap materials. Shredded green paper makes an excellent hedge whilst ponds can be created from silver foil. Alternatively, use white paint to make animal footprints on black paper or make the prints on rolled out clay to show which animals would be in the pond/hedge.

d. For the following farmland habitats, ask the children to create appropriate food chains:
   ● hedgerow
   ● wheat field
   ● farm pond
   ● wild flower margins (edges of field)
   ● oak tree (in the middle of a field).
Hedge/pond for sale

Ask the children to think about what makes a house a good place to live. Ask them to think about the local area as well as the house. (Possible responses include warm and dry, comfortable, nicely decorated, a garden to play in, functional and clean kitchen, nearby amenities like shops, recreation facilities, cinemas etc.) Look at a number of “for sale” leaflets from estate agents and/or newspapers to see how persuasive vocabulary and phrases are used to help sell homes. Now ask them to imagine being a pond or hedge dwelling animal. What makes the hedge or pond a good place to live? Ask the children to write persuasive adverts for a pond or hedge to indicate why it is an excellent habitat for a particular creature. Encourage the pupils to be persuasive and to mention the special features that their hedge/pond offers.

Water use

a. Explain that all rivers begin and flow through farmland or moorland. Find out about the ways that farmers use water and also the ways that pupils use it.

b. Ask pupils to think about why it is important for farmers to reduce pollution and how they do that.
Energy for the future

Talk to the pupils about fuel and how it is used to produce electric power, heat (warm buildings, hot water), and transport (e.g. in cars, aeroplanes). Mind map “fuel” and how it is used. (Possible energy sources may be: coal, oil, gas - natural gas, biotane, propane - petrol, kerosene, uranium, wood, straw, wind, solar, wave, tidal, hydro).

Do the children know which of these are renewable energy sources? What does renewable mean? Have the children seen wind turbines or solar panels in the countryside or on farm buildings?

Explain that electricity can be produced from these renewable sources or can be made (generated) by burning fuels in power stations and that a lot of our dependency has been on fossil fuels. Ask the children, what is the problem with burning fuels? (CO² production). Go on to ask the children if they know what bio-fuels are.

Copy a strip of instructions for “Producing bioenergy” for each pupil. Encourage the pupils to read the statements and to place them in a possible order. Ask them to explain why they think their order is correct. When everyone is happy with the orders, stick them into concertina books made from strips of paper cut from A3 sheets. Ask the pupils to illustrate the statements and to explain how bio-fuels are used and why they are important.
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<th>WILLOW</th>
<th>BIO-GAS</th>
<th>OILSEED RAPE</th>
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<tr>
<td>Burn wood in an incinerator</td>
<td>Put manure into a bio-gas digester</td>
<td>Harvest oilseed</td>
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<tr>
<td>Use heat to keep buildings warm over winter</td>
<td>Burn methane gas</td>
<td>Put oil in cars with adapted engines</td>
</tr>
<tr>
<td>Cut down some willow</td>
<td>Collect methane gas from manure</td>
<td>Crush seed to release oil</td>
</tr>
<tr>
<td>Transport wood to farm buildings</td>
<td>Spread manure on fields</td>
<td>Plough land</td>
</tr>
<tr>
<td>As trees grow they store carbon</td>
<td>Collect and store manure from animals</td>
<td>Plant oilseed</td>
</tr>
<tr>
<td>Plant willow trees</td>
<td>Use heat to warm buildings in winter</td>
<td>Process the oil to purify it</td>
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Producing bioenergy
Why Farming Matters

What is bioenergy?

‘Bio-based’ fuels or ‘bioenergy’ refer to fuels made from crops, wood and other organic materials, rather than those derived from fossil reserves of oil, gas or coal. As natural products made from natural materials they are also biodegradable, and can reduce problems of waste disposal.

This is a very long list, including:
- wood, wood chippings and straw
- pellets or liquids made from wood, straw or energy crops
- bio-gas (methane) from animals’ excrement
- bio-ethanol, bio-diesel or other liquid fuels made from processing plant material or waste oil.

In recent years, the term “bio-fuel” has come to mean mainly the last category – bio-ethanol and bio-diesel, made from crops including corn, sugarcane and rapeseed. Bio-ethanol, an alcohol, is usually mixed with petrol, while bio-diesel is either used on its own or in a mixture.

