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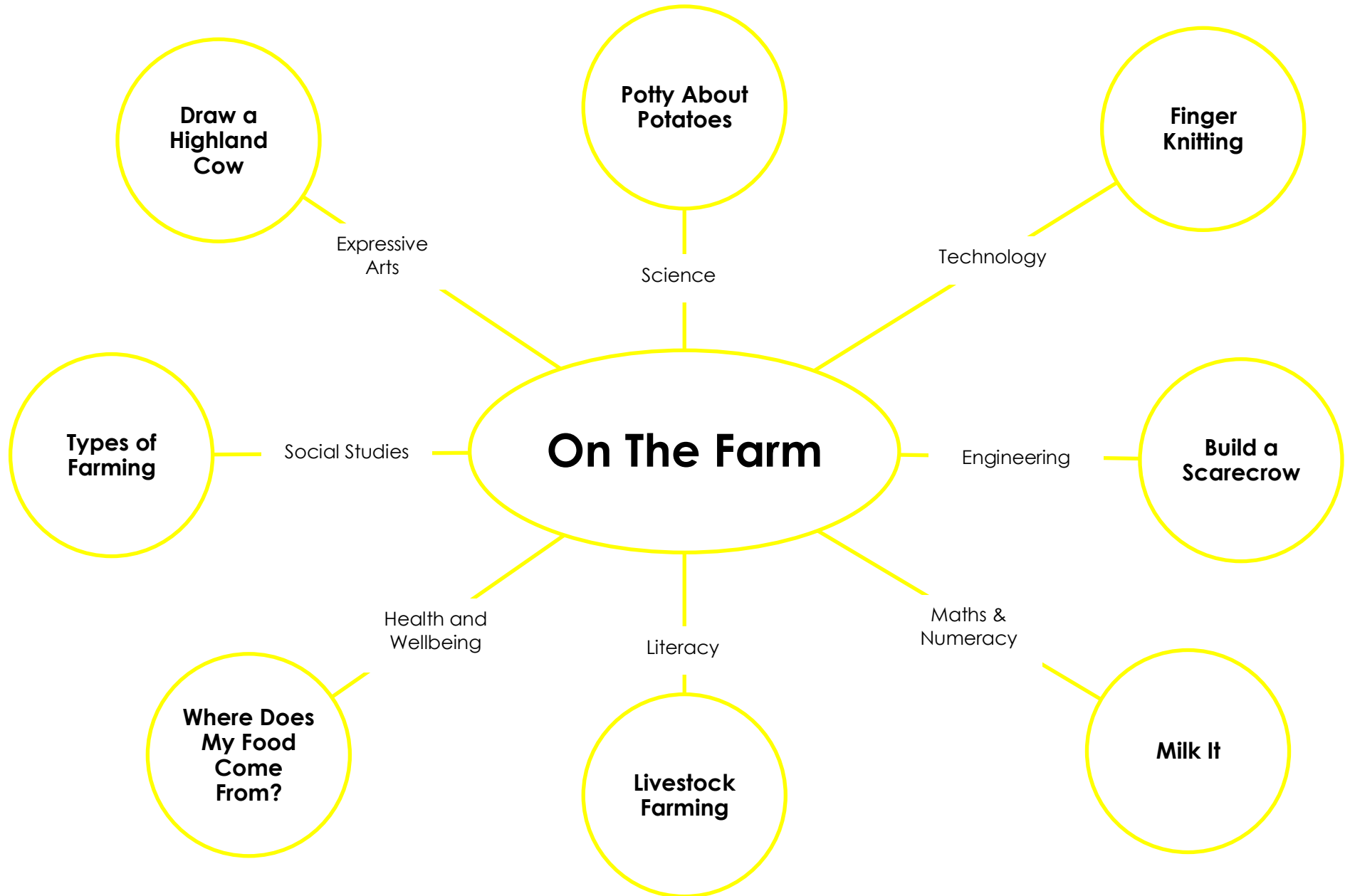**Where Does My Food Come From?**

Livestock Farming

Milk It

Science Challenge

Potty About Potatoes

Potatoes are a major crop grown on agricultural farms and according to Moore and Son (potato farmers and potato packers), in the UK each person will eat an average of 103kg of potatoes a year. That's 500 medium sized spuds!

Today we will set up an investigation to allow us to watch the roots develop on a potato. We often lose the opportunity to see root development when we plant things into the ground. This activity will allow you to see the root growth and the leaves developing from a single potato.

You Will Need: clear sided container, or plastic cup, 4 cocktail sticks, small potato

Cocktail sticks are very sharp – be careful and ask an adult for help pushing them into the potato.

