LINCOLN UNIVERSITY
TE WHARE WĀNAKA O AORAKI

Down on the Farm

Task 1:

On the farm there is specific farm terminology and items that help farms function. Read through the description below to identify the farm items and where to place them. Each farm item in **bold** should be on labelled on the 'farm plan'. Some farm items are provided and others you will need to draw in. Dotted lines represent farm gates.

For cows to produce milk they must get pregnant (in-calf) every year. Cows are usually milked from spring through to the start of autumn and have a break over winter where they are busy growing their calf. One of the most important items on the farm is the cow **troughs**. When cows are milking they will drink an average of 70L/day/cow but over winter it drops to 35L/day/cow. Place the **trough** at the end of each paddock closest to the gate.

Paddocks are often split up into sections so grass/feed is allocated out over a couple of days this is called break feeding. Draw lines, to show where the temporary fences will be placed, to split one of the paddocks into three parts (each section is called a **break**). The section closest to gate and with the trough is usually the first area that is feed to the cows. When the next section is opened up for the cows and they will still be able to access the trough through the area they have already grazed. **Label the breaks from 1-3** with 1 being the first break feed to cows.

Draw in the **riparian planting** that has been grown next to the river to helps absorb nutrients and sediment before they enter the stream. On the north-west side of the centre paddock there is a **shelter belt** of trees that provides stock shelter from the sun and wind, and can be a potential feed source.

The **milk vat** is where milk is held and kept cold. It needs to be close to the milking machinery and the **turning circle** so the **milk tanker** can collect the milk. Place the **milk tanker** in the **turning circle** so it ready to collect milk.

Place the **rotary dairy shed** in the gap to the right of the turning circle and so the 'office' is to the east and the "milking machinery" is to the west. It is called a rotary as the cows go around in a circle. If the cow hasn't milked out then she can go around again. The cows should be entering through the area where the **'backing gate'** is and have a way out through the yards. The **backing gate** moves up the yard encouraging cows to move forward towards the dairy shed. The yard area directly above the turning circle is a **pen** where cows can be held when they need to be seen to by a vet or by the farmer.

Cows poop and urinate which is called effluent. After milking there will be effluent in the yards and shed that needs to be washed down. This effluent is washed down and is stored in the **effluent ponds** located to right of the dairy shed. When weather conditions are right the effluent can be sprayed onto the paddocks with the **effluent sprayer** and used as fertiliser. Place the **effluent sprayer** in one of the south-east paddocks. Draw a pipe that connects an **effluent pond** to the **pump house** and then to the **effluent sprayer**.

Before going to be milked, cows may go onto a concrete platform called a **feed-pad**. The cows can be feed extra food or supplements. The **tractor** can drive down the middle and distribute food along both sides which the cows then access.

Often other tools will be used to help distribute food like a **silage wagon**. **Silage** is grass that has been cut in spring and wrapped up tightly so there is no air. This allows the grass to ferment and be stored for a long time. **Silage bales** are round and are located in the **shed** that should be placed next to the **feed-pad.** **Hay** is another type of feed that is can be in rectangular or round bales. It is also stored in the shed to keep it dry and free from mould.

Hay is not as nutritious as **silage** but is useful for adding fibre to cow's diets. Place the **tractor** and **silage wagon** along the machinery path in the **feed-pad** and draw some dark green squiggles on either side to represent the silage that has been feed out. Silage can sometimes be stored in a **silage pit** where a big plastic sheet is put on top with tires to hold it down. This way you can choose the amount you want to feed out and don't need to worry about bailing it. Place the **silage pit** next to the entrance and next to the turning circle on the west side.

The shed with the dark poles is used for farm machinery or other farms tools. This is located in the south-west corner of the turning circle next to the silage pit. This allows for easy movement of machinery in the yards where goods and materials might need to be unpacked. Outline the yard space in highlighter and the edge of the turning circle to represent where there is frequent movement of machinery/traffic. The pathways that connects all the paddocks to the dairy shed are called **raceways** and have a surface like limestone or clay which is 'soft' so doesn't hurt cow's feet.

One shed is located in-between the two south-east paddocks so it can be used for **calf rearing**, make sure there is room in front of the shed to access the shed and the two paddocks. Sheds are used to house calves which provides them with shelter and a soft bedding. It is usually close to the dairy shed so it is easy to keep an eye on them and feed them milk that is not suitable for commercial consumption. These paddocks are slightly smaller which makes them good for small calves.

Task 2:
Using the two cows to take 3 pictures of the cow's journey to and from the dairy shed showing the following...

1- Cows are in the north-east paddock.
2- Draw in gates to make sure the cows follow the path to the feed pads. One cow is taking her time and is still in the raceway, the other has already made it to the feed-pad.
3- Show one of the cows in the dairy yard getting ready to be milked and another exiting the yard, having been milked.

Task 3:
There are two common types of dairy sheds used. Use the following website to drawn a "herringbone" shed.
https://teara.govt.nz/en/diagram/18504/using-a-herringbone-dairy-shed

Task 4:
Write a definition list for the following terms.

Trough, in-calf, riparian planting, rotary dairy shed, herringbone dairy shed, backing gate, milked out, backing gate, pen, milk vat, milk tanker, effluent, effluent ponds, effluent sprayer, feed-pad, tractor, silage wagon, silage, calf, raceways.

Task 5:
Name your farm and write it at the top of your farm plan.