



### Context:

Learners are introduced to the types of farms in our country, e.g. arable, dairy etc. and where they are located. They use information presented in tables and graphs to find out more about farming in the UK. They begin to recognise the challenges farmers face and how engineers work with them to solve problems.

### Engineering focus:

Learners will be working as an engineer by asking questions to understand more about farms and by identifying problems.

### Learning time:

2 hours

### Suggested age group:

7-9 years old

### Curriculum for Excellence links:

#### First Level:

I explore and discover engineering disciplines and can create solutions. TCH 1-12a  
I have explored a variety of ways in which data is presented and can ask and answer questions about the information it contains. MNU 1-20a

Using technology and other methods, I can display data simply, clearly and accurately by creating tables, charts and diagrams, using simple labelling and scale. MTH 1-21a

MTH 1-21a

When preparing and cooking a variety of foods, I am becoming aware of the journeys which foods make from source to consumer, their seasonality, their local availability and their sustainability. HWB 1-35a

#### Second Level:

I can extend my knowledge and understanding of engineering disciplines to create solutions. TCH 2-12a

Having discussed the variety of ways and range of media used to present data, I can interpret and draw conclusions from the information displayed, recognising that the presentation may be misleading. MNU 2-20a

I can display data in a clear way using a suitable scale, by choosing appropriately from an extended range of tables, charts, diagrams and graphs, making effective use of technology. MTH 2-21a

When preparing and cooking a variety of foods, I am becoming aware of the journeys which foods make from source to consumer, their seasonality, their local availability and their sustainability. HWB 2-35a

### Keywords

Elevation  
Arable  
Horticulture  
Roots  
Nutrients  
Compaction  
Drainage  
Waterlogged  
Sowing  
Fertiliser  
Weeding  
Harvesting  
Irrigation  
Ploughing

### Resources:

- [NFU Video: Introduction to Arable Farming](#)
- Soil Defenders Session 1 Presentation
- Access to the internet for mapping exercise

### Optional:

- Plant trays
- Compost
- Watering cans
- Arable seeds eg. winter wheat

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1

## What do we know happens on farms in the United Kingdom? (5 minutes)

In groups of 3, ask the learners to quick-fire idea storm about things they think happen on farms. Ask them to decide on 4 things that they think happen most often, and challenge them to compose a short poem, ditty or key phrases to share with the class.

Farmers caring for their animals and crops.  
Animals grazing.  
Rows and rows of crops.  
Machinery and tractors get the work done.

2

## What sort of farms are there? (60 minutes)

Use Slides 1–10 to introduce learners to the two types of farming that are most common in the UK. The slides engage the learners in using their maths skills to interpret and present data about different types of farms across the UK and local to them. New vocabulary to describe types of farms will be introduced.

Learners can also use Google maps to research farms in their local area and keep a tally of the different farm types to test their understanding of new vocabulary.

Key learning points to reinforce:

- Different farms appear in different parts of the UK because of the type of land and space available.
- Arable farms are farms that grow plants for crops. They are common in the south east of England where the summers are warm and the land is low, flat and fertile.
- Dairy farms are livestock farms, which are common in the south west and the west of England where the climate is warm and wet. The land may be flat or hilly, but not too steep.

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## What is an arable farm? (10 mins)

Use the [\*NFU Video: Introduction to Arable Farming\*](#) to explain what an arable farm is. This is slide 8 in the PowerPoint.

Activity: Use active listening to enable the learners to understand keywords and **identify the problems** that the farmer describes.

2

### Optional: Learners become arable farmers

Groups of learners can prepare soil trays and plant their own arable crop such as winter wheat in rows. They can take care of their crop and make observations over time of the crop as it grows.

4

This could be developed into a science enquiry where learners explore the factors that affect the growth of their crop. Different groups of learners could change particular variables such as the depth of seeds, spacing of seeds or use of a fertiliser.

5

Use the **infographic** on slide 9 to explain the relationship between farmers and agricultural engineers. Key things to note:

- Agricultural engineers design and create innovations to make farming more efficient and sustainable.
- Agricultural engineers work through the Engineering Design Process: they **ask** questions to identify problems on the farm; **imagine & plan** solutions to those problems; **create** designs to solve the problem and then test and **improve** their designs.



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