Cattle Carers - Session 1
Introduction to British Farming

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 learn about the processes that take place on a dairy farm and begin to recognise the challenges dairy farmers face and how engineers work with them to solve problems.

Engineering focus:
Pupils will be working as an engineer by asking questions to understand more about farms and by identifying problems (Problem finding)

Learning time:
1.5 hours

Suggested age group:
9-11 years old

Keywords
dairy
togographic
agriculture
milk
butter
cheese
yoghurt
lactose
calcium
grazing
milking
udders
pasteurising
processing

Curriculum links:
Mathematics
Pupils will be able:
- To interpret and construct pie charts and line graphs and use these to solve problems.
- To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.

Resources:
- NFU Video:Introduction to Dairy Farming
- Cattle Carers Session 1 Presentation
- Access to the internet for mapping exercise

Optional:
- Dairy products (milk, condensed milk, cheese, yoghurt, butter)

Step-by-step plan

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

Where does farming take place in the UK? (30 minutes)
Use Slides 2–8 to introduce learners to the distribution of farms in the UK. The slides engage the pupils in using their maths skills to interpret and present data about land use in England, Scotland, Wales and Northern Ireland.
Learners interpret data in a table, match data to unlabelled pie charts and then construct their own pie charts using a ratio table for support.

3

What sort of farms are near us? (30mins)
Use Slides 9–12 to encourage learners to start thinking about the different types of farms there are (dairy/sheep/cattle/pigs/poultry/arable/horticulture) and what sort of farming takes place in their local area.

Learners carry out a google mapping exercise to identify how many farms are close to their town/city and what sort of farms they are. This can be developed into a data gathering and analysis exercise with learners keeping a tally of the types of different farms and then choosing appropriate charts to display this data.

Learners compare the amount of farmland that is used for dairy farming in their region with other regions in the UK by drawing a bar chart. Data can be edited to include other regions using national farming data from the Department for Environment , Food and Rural Affairs. They use maps to think about where dairy farming is most common and why (slide 13).

4

What products do we use from dairy farms? (15 mins)

Learners collaborate to **list** as many things as they can that they use in their daily lives, that have originated from dairy farms. Writing the separate items on post-it notes will help with the next task (slide 14).

Learners **rank** their list of dairy products into those that they think have the highest lactose content to those that have the lowest (slide 15).

Define the meaning of lactose to the learners and share lactose data (grams per 100g of product) for them to use their data to **check** their ranking of dairy products (slide 16).

Ask learners why dairy produce is important in their diets to connect with prior learning about healthy diets and the importance of calcium. Share calcium data on common dairy products to support learners in considering whether they get their recommended daily amount of calcium each day.

Optional: Bring a range of dairy products into the classroom for learners to taste.

5

What happens on a dairy farm? (10 mins)

Learners watch the NFU video: Introduction to dairy farming.

Ask learners to **summarise** the main processes involved in dairy farming to explain how dairy products get from the farm to the supermarkets (slide 17).

Through watching the video and listening to Farmer Amy describe his/her work, learners should be able to identify multiple problems that he/she faces on the farm.

Encourage learners to reflect on problems related to sustainability and climate change - what have they learnt about how farming might impact climate change? Why is that a problem? Is farming an optional human activity? (Slide 18)

6

What questions would you ask to find out more about dairy farming?

Allow some time for learners to reflect on what they have learnt about dairy farming and the problems faced by dairy farmers. Ask them to think of additional questions they would like to ask dairy farmers to find out more about processes and problems (slide 19).

How do agricultiral engineers work with farmers?

Use the **infographic** on slide 20 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.
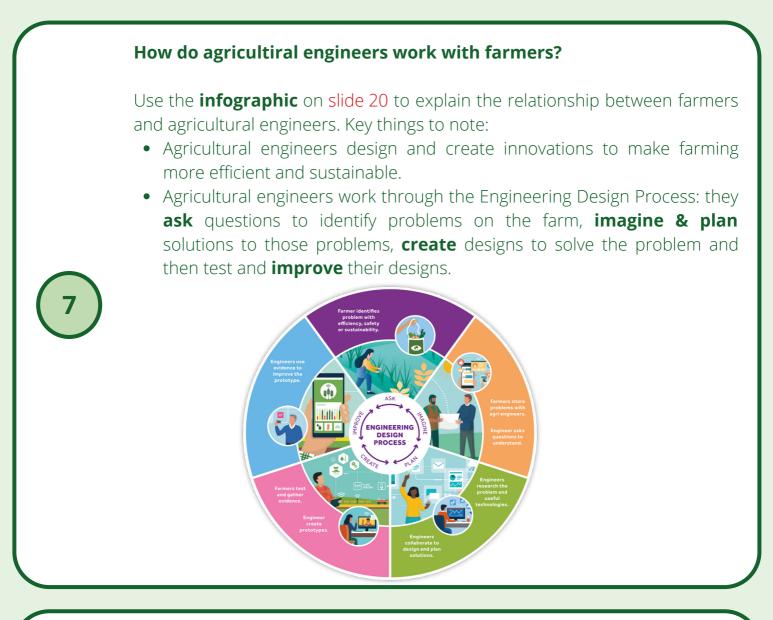
7

Optional activities:

- **True or false:** (slide 21/22) Learners collaborate in pairs to decide which of the 8 statements are true and which are false. (Note the false Statements: Cows actually eat 50kg of food a day (equivalent to 300 peanut butter sandwiches), Cows actually like music and research shows it makes them produce more milk and cows actually drink 60 litres of water a day (a whole bath full)).
- **Making Butter**: Explore the NFU STEMterprise resources for processing milk to create a dairy product.
- **How milk gets from the farm to the farm shop video**: This BBC Teach video will provide additional support for learners curious about dairy farming.
- **Welcome to Holly Green Farm video**: In this video Farmer Neil explains how he cares for cows on his farm.