



Why do cows drink milk?

Dairy workshop: Children need to understand that the milk they drink comes from cows. It is important that they know that cows eat food (grass and forage) and drink water which they turn into milk for their calves to drink.

What goes in? water and grass (forage)

What comes out? Urine, faeces and milk!

Why do the cows produce milk? For their calves.....

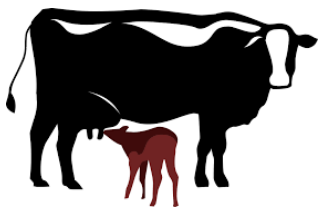
The lesson plan also provides opportunities for pupils to begin to understand that ‘mammals’ produce milk for their young, and the similarities/differences between humans and other mammals. There is an opportunity for the children to explore the field to fork story and to produce their own dairy product.

Props:

- ❖ A grassy area which can be the 'field'
- ❖ A bucket with a picture of a cow on it, this is to represent the cow's tummy.
- ❖ Clear jug of water
- ❖ Clear jug of creamy milk which has been allowed to settle so that the differences can be seen
- ❖ Bottles containing skimmed, semi-skimmed and whole milk
- ❖ Dairy produce bag
 - Custard
 - Cream
 - Milkshake
 - Cheese
 - Yoghurt
 - Butter
- ❖ Laminated pictures
 - Dairy cow
 - Cow pat
 - Cow urinating
 - Calf drinking milk from udders
 - Cows being milked (clusters and parlour)
 - Bulk tank
 - Milk lorry
 - Processing plant
 - Buffalo
 - Sheep
 - Camel
 - Goat
 - Butter churn
- ❖ Small containers such as urine sample pots, 1 per 5 children
- ❖ Warm double cream to half fill each container
- ❖ Crackers for butter tasting



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Lesson plan:

1. It is important to initially gather from the children an understanding of how much they know about cows. So, some suitable warm up questions would be.....
 - a. Who knows what a cow looks like?
 - b. What colour are cows?
 - c. What sound do cows make?
 - d. What is a Mummy Cow called, a Daddy Cow and a baby cow?
 - e. A good question to finish with is, how big do you think a cow is, with the children using their hands to illustrate, as many children believe them to be the size of a dog not a grown man. Use the photo of a cow as a prompt when necessary.

2. What do cows eat?

Ask the children to guess what a cow eats, and then walk with them outside onto the grass and ask them to pretend to be cows. Explain that cows only have teeth on their bottom jaw and ask the children to cover their top teeth with their gums to pretend to be a cow. Then explain that cows don't bite the grass they pull it with their tongues just like a giraffe pulls leaves off a tree. Children really enjoy using their arms as cow tongues and pretending to wrap their arms/tongues around grass then pulling it up.

3. Why does a cow 'chew the cud'?

Whilst still outside on the grassy area, ask the children if they have ever seen a cow lying on the grass and pretending to chew, even when they don't look like they have anything in their mouth? Explain to the children that this is called 'chewing the cud' and ask them whether they think they would like to eat their dinner whilst lying down?

Ask the children to pretend to be cows again, covering their top teeth with their tongues and using their very long arms/tongues to pull up the grass. Then explain to the children that grass is very good for cows, but they find it difficult to get all of the goodness from it when they eat it. So they have to eat it twice.....

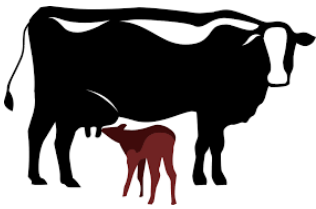
How can the cow eat the same piece of grass twice?

As the children pretend to be cows pulling at the grass, ask them to pretend to do a dramatic swallow of the grass, rub their tummies and say 'yum yum', then pretend to throw up, as the grass travels back into their mouths for them to chew it again.....

The children love the role play and it works well as a way of teaching them about the cow's digestive system, so that they can then compare it to their own.

Just before the children come away from their 'field', ask them to collect some grass and put it in your 'tummy bucket'





4. What do cows drink?

It is possible that children believe cows drink milk, and this is a good opportunity to introduce the idea that only calves drink milk, and where does that milk come from?

Ultimately the answer that we want is water, and so some water needs to be added to the cow's tummy. Children are often fascinated to learn that some cows drink a whole bath full of water every day....

5. What happens to all of the grass and the water?

Talk to the children about the cow's tummy, that they will often eat the grass at least once to get the goodness from it and that if they kept just eating and drinking, they could pop. What happens to all of the food and drink that they have during the day, do they pop?

Most children are very happy to link the food and water to pooing and weeing, and it can be useful to use the photos at this stage to ensure they stay focused on cows. The photo of the cow pat with the toadstool is useful as it introduces the concept that the cow's faeces is useful on a farm as it feeds plants and helps them to grow.

