

UNIT PLAN

Unit Title: Cows & Dairy Products - Putting Your Best Hoof Forward!	Stage Stage 1 - Year 2
Term: 3	Strand Knowledge and Understanding - Made Environment Products
Duration: 10 weeks	Concept Dairy Products

RATIONALE

Students will continue to engage in applying the processes of working scientifically and working technologically while investigating the made environment specifically dairy products (Board of Studies NSW, n.d.). Students will identify questions, make predictions and investigate the everyday phenomena products to explore and answer their questions, as well as build upon their prior knowledge of milk and dairy products from their everyday experience.

This unit will develop students investigation, presentation, collaboration, scientific and technological skills. They will gain real life experience during excursion to a farm, and will follow a procedure and instructions to deconstruct butter and damper before reconstructing it again - developing their knowledge of the processes of dairy. Students also begin to understand the need for sensitivity around indigenous perspectives to the land and towards dairy into and the need for dairy alternatives.

To encompass our indigenous students, the unit closely follows the 8 ways. The unit also closely follows the 5E model (Australian Academy of Science) and inquiry based learning principles (Murdoch & Hornsby, 1997). Students engaged in play based activities through the use of hands-on activities and gaining skills in writing, filming and acting in film based media.

GOALS

- Students will gain knowledge about cows and what products they produce
- Develop presentation skills
- Develop an understanding of the indigenous perspective
- Further develop skills to work in collaboration with fellow classmates

OUTCOMES

<p><u>Science and Technology</u></p> <p>Knowledge and Understanding - Made Environment</p> <p>PRODUCTS</p> <p>OUTCOME</p> <p>A student:</p> <ul style="list-style-type: none"> - describes a range of manufactured products in the local environment and how their different purposes influence their design ST1-16P <p>CONTENT</p> <p>There is a range of manufactured products in the local environment.</p> <p>Students:</p> <ul style="list-style-type: none"> - explore a variety of products in the local environment, eg food products and industrial products - discuss the purpose and usefulness of familiar applications of science and technology products used in everyday life, eg rechargeable batteries, recycled materials and single-use disposable food containers - describe a variety of ways in which Aboriginal and Torres Strait Islander peoples have used or continue to use natural materials to make products that meet their needs, eg the use of natural fibres to make woven products <p>The different purposes of products influence their design.</p> <p>Students:</p>	<p><u>Inter curriculum connections - Linking to other KLA's</u></p> <p>English</p> <p>Speaking and listening</p> <p>OUTCOME</p> <ul style="list-style-type: none"> - communicates with a range of people in informal and guided activities demonstrating interaction skills and considers how own communication is adjusted in different situations EN1-1A <p><u>Writing and representing</u></p> <p>OUTCOME</p> <ul style="list-style-type: none"> - plans, composes and reviews a small range of simple texts for a variety of purposes on familiar topics for known readers and viewers EN1-2A <p><u>Reading and viewing</u></p> <p>OUTCOME</p> <ul style="list-style-type: none"> - draws on an increasing range of skills and strategies to fluently read, view and comprehend a range of texts on less familiar topics in different media technologies EN1-4A <p><u>Expressing themselves</u></p> <p>OUTCOME</p> <ul style="list-style-type: none"> - responds to and composes a range of texts about familiar aspects of the world and their own experiences EN1-11D
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Unit Outline

<ul style="list-style-type: none"> - identify the purpose of some familiar products and explore the features of their designs that make the products consumable - explore ways that products may be designed and made to conserve resources - discuss the strengths and limitations of a specific product, considering the materials from which 	<p><u>Reflecting on experiences</u> OUTCOME - identifies and discusses aspects of their own and others' learning E1-12E</p> <p>Mathematics <u>Working Mathematically</u> OUTCOME - describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols MA1-1V</p> <p><u>Measurement and Geometry</u> OUTCOME - measures, records, compares and estimates the masses of objects using uniform informal units MA1-12MG</p> <p>PDHPE <u>Personal Health Choices</u> OUTCOME - Recognises that positive health choices promote well-being PHS1.12</p> <p>Visual Arts <u>Making</u> - Makes artworks in a particular way about experiences of real and imagined things. VAS1.1</p> <p>- Uses the forms to make artworks according to varying requirements. VAS1.2</p>
<p>Working scientifically</p> <p>Objective Students: - develop knowledge, understanding of and skills in applying the processes Working Scientifically</p>	<p><u>Intra curriculum links- Linking to other outcomes within Science and Technology</u> Knowledge and Understanding - Natural Environment LIVING WORLD</p> <p>OUTCOME</p>