Are bio-fuels climate-friendly?


e-resources available: www.whyfarmingmatters.co.uk
Produce in the flag

Many different types of produce are farmed or grown in Britain. The flag on this page identifies just a very few of them. You will find the flag image to download from our website.

a. Ask them to identify as many of the produce as they can and make lists of any items they think they have eaten and not eaten in the last year.

b. Classify the produce in the flag as:
   - available in the shops all year round
   - seasonal (e.g. summer only)
   - usually grown in the UK or
   - can be grown in the UK but often usually imported from abroad.

c. Conduct a class or group survey, using a tally chart, to find out the most and least popular food product in the flag photo. Record the results on a bar chart or bar-line graph. It is quite possible that the children haven’t tasted some of these food items, in which case they are deciding which they think they would like better from its appearance and name. (As an extension, you could have a tasting table appropriate to your class/group, with some of the products available, e.g. fruits and cheese.)

d. Ask pupils to make their own food flags, or to produce a collage on a paper plate in the style of Eatwell Plate (refer to British Nutrition Foundation for further information) of a balanced meal, using cut out images of foods produced on UK farms.
Farming diary

Either individually, in groups or as a class arrange the time line for a dairy farmer’s day. When the time line has been completed encourage the pupils to consider the farmer’s feelings throughout the day.

Extension

If possible invite a local farmer in to be interviewed by the children about their day (for help and advice contacting a farmer see p39). Ask the children to prepare the questions beforehand, e.g. Favourite part of the job? What time do you get up? How did they become a farmer? Who are the other people you work with during your day? What is the first job of the day? And so on. Go on to produce a booklet “A day in the life of the farmer”.

Called to help with lambing at neighbour’s farm before dawn. Six more lambs during the night.

Well-earned breakfast this morning. Looking forward to tasting the sausages from the supermarket.

Time to relax after a very busy day. I love being a farmer.

General farm tidying and providing clean bedding for the animals. Good time to check all animals are happy and healthy.

Milk tanker arrives after lunch to collect our milk – it’s good quality and the yield has been fine today.

School party arrives before lunch – full of enthusiasm and keen to meet the cows and learn more about farming.

Milking by 6am – need to measure volume of milk collected and compare with previous days.

Late afternoon milking before tea time - need to make sure the animals have their tea too.

After lunch, sit down at the computer and complete my paper work and go through my plans to purchase some new high-tech machinery for the farm.

Feed the cows after morning milking – they need a bit more silage I think. Need to keep the milk yield up during the winter.
Country collage

On a large display board create a collage of textures to represent elements of farming, countryside and food products. Possible elements include:

- ploughed land – corrugated cardboard painted brown
- soil – dried and stuck on with glue
- grass – artificial grass as used in a greengrocery
- trees or hedgerows – dried leaves and twigs or leaves made by printing or wax crayon rubbings
- wool – sheep made from cotton wool balls with black sugar paper for legs and heads, knitted clothing
- meat – representations made of card
- milk – clean milk cartons.

Invite ideas for other elements from the pupils.

What would you grow?

Tell pairs or small groups of children that they have been put in charge of a field on a local farm (or future school plot/allotment). Ask them what they would grow in the field to help feed children in their school/neighbourhood. Encourage the pupils to find out what their friends like to eat and relate the food products back to the original crops. This could be extended to dairy, cattle, pigs and sheep to help pupils see that some foods are best reared on a farm rather than on a small plot.

Produce brochures of their ideas for a successful field/farm etc.

e-resources available: www.whyfarmingmatters.co.uk
Where does our food come from?

Ask the pupils to choose three food products from the list. They should find out as much as they can about where each comes from and how it is produced. Where does it grow? Or how is it reared? Is it British or is it imported? Is it seasonal? Can you buy it all year? They should use dictionaries and search engines to look up the words they don’t know. Follow it from farm to fork.

Extension activities

Arrange to visit a farm or invite a farmer into school to talk about what s/he grows and rears. Where do the products go after leaving the farm? How does the farmer decide what to grow or which animals to rear? What would make the farmer decide to change what is produced?

Lamb
Onions
Beef
Strawberries
Cheese
Broccoli
Runner beans
Pork
Raspberries
Chicken
Carrots
Apples
Potatoes
Peas
Tomatoes
Salad leaves
Eggs
Sugar
Have we always eaten the same food?

Pupils can carry out a survey of their parents/grandparents/teachers/neighbours. What did they eat as a child? Did they have snacks? What were school dinners like? Did they ever eat out at restaurants or cafes? Did they have takeaways? What other questions can you think of? Research rationing during WW2. Do we eat more healthily today and what is a healthy diet?