6. What about if the cow has a calf, what will the grass and water be turned into?

Do the children remember what they drank as a baby, and where that milk came from? Use the photo of the calf drinking milk as a prompt to help the children understand that the calf needs to get milk from its mother and that it comes from the udders. Ask the children to stir the tummy bucket really hard and recap on what the grass/water will become if the cow does not have a calf, then when it does have a calf. Having a jug of creamy milk as a prop to magically produce at this stage can help the children make the link. This is also a good opportunity to talk about other animals that get milk from their mothers when they are small, such as dogs, cats, rabbits, etc. animals that they will have experience of. But do be careful to refer back to cows and calves regularly.

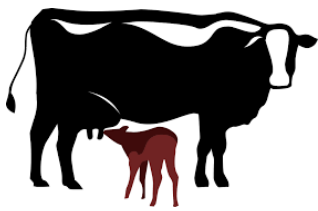
7. How do we get the milk from the cow?

Explain that the cow has been bred to produce lots of milk, and now she makes too much for her calf, so we use the equipment at the milking parlour to collect her milk. Using the picture of the parlour as a prompt, explain that the machinery can pretend to be the calf sucking on each of her udders and so the cow happily gives her milk twice a day. The children can be asked to think about how the calf will suck the cows udders to get the milk, and can use their thumbs, and pretend to be calves sucking on their mothers udders to get the milk. They can then do the same action and be the 'clusters' collecting the milk for the farmer. Again there is a photo to illustrate the clusters collecting the milk.

8. What happens next?

Using the photos, explain that the milk from all of the cows in the herd is collected twice a day, and stored in a 'bulk tank' at the farm, and kept very cold, just like their fridges at home, so that it stays nice and fresh. It is then collected every 2 days and taken to a factory to be cleaned and bottled, ready to be taken to the shops in another big lorry. There are photos to help support the children's understanding of this, and it is important for them to appreciate the large amount of milk being transported. It is very likely that the milk tanker shown is transporting enough milk for every child and their family in the school to have a big bowl of cereal for breakfast for a whole week, and that is just from one farm.





9. Who likes drinking milk?

The children may well go to the supermarkets and see milk on the shelves, with lots of different coloured bottle lids. Show the children bottles of milk and ask them to explain the differences between the bottles, it may well be that they know the differences and the labels given but it is unlikely. Chat with the children about the milk that they drink at home, and what it is used for.

Can they think of any other uses of milk, any other 'dairy products' other than just milk for their cereal?

Using a bag of dairy products, ask the children to think of examples and then hand them the product that they thought of. It is a great opportunity to chat about other products, such as chocolate, that contain some milk, but aren't dairy products as they contain lots more ingredients that aren't milk.

10. Is it only cow's milk that we can drink?

It can also be useful to talk to the children about other animals that produce milk for their babies, animals known as 'mammals'. Comparing the cows to humans and other animals helps the children learn to classify and identify the similarities/differences between different species. But, do they know, what other animals produce milk which we drink/eat? Use the prompt cards to help the children guess what other animals produce milk which we can safely consume. One approach is to give the children clues, such as big/small, sounds they make, where they live, etc....

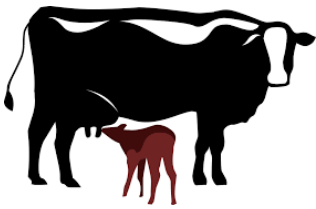
11. Can we make a dairy product today?

Recap with the children what a dairy product is and ask them whether they have ever made a dairy product at home. This is a good opportunity to check their understanding of what a dairy product is. Getting the children into teams of about 4, hand each team a small plastic container half full of warm double cream. Urine sample pots are the perfect size for small hands to hold. Explain to the children, using the jug of creamy milk from earlier, that the cream has been collected and allowed to get warm, which means that it is ready to make butter. Each child needs to shake the container 10 times and then pass it to their team mate, until it starts to rattle. Checking on their progress regularly the butter will separate from the butter milk and form a solid ball, which will then rattle as it is shaken.

It is possible for the children to taste a little of the butter they have made using a cracker to scrap some off the top, assuming that there are no allergies and the equipment used has been carefully cleaned. As the children have been collecting grass it is advisable that they wash their hands first.

After they have tasted their butter, they can consider how butter is made using a traditional butter churn, using the picture as a prompt and being asked to pretend that they are turning the handle. They might like to consider that several hundred years ago they may well have been doing that all day rather than being at school...

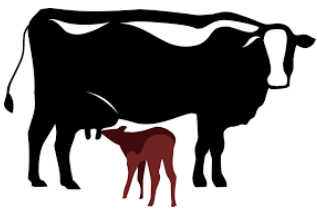


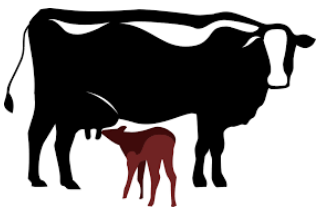


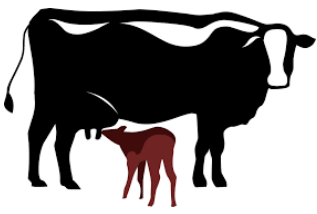
12. At the end of the session, the following questions could be used to assess what the children have learnt....

