

Year 8 Fieldwork Case Study: Organic Farming
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One of the focuses in the year 8 Scheme of Work is the changing distribution of economic activity and its impact (NC 6h, 6j). This fieldtrip aims to introduce the idea of how farming is changing and how farming (organic and non-organic) has an impact on the environment. Key issues of water pollution, eutrophication of water supplies, animal welfare, GM crops and farm diversification are raised throughout the fieldtrip.

Bore Place farm

Bore place is part of COMMONWORK, which is a small group of organisations who offer a range of educational and practical activities which explore in practice what it would be like to work co-operatively with nature and people worldwide, and which engage, challenge and encourage people to participate in the process of learning and exchange ideas and experience.

It is predominately an organic dairy farm, but has diversified by opening brickworks, offering educational trips, conference facilities, cookery and woodwork classes as well as working with volunteer organisations.

Learning Outcomes (activities linking to outcomes are in bold)

1. To identify the social, moral and environmental advantages of organic farming.
Students have the opportunity to interview a farmer about all aspects of the farm. They have a tour of the vegetable garden and diary farm.
2. To understand how an organic diary and arable farm differs from a conventional farm.
Students are given the opportunity to ask questions comparing farms and also given a tour and talk about the hens rescued from a battery farm
3. To introduce various physical fieldwork techniques; and testing hypotheses by investigating changes down a slope.
Soil sampling, slope profiles and infiltration rates measured across a slope.
4. To understand what diversification is and examples of it at Bore Place.
A tour of the brickworks and other buildings around the farm to give examples of diversification.
5. To work collaboratively as a team to create a piece of art work.
Students work in groups to create a farm scene using materials from the farm e.g. soot from the brickworks, saw dust, animal feed.

Links to the curriculum

- Asking geographical questions.
- Collecting, recording and presenting information.
- Drawing and justifying conclusions.
- Appreciate how people's values and attitudes, including their own, affect contemporary social, environmental, economic and political issues and to clarify and develop their own values and attitudes about such issues
- Selecting and using appropriate fieldwork techniques and instruments.
- Identify, describe and explain physical and human processes, and their impact on places and environments.

- Studying the changing distribution of economic activity and its impact, including: types and classifications of economic activity and how and why the distribution has changed and is changing [for example, the impact of new technologies], and the effects of such changes.
- Understanding how conflicting demands on an environment arise
- Understanding how and why attempts are made to plan and manage environments.
- Studying the effects of environmental planning and management on people, places and environments.

The fieldtrip could fit easily into a farming SoW. I had only just introduced the topic, outlined the main types of farming and the physical/human inputs, processes and outputs of a farm. It could be carried out as part of an environmental issues topic.

Preparatory work

1. Outline the aims of the fieldwork trip.
2. Run through the methodology of the fieldwork; how to use the fieldwork equipment and analyse why we are using it for each task. E.g. the clinometer and infiltration rate tube.
3. Set hypotheses for soil testing and infiltration rates.
4. Organise class(es) into manageable groups (4-5).

Guide to the activities:

Time	Task	Equipment needed
09.45	Arrive at farm, met by farm education officer and farm manager. Students change into Wellington boots	
09.50	Introduction to the farm by Bore Place staff. Reminder of fieldwork activities led by school staff.	Student booklets
10.15	Students carry out; - Slope profile every 2 metres. - 3 soil samples at top, middle and bottom of slope. - 3 infiltration rate tests at top, middle and bottom of slope. Led by all staff	Per group: metre tape, clinometer, infiltration tube, bottle of water, gloves, trowel, 3 plastic bags/bottles for soil samples.
11.30	Hand in of equipment. Tour of the brickworks, led by farm staff. Highlighting how farm has diversified. Students to fill in booklet answers.	Booklets
12.00	LUNCH	
12.45	1 group have interview with farmer and tour of diary farm, complete booklet.	Tour of organic vegetable patch/rescue battery hens. Make art work using materials from the farm
		Booklets

13.45	Tour of organic vegetable patch/rescue battery hens. Make art work using materials from the farm	1 group have interview with farmer and tour of diary farm, complete booklet.	Booklets
14.45	Thank yous to staff, depart.		

Photos:



Students visiting the organic vegetable garden An example of the art work made

Feedback from teacher

The trip is successful for my school (an all girl's urban selective school) due to the fact that visiting a farm is someone hardly any of the students have done before. They are very ignorant to where their food comes from and the processes involved. When asked before the trip, almost all the girls said yes to eating some organic food, but few know the environmental benefits of it. The artwork activity allows the girls to work together and have some fun at the same time!