Extension activities

How has farming changed over the past century and why? Invite a retired farmer into school to tell you about their life. What do you think we’ll be eating in the future? Might it be insects? Why not invite a young farmer to talk about their farming plans for the future (for help and advice contacting a farmer see p39).

Who provides our food?

There are lots of people involved in bringing us our food. Here’s the start of a spider diagram showing some of the people who work to bring us the components of our beefburgers! Pupils could try making their own spider diagrams based on one of the foods they chose in activity ‘Where does our food come from’.

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e-resources available: www.whyfarmingmatters.co.uk

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Salad farmer

Picker

Chilled transport

Processor (washes and trims)

Salad

Beef

Butcher / retailer

Abattoir operator

Beef farmer ➔ Vet

Machinery dealer

Wheat farmer

Miller

Baker

Bread

Cheese

Cheesemaker

Tanker driver

Milk

Dairy farmer ➔ Herds person
Farming maths

A variety of mathematical problems can be presented. Examples of problems are presented here and teachers will adapt according to their pupils’ knowledge and skill level.

Imagine you are going to hold an end of term barbecue for the class. There will be 25 children and five adults attending. They can choose to have one beef burger or two sausages.

20 people want beef burgers. What fraction of those attending want beef burgers?

Of those wanting beef burgers 1/5 don’t want onions. How many don’t want onions?

0.8 of the children want ketchup. How many children will have ketchup?

The local farmer has been in to school to explain how wheat is grown to produce flour that is used to make the buns. The farmer tells you that it takes 130 grammes of wheat to make 100g of flour and that it takes one square metre of land to produce 900g of wheat. The local baker says that it takes 300g of flour to make five buns.

If each person attending the school BBQ has a bun, how many kg of flour would be needed?

How many grammes of wheat will the farmer need to grow?

How many square metres of land will it take to produce the amount of flour needed?

If the farmer’s field measures 100m by 100m, how many square metres is this?

If the farmer can only use 90% of the field to sow wheat grain, what area does he have to grow wheat?

How many kg of wheat will this produce?

It is wet during the harvest and the farmer only manages to get 7,938kg of grain. What percentage of the crop is this?
LET'S TALK FARMING
LET'S TALK
FARMING
LET'S TALK FARMING
LET'S TALK FARMING
How to use the e-resources

The e-resources accompanying this booklet include:

- high resolution images for use in the classroom
- short videos to introduce the topics or for use in the exercises
- useful web links to further teaching resources or to allow children to carry out their own research and exploration of the topic
- curriculum guides
- some suggested answers to questions in the booklet, to help teachers guide their conversations with pupils.

You can also tell us about how you use Why Farming Matters in your classroom and let us know about further resources that would help you.

What can FACE offer?

Farms to visit

We can help you to find a farm to visit. In the first instance you should go to www.countrysideclassroom.org.uk and under ‘places to visit’ you can enter your postcode to see which farms and outdoor locations are available in your vicinity. If you need additional support, our team of regional advisers will be happy to make suggestions of farms which might suit your needs. Their contact details are available here www.face-online.org.uk

Farmers into school

Similarly, if you would like to welcome a farmer into school, the Countryside Classroom ‘people to ask’ section is your first port of call. After that, again, the FACE team can suggest local contacts.

Resources

There are many resources available to support your classroom work on food, farming and the countryside. Look on the Countryside Classroom website under ‘resources’.

Training and CPD

FACE offers training for teachers and trainee teachers to find out how to incorporate food and farming topics into classroom teaching and how to arrange farm visits. To discuss requirements please contact FACE on 0845 838 7192 enquiries@face-online.org.uk

e-resources available: www.whyfarmingmatters.co.uk
The National Farmers’ Union represents the farmers and growers of England and Wales. Its central objective is to promote successful and socially responsible agriculture and horticulture. Visit: www.nfuonline.com

Farming and Countryside Education (FACE) is a registered charity working with its members and partners to promote visits to farms, and to provide easy access to a wide range of high quality educational resources and activities to complement both school-based studies and outdoor visits. FACE believes that all children should have access to the countryside, regardless of where they live, their cultural group or their economic background. They need to be prepared as leaders and consumers of a future in which more than nine billion people will need to be fed. Visit: www.face-online.org.uk

Countryside Classroom brings together the work of organisations and individuals who are committed to ensuring that children learn about and experience food, farming and the natural environment. Countryside Classroom is a free-to-access online portal that pulls together high quality resources to use in the classroom, places to visit with a class and people to ask for expert advice and support from across the UK, covering the topics of food, farming and the natural environment. Visit: www.countrysideclassroom.org.uk

www.whyfarmingmatters.co.uk
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