

Lesson 1: Down on the farm.

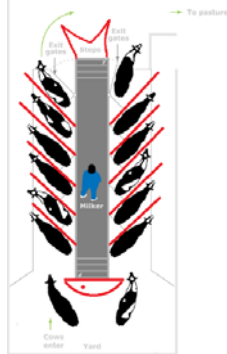
Starter	<p>Depending on your community and your students, your class may have a strong background in agriculture or they may have little knowledge about dairy farming. It is worth doing this test to gain an understanding of student experience.</p> <p>Search Kahoots either by using the title “Dairy Quick Quiz” or by searching creator “JerseyGirl89”.</p>
Activity	<p>Down on the farm collage. Hand out the following documents to the students; L1_Down on the Farm Instructions, L1_Farm Plan and L1_Cutouts.</p> <ol style="list-style-type: none"> 1. Students cut out and identify farm items from the ‘Down on the Farm’ reading. They then place them in an appropriate space with a label, based on the farm description. 2. Students then take a series of photos moving the cows to the milking shed from the paddock. 3. A rotary shed design is used in the collage. Get students to look up the design of a herringbone shed. 4. Every word that is in bold is a term that students need to create their own definition to. Get them to create their own definitions based on the reading and their understanding.
Video	<p>Automatic milking machines</p> <p>https://www.youtube.com/watch?v=XIRbxfOZMNI</p> <p>Teacher notes: Udder conformation (shape) becomes more important. You can get some very oddly shaped udders so this is where breeding for udder shape takes a high priority. With this system cows can choose when they get milked. The amount that cows produce can vary from individual and over the season. One cow on Lincoln University Research Dairy Farm produces 18L/ day and another produces 31L/ day. This is a lot of milk to carry so cows enjoy being milked, and a treat during milking also makes it a positive experience. It also shows how intelligent they are because they can learn systems.</p>
Close	<p>Students come up with an exit sentence that uses 4 farm terms.</p>

Just like humans it is important that cows get the right nutrition and nutrients. Different grass species and feed have different qualities and it must be carefully managed to ensure optimum health and production. If students are interested in nutrition or animal welfare then this could be a potential career for them. Grass must also be quite long as cows use their tongues to tear off the grass before eating it, compared to sheep who prefer short grass because they use their front teeth to nibble grass.

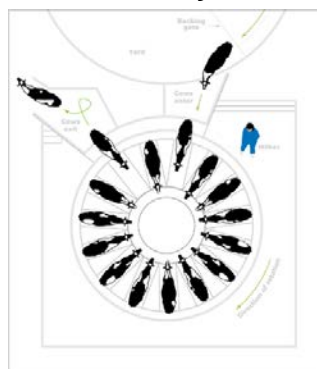
The two most common shed types in New Zealand are the herringbone and the rotary. Areas that have a history of milking (Waikato) tend to have smaller herds (eg. 600 cows) and more herringbone sheds. Areas that have been recently developed like Canterbury and the West Coast tend to have larger herds (eg. 1500 cows) and more rotary sheds.

The herringbone is called that because when viewed from above it resembled a fish skeleton (refer to pic 1). This design meant that more cows could be milked at once by fewer people, and the cows walk in and out of the parlour by themselves. However, cows 'milk out' at different times so if one cow in the row is slower then all the cows must wait until that cow has finished milking before the next row can come in. Generally you are putting the cups (cupping) one side, while the other is milking. Ideally once you have finished cupping you can start taking the cups off the other row.

Pic 1: Herringbone



Pic 2: Rotary



Rotary sheds tend to be bigger platforms (between 50 - 100 bales) and can hold more cows so are preferred for the larger farming operations. The advantage is that if a cow has not milked out after a rotation then she can do another rotation and not hold up the rest of the cows. You can also have two people putting cups on at the start and either speed up or slow down the rotation speed.

Technology has also advanced in sheds. Cows numbers can be scanned, the amount of milk she produces is known and can be tracked which can be particularly helpful in identifying if there is a problem like mastitis (an udder infection). Once the flow of milk from the cups drops below a certain point then the machine knows she is milked out and automatically detaches. This is better than the previous method of using your eyes when there is a wide range of udder conformation. After cows have been milked iodine is sprayed on their teats to stop bacteria getting in and causing problems. This has also been automated in most sheds.