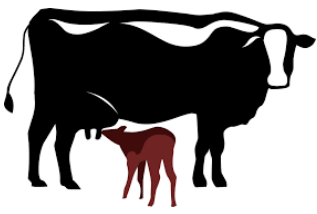
- a. What is a baby cow called?
- b. What does a cow eat and drink?
- c. How does the cow eat its grass?
- d. Why does a cow produce milk?
- e. How does the calf drink the milk?
- f. What machinery do we use to get the milk from the cow?
- g. How does the milk get from the farm to the shops?
- h. Do we just drink milk?
- i. Do we just drink milk from cows, or are there other animals that we might have on our farm to give us milk?
- j. Why do farmers have cows on their farms?

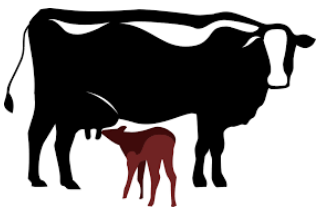


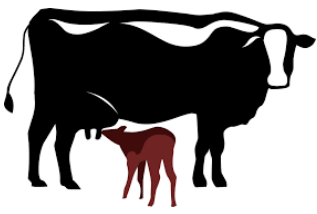


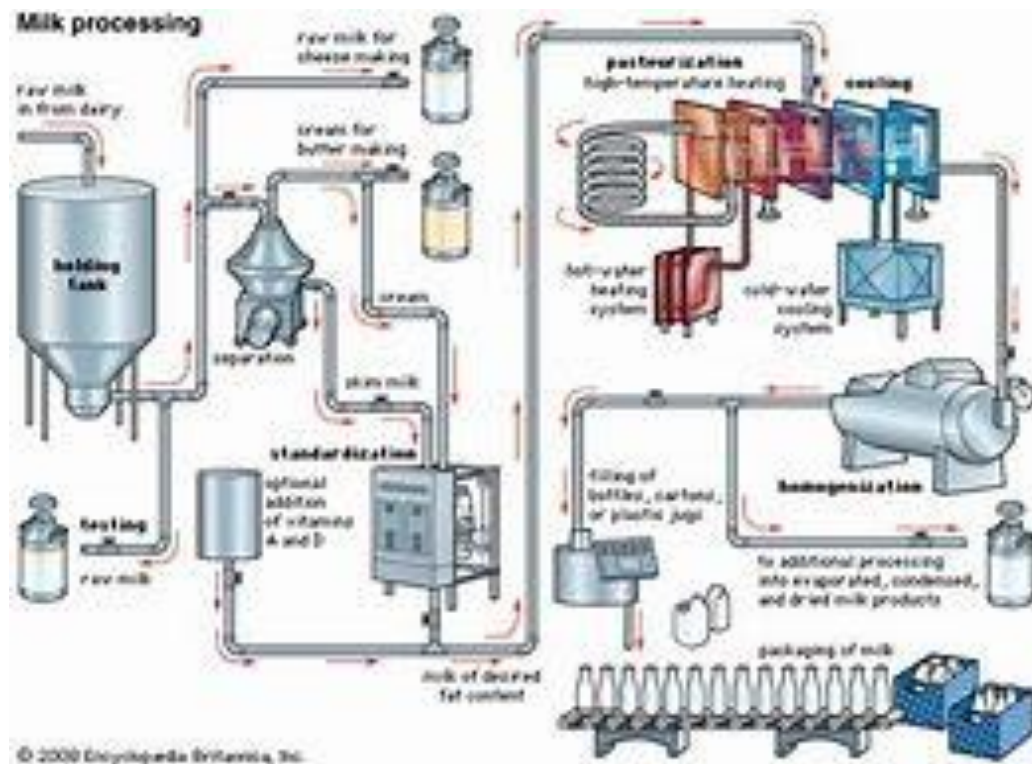
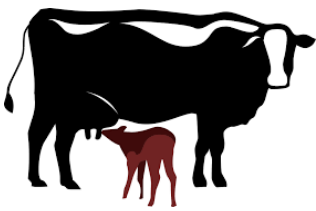


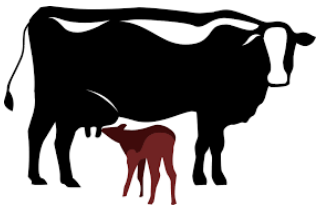






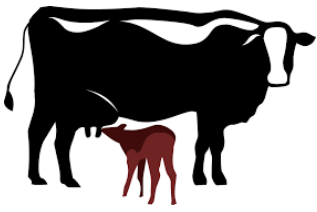






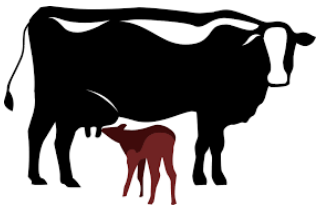
Buffalo





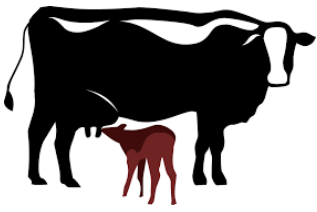
Camel





Sheep





Goat