Feedback from the students was also positive. They knew little about the benefits of organic farming, especially for the animals themselves. The change of scenery and smells kept them motivated throughout the day. The art work was enjoyed by all (especially when turned into a competition between groups). Weaker students shone during the task.

Follow up work

1. Students were asked to draw a scale drawing of the slope.
2. Infiltration rates were drawn graphically along the slope.
3. Soil ph testing were carried out in class and results shown graphically on slope profile
4. Experiment written up as scientific experiment i.e. hypothesis, method, equipment, results, analysis, conclusion, evaluation.
5. Presentation carried out using information gathered from trip (see attached file)

Top tips

Make students aware that correct equipment is essential. Wellies, waterproofs and Clipboards are a must.

Explain techniques in class before hand, there isn't adequate time in the day.

Equipment list

Clinometers

Metre tapes

Infiltration tubes

Bottles of water

Re-sealable plastic bags/soil pots

Trowel

Gloves

Hand wash

First aid kit (inc. plastic gloves for those with cut fingers etc.)

Contacts and to make bookings:

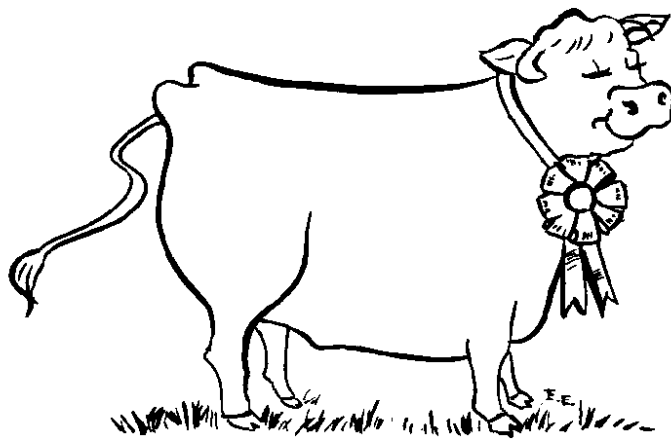
Organic Farming at Bore Place, Chiddingstone, Kent, TN8 7AR

<http://www.commonwork.org/>

YEAR 8 GEOGRAPHY
FIELDWORK

Friday 23rd March 2007

Commonwork Organic Farm
Bore Place, Kent



Name.....

Form

CODE OF CONDUCT FOR YEAR 8 FARM VISIT

During your visit to the farm you must make sure that you follow the code of conduct below.

It is absolutely necessary for you to follow this code as animals carry a range of micro organisms, which can be transmitted to humans and cause ill health e.g. the E coli bacterium. If the guidelines below are followed the risks of you contracting any illness is limited.

- * Wear suitable footwear - preferably Wellington boots.
- * Do not kiss animals.
- * Always wash your hands thoroughly before and after eating.
- * Only eat food in the designated eating area.
- * Do not bring chewing gum with you or use it at all.
- * Do not suck your fingers or put hands, pens, pencils, crayons etc. in your mouth.
- * Change your footwear before leaving the farm - bring a carrier bag.
- * Bring wet-wipes to wipe your hands after touching your boots.
- * If possible avoid touching your Wellington boots, as they are likely to have animal faeces on them.
- * Do not pick up any tools or objects around the farm unless you have been given permission to do so.
- * Do not climb onto walls or animal pens.
- * Approach and handle animals quietly and gently.
- * Do not chase, frighten or torment the animals.
- * Listen carefully to and follow all instructions and information given by farm staff.
- * If you have any cuts or grazes on your hands cover them up with a waterproof dressing.

Organic Farming at Bore Place

When the dairy unit was first constructed in _____ a handmade brick making operation was established to make use of the vast amount of clay displaced, and continues to be an exciting educational resource for visitors.

The organic conversion of the farm was started in _____ and was completed with few technical problems. Certification of its milk was received on 1st April 2000 from the Organic Farms and Growers Limited. Organic conversion of all land was completed between 1996-2001.

335 hectares are farmed in total, including 147 rented from neighbouring farms to increase self-reliance in terms of feedstuff and to allow stock numbers to be kept up to around _____ cows.

It is run by Commonwork Organic Farms Limited.

The dairy herd consists of Friesian Holstein m_____ cows. Milking is done _____ a day at 5.00am and 2.30pm, through a 20 x 20 herringbone low level parlour with automatic cluster removal and milk transfer, taking on average 4 hours.