Unit Outline

<p>ST1-4WS investigates questions and predicts by collecting and recording data, sharing and reflecting on their experiences and comparing what they others know</p> <p>Working Technologically OUTCOME - uses a structured design process, everyday tools, materials, equipment and techniques to produce solutions that respond to identified needs and wants ST1-5WT</p> <p>Objective Students: - develop knowledge, understanding of and skills in applying the processes Working Technologically - researching and exploring different sources of information, including the internet - describing the features of design ideas and the materials they select - using techniques for documenting and communicating design ideas, including simple plans, drawings and models, using familiar materials - using the results of investigations to refine design ideas</p>	<p>- describes external features, changes in and growth of living things ST1-10LW</p>
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<p>Assessment - formative - Diagnostic: At the beginning of the unit using mind-maps to find out student prior knowledge, and also using a KWL chart before the excursion. - Throughout the unit the students will be engaging in discussions and collaborative tasks where ‘assessment as/of/for learning’ will take place (marking rubric). These discussions will guide future planning.</p>	<p>Assessment - summative - In week ten the students will be assessed on their advertisement/fact report throughout the rubric which is ‘assessment of learning’ as it is the end product summarising their knowledge about dairy products.</p>
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Unit Outline

<p>Evaluation</p> <ul style="list-style-type: none"> - Were students engaged throughout the unit of work? - Were the goals achieved? - Were students questions answered throughout the unit? - Were the assessment items appropriate? - Did the incorporation of the 8 ways and 5 E-model further the students learning? 	<p>Colouring key for unit of work</p> <ul style="list-style-type: none"> - Assessment throughout the unit of work - 8 ways for Indigenous learning throughout the unit of work - Differentiation throughout the unit of work
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Number of STUDENTS - 23

<p>Differentiation Needs</p> <p><u>Student with behavioural issues - ADHD</u> Cater to students’ needs by including hands-on activities throughout the lesson with reference to the 8 ways of indigenous learning. Student enjoys working and learning from others, watching others before doing. Catering to his needs can be done through incorporating group work and open-ended questioning to expand the students visual mind to further engage.</p> <p><u>Gifted and talented students</u> Catering to students’ learning needs by extending their learning through working with others, e.g. may be in peer tutoring role/ or taking a particular role in the group work. Also, extending through the wiki as the students can inquire and extend their knowledge of products, while also giving all students options and choice throughout the unit of work encourages differentiation</p>	<p>Skills, interests and prior knowledge</p> <p>Students in this particular class collaborate well with peers in groups tasks work fantastically with technological endeavours. Students are highly interested in the outdoors, in particular animals. Focusing on farm animals (especially cows) and the products they produce, encourages students to understand the process behind particular products (dairy products). As the students are from a city school, studying dairy products encourages the students to immerse themselves in a totally different context, which will be highly engaging for this year group. Students’ prior knowledge of products come from their own individual ‘funds of knowledge’, which will be brought into the unit through formative assessment.</p>
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LEARNING SEQUENCE- (Risk assessments included at conclusion of learning sequence)

	Learning Engagements	Resources	Outcome	Sign-off
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<p>E N G A G E</p>	<p>Week 1 Lesson 1: Introduction to cows and dairy products Learning objective: Introduce students to cows, dairy products and the milking process; gain insight into the students' prior knowledge and understanding; and produce pre-test as formative assessment item.</p> <ul style="list-style-type: none"> • Play <i>Farmer Rodney, Charlene & Leon</i> video on IWB- this video is a short introduction to the unit. It directly addresses the students and what they are required to do as part of ten week unit on cows and dairy products. It also gives the students insight into a real farmer milking his cow. • Discuss what the students know about cows and dairy products. Find out what they know, what they want to know and what they have learnt previously? This will help guide and adapt the next nine lessons that make up this unit. Questions may include- <ul style="list-style-type: none"> ○ Who has seen a cow in real life? ○ Does anyone know what comes from cows? ○ What are some products we use everyday that come from cows? ○ Do we drink the milk straight from the cow? • On IWB, show the students the <i>What Comes From Cows?</i> flipchart- here students are given a picture of a cow surrounded by words, such as gelatin, leather and eggs. Students must decide which are products from cows and which are not. If they are products of cows, they can be moved into the cow, but if they are not, they will bounce back. • Diagnostic Assessment: in groups (according to seating), students will be given a large cow mind map template to write all of their current knowledge about cows and dairy products. Each student can use a different coloured marker to record their ideas. These mind maps will be hung around the classroom for the students and visitors to see. <p>Differentiation: The activities cater to a range of learning styles; the flipchart will be used as precursor to spelling lists and a word wall; the interactive, verbal and kinaesthetic nature of the activities will engage students with behavioural issues.</p> <p>Connection to the 8 Aboriginal ways of learning As farmer Leon is sharing his own story, the students are engaging</p>	<ul style="list-style-type: none"> • <i>Farmer Rodney, Charlene & Leon</i> video https://www.youtube.com/watch?v=pK1jgsVh40o • IWB • <i>What Comes From Cows?</i> flipchart (Documents/Yr2/Science/Cows Unit) • 25 x A2 cow mind map template • 4 x pack of coloured markers (1 per group) • http://youtu.be/pK1jgsVh40o 	<p>ST1-16P ST1-4WS EN1-1A</p>	
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Unit Outline

	<p>and learning about a new context. Also throughout the discussion after the video, students may be enthused to share their own stories, connecting to Story Sharing in the 8 Ways.</p>		
<p>E N G A G E</p>	<p>Week 2 Lesson 2: Excursion to a Dairy Farm Learning objective- The excursion is to develop an understanding of dairy products. Through the excursion the students will explore the process of milk production and build upon their prior knowledge. Students will also be exposed to other aspects on a farm including plants and other animals and their products.</p> <p>Before going on the excursion have the class prepare a K-W-L chart discussing what they know about the environment on a dairy farm, what they want to know and for when you return, what they've Learned. This can be done as an interactive exercise or have the class prepare individual charts to be shared and completed after the tour.</p> <p>The excursion will take place at <u>Calmsley Hill City Farm</u>. The farm excursion allows the students to explore animals and plants that are grown on the farm, with particular emphasis on the milk production process (talk to farm staff about how the students are focusing on dairy products within the unit of work, and ask if they can go into detail about milk production). Students will also have the opportunity to;</p> <ul style="list-style-type: none"> ● Observe ways in which living things are different and have different needs ● See how plants and animals grow and change ● Understand the purposes of various areas of the farm ● Learn how animal habitats are built to suit the needs of their inhabitants. ● Meet a range of common and not so common farm animals close up. ● Hear and use farm yard terminology in context, including animal names, gender and offspring variations. ● Recognise the source of products: milk a cow, watch the sheep shearing demonstration ● Gather information about the relationships between ● people and environments ● Discover how farms meet needs of people ● Learn about and observe stages in lifecycles ● Discover sights, sounds, smells, and textures of the farm. Observe using all the senses. 	<ul style="list-style-type: none"> • http://www.lpcmilk.com/education.html • http://www.dairy.edu.au/discoverdairy/Teachers/Games-Interactives/Milk-Cycle-Game.aspx • Excursion information sheet http://calmsleyhill.com.au/wp-content/uploads/Down-on-the-Farm.pdf <p>KWL chart</p>	<p>ST1-16P ST1-10LW EN1-1A</p>



