FRESH STORY | CHEESE

INTERMEDIATE

SAY CHEESE!

It has been said that cheese was probably invented by accident. Thousands of years ago, when milk was transported in animal stomachs, the rennet in the stomachs combined with the milk would encourage curdling of the milk, making curds. These curds were eaten and enjoyed and then replication occurred.

What a happy accident!

DIFFERENT TYPES OF CHEESE

FRESH CHEESES: These can be made at home and can be eaten right away after making them.

CREAM CHEESE - COTTAGE CHEESE - RICOTTA - PANEER - HALLOUMI - MOZZARELLA

AGED CHEESES: Take longer to prepare, must sit and age anywhere from 2 weeks to 2 years and are made by skilled cheesemakers.

HOW IT'S MADE

1. **ACIDIFICATION**
Acidifying the milk is the first step in cheesemaking. Acidification occurs by adding lemon juice or vinegar to milk, or by culturing milk with lactic acid producing bacteria.

2. **COAGULATION**
Then the acidified milk is coagulated. Coagulation, or forming the curd, requires an enzyme such as rennet, or it can be done by heating the milk.

3. **CUT & DRAIN CURDS**
The third step is to cut and drain the curds. The curds may also be kneaded, pressed, cooked, or salted; it just depends on the type of cheese being made.

4. **AGING**
Then the curds are aged or ripened for anywhere from 2 weeks to 2 years. This step is omitted for fresh cheese.

TECHNOLOGY ON THE DAIRY FARM

BC Dairy farms today look different than they did 50 years ago. Most people don't associate dairy farming with advanced technology, but currently BC Dairy farmers are investing time and money into software, sensors, cameras, and even robots. These technologies help farmers optimize milk production, sustainability on the farm, and cow well-being.

COW COLLARS

As caretakers of their cows, farmers are using data collected by cow collars to assess and have better insight into their cows' daily lives. These cow collars are like a pedometer and activity monitoring device.

ROBOTIC MILKING

Milking can now be done 24/7 by a voluntary robotic milking machine. The cows can decide when they want to be milked!

FEED MIXING WAGONS

Many Canadian farms will use a feed wagon where they combine the different types of feeds to make a balanced diet, also known as a total mixed ration (TMR). The wagon has a set of blades like a giant blender that mixes the feed together, so the cows have all the nutrients they need in every mouthful of food they eat.

BEDDING

Cows need a comfortable place to lay down, and Canadian dairy farms use different types of bedding to keep their cows comfy in a sustainable way. Some farms use sand for their cows - it is like they are always at the beach! When the sand is dirty it is run through a series of specialty machines to be separated from the manure, washed, and dried to be used again.

FRESH STORY | CHEESE

TEACHER ACTIVITIES

BC DAIRY FARM TECHNOLOGY VIDEO

CURRICULUM CONNECTIONS: ENGLISH LANGUAGE ASRT 4-7: Questioning what we view contributes to our ability to be educated and engaged citizens. CAREER EDUCATION 6 & 7: technology in learning and working.

View the BC Dairy Farms Technology and Jobs Video and answer the questions before/while/after viewing:

1. Pre-Viewing: What is one questions I have about dairy farming?

2. View the BC Dairy Farms Technology and Jobs Video, and stop and answer the following questions:

- One important task on the dairy farm
- Two technologies that have changed over time
- Three important jobs on the dairy farm

3. Post viewing: One question I still have about dairy farming

FOOD STUDIES ACTIVITY: MAKING PANEER (BC DAIRY)

CURRICULUM CONNECTIONS: FOOD STUDIES 6 & 7: basic food handling and simple preparation techniques and equipment.

Ingredients and Equipment:

- 645 mL BC milk
- 15 mL lemon juice or vinegar
- Portable stove
- Heavy saucepan
- Measuring cups and spoon
- Mixing spoon
- Cheesecloth
- Sieve
- Mixing bowl

Procedure:

1. Wash hands.

2. Bring milk to a boil in a heavy saucepan, stirring from time to time.

3. As milk starts to rise in the pot, reduce heat and add lemon juice or vinegar. Stir gently, curds should start to form within 10 seconds.

4. Remove from heat and let stand for about 5 minutes.

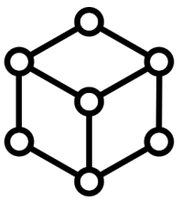
5. Line a sieve with muslin or several layers of cheesecloth. Strain through the cheesecloth and rinse with cold water.

6. Hang over a large bowl for about 1 hour to drain some more liquid. Cheese will be crumbly at this stage.

7. Wrap the cheese in muslin/ cheese cloth and press it for several hours with a heavy weight such as a pot filled with water. If you're pressing the cheese for longer than two hours, keep it in the fridge to prevent the cheese from spoiling.

8. Provide students with the opportunity to taste the paneer.

Paneer is a fresh cheese commonly used in India, Nepal, and Iran. While many cheeses will melt when cooked, paneer does not. In Indian cuisine, the pressed version is typically fried or grilled and used as an ingredient. One popular use is in spinach paneer (palak paneer). In this dish the paneer is cut into cubes and sautéed with spinach and seasonings.



ACTIVITY: CHEESE STRUCTURES

CURRICULUM CONNECTIONS: ADST 4 & 5: Designs can be improved with prototyping and testing. ADST 6 & 7: Design can be responsive to identified needs.

Ingredients and Equipment:

- Small cubes of hard BC cheese such as cheddar
- Small pieces of hard BC apple such as Ambrosia
- Toothpicks

Challenge groups of students to build the tallest freestanding structure using a set number of supplies (e.g. 50 toothpicks and 10 cubes of cheese and 10 apple pieces). Remind them of the design process-plan and design it, build and test it, redesign as needed. Once they have completed the tallest tower, the longest bridge, or the biggest pyramid can also be considered for design.