Instructions:
1. Take your potato. Turn it round and push a cocktail stick in at each quarter turn.
2. Take your container and fill it with water
3. Place your potato over the top of the container.
4. The cocktail sticks should hold it in place so only the base of the potato touches the water.
5. Leave the potato on a windowsill and wait and watch as it grows. (This can take several days!)

Find out more about how potatoes grow here: https://www.youtube.com/watch?v=lYBuY-DnCJc

The Science:
Potatoes don't grow from a simple seed. They grow from a seed potato. The seed potato has small sprouts on it and is ready to grow. When you forget about potatoes in the cupboard for a while, they might start sprouting like a seed potato.
Before planting, the farmer ploughs the land and pushes the soil into ridges. After that, the farmer removes any stones. This is done to stop the stones squashing the potatoes as they grow underground. The farmer then plants the seed potatoes into the ridges and covers them with soil to protect them.
After the potatoes are planted, they grow roots down into the soil. Then new shoots reach up through the soil towards sunlight, and soon there are green leaves above ground. The leaves produce energy via a process called photosynthesis to help the roots grow bigger and eventually become potatoes.

Extension:
Want to make it more experimental? Set up several containers and add something different to the water in each one, such as salt, sugar, plant food or food colouring.
Try growing other plants in the same way, for example avocado seeds, and see what happens.

Activity and photo from www.ltl.org.uk/free-resources

Learning at Home

Technology Challenge

Finger Knitting

People have been knitting for centuries. Lots of different materials including cotton and linen have been used as well as wool. People would not only knit clothes, but fishermen would also use the skill to make nets to help them catch fish. Today most people use wool to knit warm clothes like jumpers, scarves, and hats. The wool usually comes from the coats of sheep on farms.
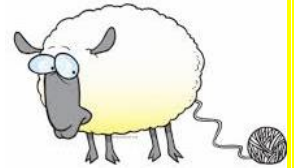
Before you start finger knitting you need to make a slip knot. This makes the loop that ties to your pointer finger.

To form a slip knot: Start your slip knot about 10 – 15cm from the cut end of your wool. You'll want to have that extra wool on the end so you can tie it later.
Begin by making a loop, so that your wool crosses itself. Then, you will make another small loop to go under and up through your 1st loop. This will be the part that can tighten and goes on your finger! Once you bring the 2nd loop up through the 1st loop, hold the 2nd loop while you gently tighten the strings. Then, place the slip knot on your pointer finder. You are ready to begin finger knitting!

Instructions:
1. Tighten the slip knot around your finger. Try to hold the short piece of yarn out of the way by pinching it in your hand.
2. Next, unravel enough wool so the ball isn't in your way. Grab that piece that's still connected to the ball. Loop it around your pointer finger by circling under and away from your finger. It should be closer to the tip of your finger than the loop that's already there.
3. Next, take the wool furthest from the tip of your finger and pull it over the other loop and off your finger! This step is called "jump over the rope".
4. Continue to repeat.

How to tie it off at the end:
Cut the wool a few inches from the end so you have room to tie it. Take your finger out. Tie it by bringing the cut wool up through the loop and pulling it closed.

Click here to watch how to finger knit: https://www.youtube.com/watch?v=yfkMDcNygL4

Images from www.clipart-library.com

Engineering Challenge

Engineering Design Process
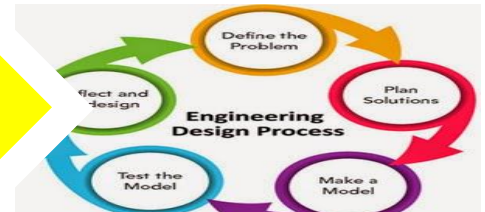
Build a Scarecrow

A scarecrow is a device planted in the ground to deter birds and other animals from eating and disturbing seeds and other crops. Its name literally means 'to scare away crows' A scarecrow usually looks like a person and is made by using straw to stuff out old clothes. The scarecrow will not be totally stiff and should move in the wind to make it look like it is alive.

Challenge: Design and make your own scarecrow. **(Adult help may be required!)**

Plan It: What old clothes do you have? If you don't have straw – what else could you use to stuff it with? How will you plant it into the ground but still allow it to move in the wind?

Build It: Draw a picture of what you think your scarecrow might look like wearing the clothes you have found. Where will you plant it – do you have your own garden? It could protect any fruit or veg you have planted or could stand watch over any flowers. Will it have arms or legs or just a body and long shirt / coat?

Test It: place the scarecrow in your selected area of ground and watch. Does it stay upright? Can it move its arms and legs freely, does it look like a person from a distance? Is it keeping the birds away?

Reflect: From your observations, is there anything you could improve? For example, do you need to add or take away any stuffing from limbs (arms and or legs) to help them move more easily? Would different clothes sway more in the breeze?
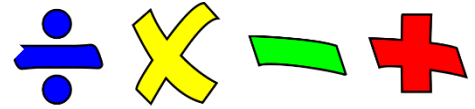
Improve It: Use any ideas from your reflection to improve your scarecrow then retrace the steps above – testing and reflecting.

Note: Ask permission first before using any clothes!

Images from www.clipart-ibrary.com

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Maths & Numeracy Challenge

Milk It

Look at the numbers in Number Bank 1 below, which shows the milk produced by five cows on a dairy farm. Using calculators and/or pencil and paper, work out the answers to the following questions:

Number Bank 1

Cow Number	AM Milk (litres)	PM Milk (litres)	Total (litres)
674	15.98	12.92	
20	14.92		28.3
648		12.01	26.7
79	20.53	14.13	
656		15.43	39.15

1. Can you fill in the missing numbers in the table?
2. What is the total amount of milk produced by the five cows that day?
3. Can you work out the average amount produced that day?
4. Can you work out the average for morning and evening milking?
5. Could you pick out one cow and fill a container with water to represent the amount of milk she gave at one time (either morning or evening)?
6. Why do you think all cows don't give the same amount of milk?
7. Choose one cow – work out how much milk that cow will produce in a week?

Number Bank 2
A cow is fed **3.5kg** of concentrates while being milked **each day.**

A newly calved cow (one that has just had a calf) is fed **5.5kg** of concentrates. Over the next fourteen days, this is gradually increased to **14kg.**

This newly calved cow will be fed **14kg** of concentrates for **up to 28 days**. After that, the amount of food may be adjusted according to the amount of milk produced by the cow.

If the cow is producing **more than 6 litres** of milk while eating only silage, it will also be fed **0.4kg** of concentrates for **each litre after six** that it produces

Now look at Number Bank 2 and answer following questions:

1. When a cow is being milked, how much is it fed per week?
2. If a cow that is being fed silage is producing 16 litres of milk per day, what amount of concentrates would it receive?

Activity from: https://ccea.org.uk/
Images from www.clipart-library.com

Literacy Challenge

Livestock Farming

Photo from the www.nfuonline.com via TES

Task1: Read the information on the poster. Now write 6 questions of your own based on what you have just learned.

Share the poster with an adult or older brother or sister at home then see if they can answer your questions.

Task 2: Choose one aspect of the poster e.g., Livestock Products, Red Tractor, Sheep Farming etc., and research more about it. Write down notes and then use these to write a brief report. Share your report with an adult.

Health & Wellbeing Challenge

Where Does My Food Come From?

Do you know where your food comes from, and I don't mean Tesco or Aldi or any other shop? Where do the shops get their food from before they can sell it on to customers?

Lots of our foods come from farms - eggs, milk, meat, even some fish. We get vegetables and fruit from farms as well as crops such as wheat which is ground down to make flour which is then used to make loads of different things including bread, pastry, cakes, biscuits etc.

Task 1: Think about what your favourite meal is and write it down. – try to list all the ingredients that are used to make it. You might know these already or you might have to ask an adult at home to help you find out. You could look at a recipe in a recipe book, or you could use the internet.

Task 2: Find out where these ingredients come from.

Here is an example: **Ham and onion pizza** contains: ham (pork from a pig); onion (onion plant); pizza base (flour from wheat); tomato topping (tomato plant), cheese (dairy from a cow).
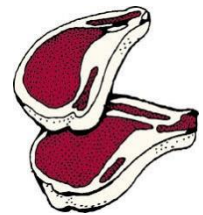
Task 3: Choose one of the ingredients from your favourite meal. Research its journey from the farm to your plate. How was it transported? What processes did it have to undertake before it could be used in the meal?

Images from www.clipart-library.com

Social Studies Challenge

Types of Farming

There are three main types of farming in the UK. **Arable farming**, which means growing crops like vegetables and wheat. **Pastoral farming**, which means raising animals for things like meat, wool and dairy products. And **Mixed farming**, which means growing crops and keeping animals.

Farming is big industry in our part of the world. Have a look at some of the tasks that arable farming involves.