During the _____ the cows are housed in timber-framed kennels clad with waney edged elm from locally felled trees. The integral feed passage enables the herd to be divided into groups according to dietary needs. Hygiene is carefully planned with dairy and slurry treatment at opposite ends of the large cow-cubicle building. All slurry and m_____ is used on the land to recycle fertility to the growing crops and add organic matter to the soil.



Advantages of Organic Production

More s..... farming system.

Meeting m.....needs

Better milk p.....

Higher c..... and ecology standards

Added educational v.....

Enhanced q..... of produce

Infrequent veterinary v.....

Happier c.....!

Organic Conversion Process

Lower stocking rate

Stocking rates have fallen from 2.1 cows per hectare to 1.7. as a result of discontinuing inorganic fertiliser applications. Grass leys have been replaced with white or red clover and grass leys, which are able to affix atmospheric nitrogen. However due to the renting of extra hectares total numbers will remain the same.

No chemical sprays

This means maize will cease to be grown for forage and replaced with cereal crops cut for silage. Also weeds, particularly docks, can be a problem so a topper has been purchased to stop them seeding and spreading.

Fewer antibiotics

We are using homeopathic remedies and do not now routinely antibiotic tube all cows at drying off. However if a cow were seriously infected with the vet's advice we would still use antibiotics.

Fewer veterinary fertility treatments

During the four months breeding season the vet used to come each week, but last year only twice. This has greatly reduced veterinary bills but only marginally increased our calving index (average days/cows/calf)

Increased time on milk for calves

Calves now stay on milk for a minimum of 12 weeks (previously 6 weeks). Wormers are no longer used and we rely on grazing "clean" (no stock for at least one year) pastures.

No routine chemicals

For example fly control no longer involves spraying the cows with insecticide but relying on a fan in the milking parlour and a water mist over the door to prevent the flies coming into the parlour.

Different feed content

The biggest change has come as a result of needing high quality organic forage, which must make up at least 60% of the cow's ration, which means:

- No protein feeds with genetically modified organisms
- No animal proteins
- No general mineral and vitamin supplements
- No extracted (chemically) protein feeds

Sustainability

In order to be able to grow on site most of what our cows need, a 5 year lease was taken out on neighbouring arable land. This has proved a financial and practical success and we aim to renew the tenancy in the near future. All land has achieved organic conversion.

We will recycle our own nutrients, and our slurry and Farm Yard Manure will be of even greater importance and will be spread over the whole of the Farm to aid plant growth.

Interview Questions

1. What does the farm produce? _____

2. What animal's do you keep on the farm? _____

3. Who do you sell your produce to? _____

4. Does your farm ever use fertilisers or pesticides? _____

5. How do you remove pests? _____

6. Have any governments or EU decisions affected your farm in any way, or caused any changes? _____

7. How many people work on your farm? _____

8. What sort of machines do you use on your farm? _____

9. In what ways as your farm changed over recent years? _____

10. Is there any other ways the farm is being environmentally friendly? _____

Brickworks

What does diversification mean?

Brick making system.

What are the raw materials (inputs) for the brickworks?

Howe are the bricks made (processes)?

Who are the bricks sold to? How much do they cost compared to conventional bricks(outputs)?

Why is soot added to the bricks?

Organic vegetable garden

What products are grown here?

What are the tyres used for?

What makes the chickens different from battery farmed chickens?

Your own questions:

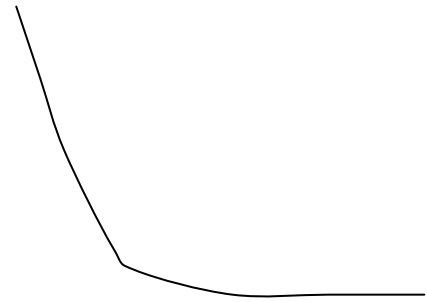
Infiltration Rates

Site	Infiltration amount (mm)
Base of slope	
Middle of slope	
Top of slope	

Slope Investigation – Methods

Slope Profile

Equipment needed:

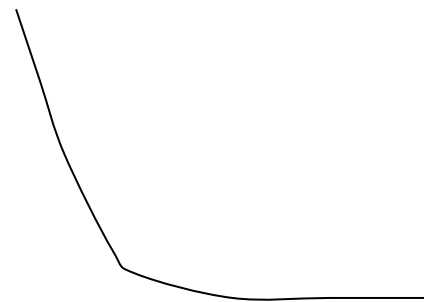


Method:

Problems with method:

Infiltration Rates

Equipment needed:



Method:

Problems with method: