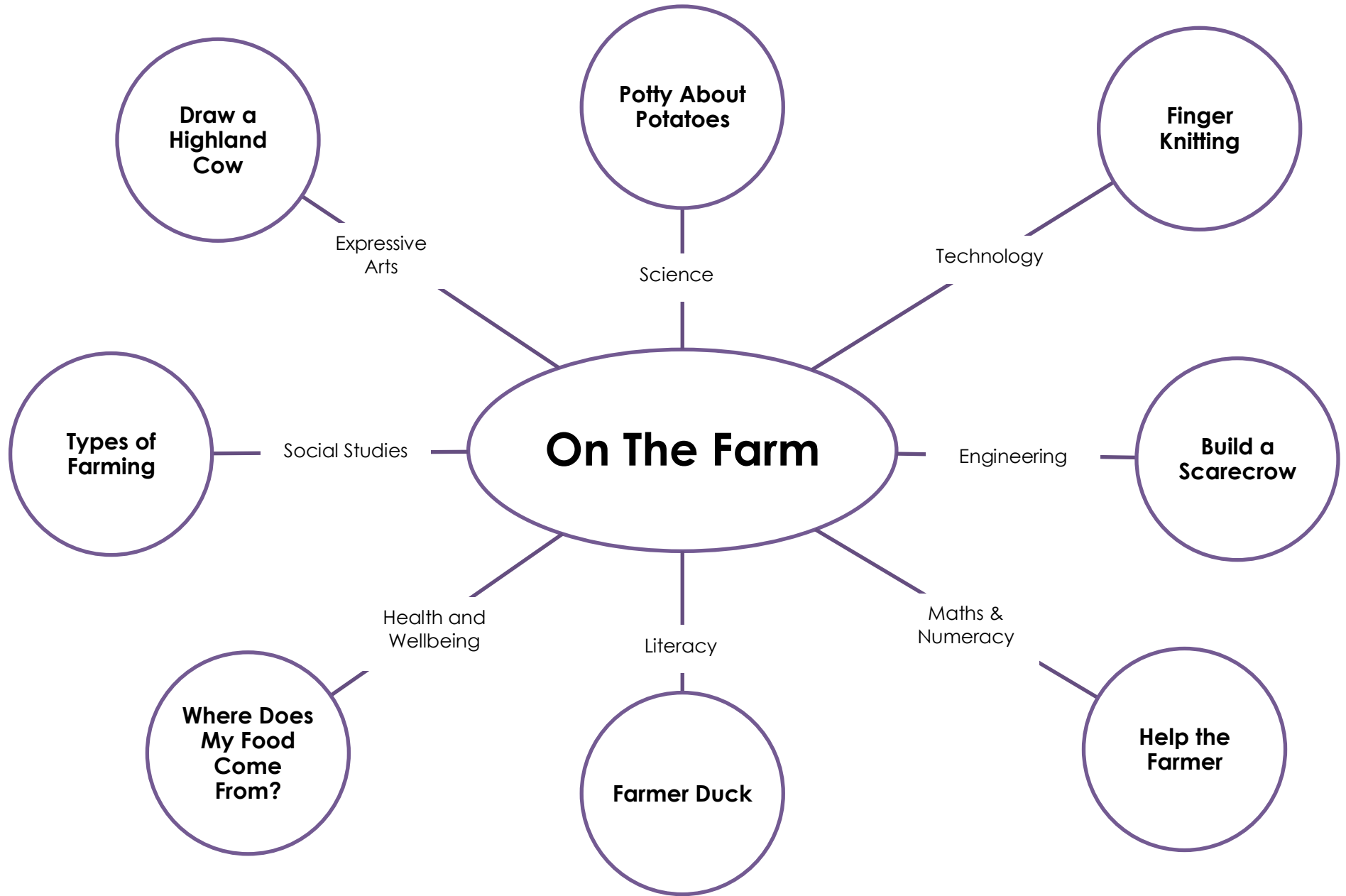


Learning from Home



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 can't see root development when we plant things into the ground, so this activity will hopefully allow you to see roots growing and leaves developing from a single potato.

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

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

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

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

Technology Challenge

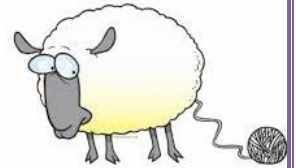


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Finger Knitting

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 finger. 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.



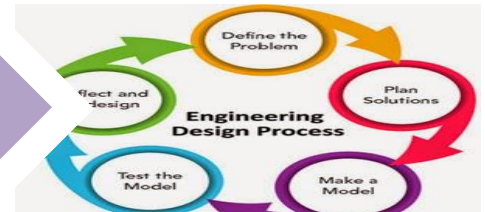
How to tie it off at the end:

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



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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: Is there anything you could improve? Would different clothes sway more in the breeze? Can you add any features to the face?

Improve It: Use any ideas from your reflection to improve your scarecrow.

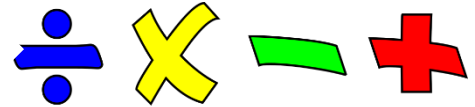
Note: **Ask permission first before using any clothes!**



To watch a scarecrow being built, click here: https://www.youtube.com/watch?v=cWqD_nukA0k

Images from www.clipart-ibrary.com

Maths & Numeracy Challenge

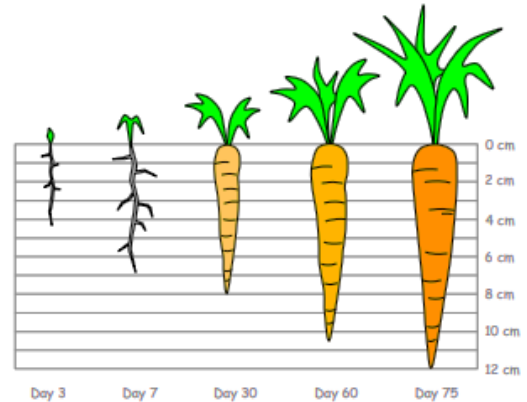


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Help the Farmer

The farmer is always busy, and he uses maths every day to help run his farm. Help the farmer by completing the following questions:

- The farmer has decided to plant carrots. The growth rate of a typical carrot is shown here
 - How long is the carrot after 1 month?
 - After 60 days, the carrot is sweet and ready to eat. State the difference in the length of the carrot if the farmer waits to harvest it until day 75

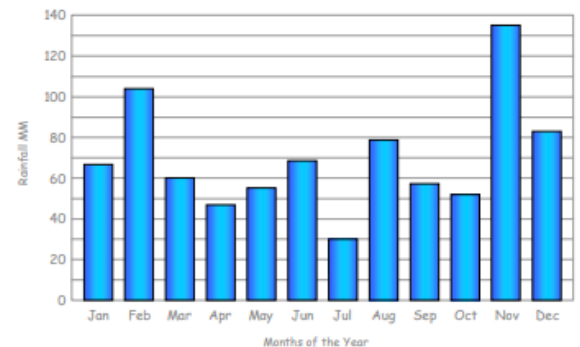


- The second farmer wants to spread fertiliser onto a field. She has attached a spreader to the back of the tractor which can hold up to 500kg of fertiliser granules. The bags of fertiliser she is using weighs 10kg. Calculate the maximum number of bags the farmer can put into the spreader.



- A bag of fertiliser weighing 100kg costs £30. Calculate the cost for a bag of fertiliser weighing
 - 10kg
 - 50kg
 - 70kg

- The bar chart below shows the average monthly rainfall in mm.
 - State the average rainfall for the driest and wettest months.
 - The farmer wishes to spread fertiliser during the springtime but also avoid heavy rainfall which could wash the granules out of the soil. Which month may be the best suited to spreading the fertiliser?



- Look at this picture
 - What fraction of the gate is hidden by the safety sign?
 - The farmer owns one cow which can be milked every day to provide 30 litres of milk. Calculate the amount of money the farmer could earn in one day if the milk was sold at the price of 30 pence per litre.

Activity and images from www.amigoeducation.com via TES

Literacy Challenge



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Farmer Duck

Farmer Duck is a story written by Martin Waddell and illustrated by Helen Oxenbury. Farmer Duck is no ordinary duck!



Click here to find out more:

https://www.youtube.com/watch?v=9Pxx_csv40Q

Now pretend that you are Farmer Duck. Think about and answer the questions below. Remember to write in proper sentences. (They must make sense and start with a capital letter and end with a full stop.) It can help to say your sentence out loud before you write it.

1. What is your full name?
2. How old are you?
3. Where do you live?
4. Who are your friends?
5. What family do you have?
6. Why do you work so hard?
7. What is your favourite food?
8. Tell me about the farmer?
9. How do you feel now that the farmer has left the farm?



Can you think of a question you would like to ask the farmer?

Activity idea from www.teachit.co.uk

Illustrations from www.hamiltontrust.co.uk



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).



Images from www.clipart-library.com

Social Studies Challenge



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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/z9yijsg#:~:text=There%20are%20three%20main%20types,growing%20crops%20and%20keeping%20animals.>

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**.

Task: Farming has changed a lot over the last century. Sort these statements and pictures depending upon whether they refer to old style farming or new style farming. Can you identify what is happening in each picture?

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



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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. →

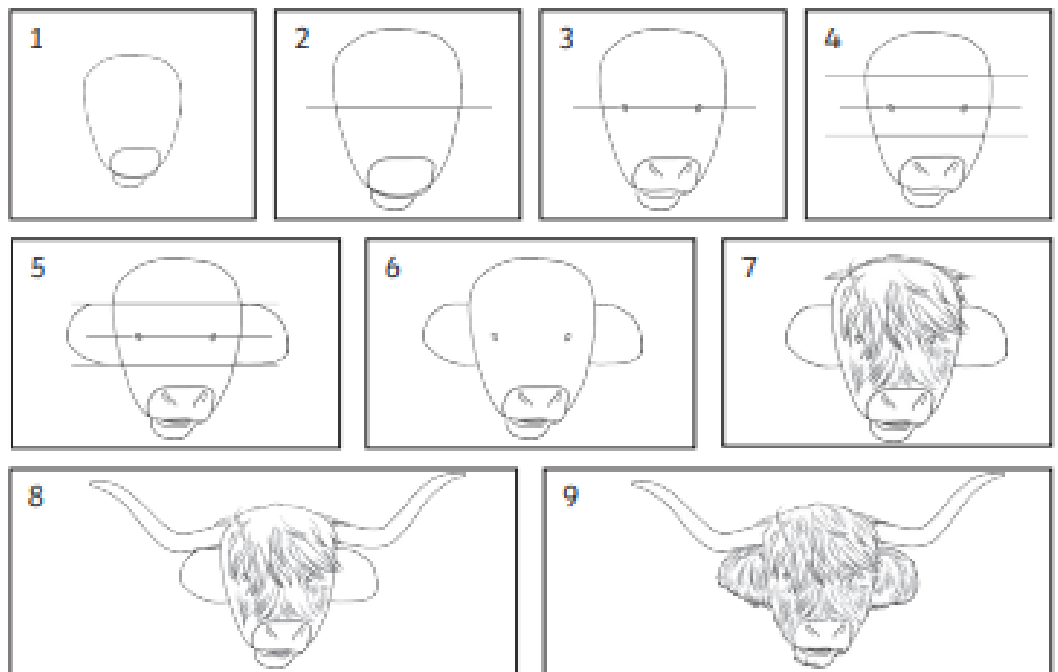
OR

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)



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