Click here to find out more:
https://www.bbc.co.uk/teach/class-clips-video/ks2-geography-food-and-farming/z9yjjsg#:~:text=There%20are%20three%20main%20types,growing%20crops%20and%20keeping%20animal

1. **Ploughing** is when you dig the soil
making it loose. This brings the nutrients (all the good things in soil) to the top and pushes the bad things (like weeds and seeds and old soil) to the bottom. Loosening the soil also means that water can get to the seeds instead of running off the top.
2. **Sowing** is when the farmers put seeds in the soil they have ploughed. The seeds are then covered with soil and watered. The seeds are left to grow. Seeds need three things to help them grow: water, soil, sunlight.
3. Plants have matured when they are fully grown and ready to eat. When the crop has matured it gets collected from the fields and this is called **harvesting**.

Task1: Farming has changed a lot over the last century. Sort these statements and pictures into columns depending upon whether they refer to **old style farming** or **new style farming**. Can you identify what is happening in each picture?
Task 2: Try to think of an advantage and disadvantage of each task mentioned above when using new methods compared to old methods of farming. For example, using lots of mechanical equipment to sow seeds uses fuel which can cause pollution.

People and animals are used to do a lot of the work.	These farms have a small yield (this means they produce less crops).
Machines are used to do the ploughing, planting and harvesting.	Use a lot of technology, so the risk of their crop failing is not as high.
These farms have a big yield (this means they produce a lot of crops).	Use little technology so a lot more of their plants die.
Very large Farms.	Mostly small sized farms.

Activity and images from TES

Expressive Arts Challenge
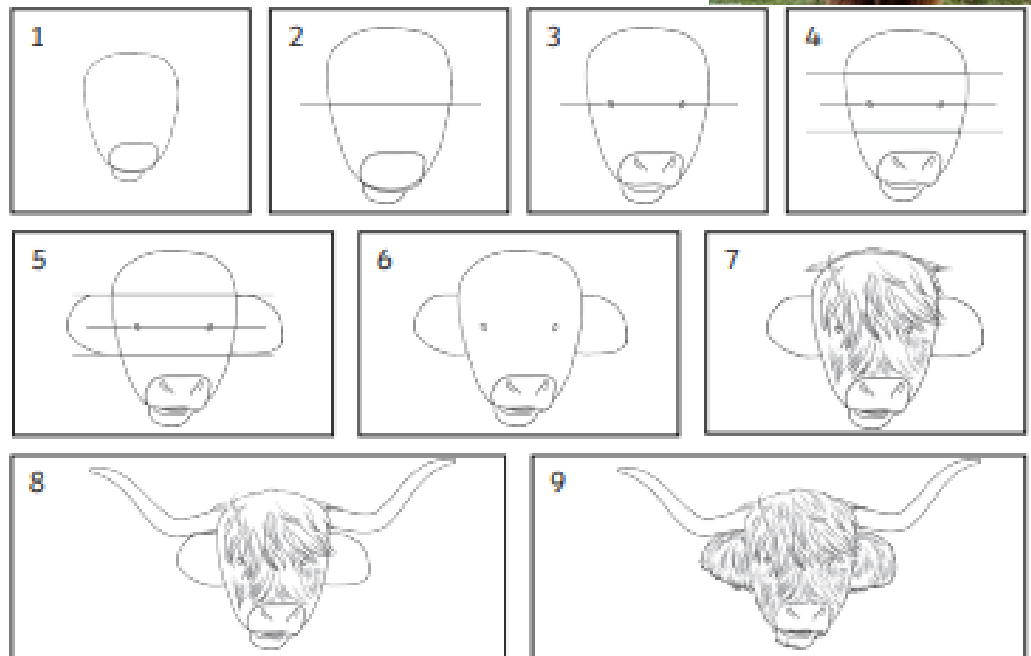
Draw a Highland Cow

Highland cows were originally farmed in the Scottish Highlands and the Outer Hebridean islands of Scotland. They have long horns and a long shaggy coat. There are not as many highland cows kept by cattle farmers in our region but there are some – have you ever seen one?

Your Task:
Draw a highland cow picture. You can choose to do:

a. A life – like drawing in which case you might want to refer to the step-by-step guide here. ➡️

OR

b. A Steven Brown inspired *Highland coo* in which case you might find it helpful to click on the link to watch some video instructions: **https://www.youtube.com/watch?v=3St2-x9WHzs**

(Steven Brown is a Scottish artist famous for his abstract style pictures of highland cows.)

Whichever style you choose you will need: paper, a pencil, coloured pens or pencils. You might also choose to create a more 3D style by adding, different colours of wool, string, pipe cleaners etc. (Optional)

Extension: Split your paper into quarters. Create a slightly different Steven Brown style coo in each one or try to make all the coos look the same but add a different accessory to each. (As described in the video)

Images from Twinkl   Photo from www.clipart-library.com