	<ul style="list-style-type: none"> ● Ask questions. <p>Please see resources list for risk assessment, what students will need to bring, payment information itinerary and further information.</p> <p>Lesson if the excursion was unable to take place</p> <p>Learning objective- The excursion is to develop an understanding of dairy products. Through the excursion the students will explore the process of milk production and build upon their prior knowledge. Completing KWL chart in this lesson also.</p> <ul style="list-style-type: none"> ● Firstly explore the process of milk production while watching a video, stopping and answering/asking questions to prompt student engagement. Encourage students to contribute to the group mind map about milk production (information from the video-teacher writing on butchers paper with student answers). Give the students the option to follow along using actions throughout the video. <ul style="list-style-type: none"> ○ Where does milk come from? ○ What do Ethan and Justin talk about? ○ Do you think we need dairy in our lives? ○ What do cows eat and drink? ○ Do cows need to have babies to produce milk? ● After the video read through the group mind map and add students responses and answer students questions. ● Play the youtube clip ‘In the Dairy’ where the students can sing/dance along to while also identifying differing dairy products. ● Ask students to ‘think, pair, share’ (documenting ideas in pairs) discussing the need for dairy products and what their favourite dairy products and why. Student are to discuss their ideas with the class, while the teacher tallies results on the mindmap. <p>Connection to the 8 Aboriginal ways of learning-excursion</p> <p>Students are being immersed in the environment connecting to nature and making Land Links throughout the excursion, students may also acknowledge the people of the land which are the Dhurak Tribe. This excursion also caters for all visual and kinesthetic learner as students are encouraged to take part in many activities e.g. milking a cow, connecting to Non-verbal in the 8 ways.</p>	<p>Youtube video- Milk Production http://www.youtube.com/watch?v=qYFA2-4Zzhk</p> <p>Youtube video- In the dairy http://www.youtube.com/watch?v=gib2xaUUHaA</p> <p>Scrap paper</p>		
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<p>E X P L O R E</p>	<p><u>Week 3</u> <u>Lesson 3: Products from cows</u> Learning objective: To understand the differences between pasteurization and homogenization and the advantages of both. To learn more about different milk products.</p> <ul style="list-style-type: none"> ● Firstly, all together we will go through the KWL chart from the previous lesson and students will have the opportunity to share their learning experiences from the excursion with the chart. Students may also ask further questions to guide future planning. ● Write homogenization on the board and sound out the word together for the students. Ask students; <ul style="list-style-type: none"> ○ If they have heard of homogenization before? ○ Predict what the word might mean? ○ What do you think would be the advantages? ● After discussing with the class write a small definition of homogenization on the board <i>e.g. To homogenize is to break up fat molecules in a liquid. This does not have any effect on safety or nutritional value of the milk.</i> Further discuss the sentence and identify key words within the sentence placing key words up on a word wall. Then ask students to write the sentence in their science book. ● Then write up pasteurisation on the board and sound out the word for the students. Ask students; <ul style="list-style-type: none"> ○ If they have heard of pasteurisation before? ○ To predict what the word might mean? ○ What do you think would be the advantages? ● After discussing with the class write a small definition of pasteurization on the board <i>e.g. Pasteurization is a process that kills harmful bacteria by heating milk to a specific temperature.</i> Further discuss the sentence and identify key words within the sentence placing key words up on a word wall. Then ask the students to write the sentence in their science book. ● Watch the video <i>Milk Movements in the factory Homogenisation and Pasteurisation</i> on youtube to further clarify and misunderstandings. ● Discuss the video and add words to the word wall. Let students' choose three words each from this lessons' word wall to add to their spelling list, while also discussing other dairy product they know of. 	<p>Information sheet: Pasteurization and homogenization http://www.hatcherfamilydairy.com/Portals/0/HatcherFamilyDairy/Lesson%20Plans/Lesson-Pasteurization_and_%20Homogenization.pdf KWL chart Youtube clip</p>	<p>ST1-16P EN1-1A EN1-2A EN1-11D</p>	
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	<ul style="list-style-type: none"> Examples for the word wall (homogenisation, pasteurisation, bacteria, heating, milk, temperature, molecule, cottage, cheese, butter etc.) <p>Differentiation Students explore their own prior knowledge and are encouraged to ask questions throughout the lesson, where differentiation is evident. The breakup of the lesson encourages students to stay task, especially students with behaviour issues who need constant guidance. The students are encouraged to choose their words for spelling, allowing individuals to extend themselves or play safe with words they may already know.</p> <p>Formative assessment of KWL chart in regards to the excursion.</p> <p>Connections to the 8 Aboriginal ways: This lesson encourages students to be creative and think about what the word might mean. Students may link their prior knowledge with a story, linking to Story Sharing, the 8 ways.</p>	<p>http://www.youtube.com/watch?v=r0rCEBPgo5Q</p>		
<p>E X P L O R E</p>	<p>Week 4 Lesson 4: Making Butter and damper Learning objective: The students will develop an understanding of how dairy products are used to create other products. They will also develop skills in predicting and observing</p> <p>The classroom is set with 4 work stations. (or ideally in a hospitality kitchen)</p> <p>Station 1</p> <ul style="list-style-type: none"> Jar with marble cream recorder sheet camera <p>Station 2</p> <ul style="list-style-type: none"> Jar without marble cream recorder sheet 	<ul style="list-style-type: none"> 2 mason jars marble whisk Electric mixer 4 bowls flour 1kg salt trays role sheets cameras recording sheet 	<p>ST1-16P</p> <p>EN1-1A</p> <p>MA1-1WM</p> <p>MA1-12MG</p>	

	<ul style="list-style-type: none"> ● camera <p>Station 3</p> <ul style="list-style-type: none"> ● Whisk ● cream ● bowl ● recorder sheet ● camera <p>Station 4</p> <ul style="list-style-type: none"> ● Electric Mixer ● cream ● bowl ● recorder sheet ● camera <p>Begin by placing butter on the table and asking if students know how butter is made. Place cream next to the butter and ask whether they think cream would turn into butter.</p> <p>Explain that the class will be broken into four groups of 5 - one to each station. Look at the implement students will use to churn the cream into butter. Ask for predictions on which will be the fastest, how long they think it will take and what they the process of cream to butter will look like. Record these predictions.</p> <p>After the class discussion, explain the steps of the experiment and the 5 roles.</p> <p>Each group will have 5 roles.</p> <ol style="list-style-type: none"> 1. butter maker - handling the jar/whisk 2. timer - keeping time of the experiment 3. observer - keeping an eye on the butter process 4. recorder - recording the observers observations 5. photographer - photographing the process for records 			
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	<p>Whisk/shake the cream for 10mins. Stopping every 2 minutes to swap jobs and record observations.</p> <p>Each group shares the end result of 10 mins of whisking/shaking and compares the results to the predictions.</p>			
	<p>Making Damper</p> <p>Using the butter we made last lesson, we are going to make damper.</p> <p>Follow the following procedure:</p> <ol style="list-style-type: none"> 1. Preheat oven to 200°C. Line a baking tray with non-stick baking paper. Combine the flour and salt in a large bowl. Use your fingertips to rub the butter into the flour until the mixture resembles fine breadcrumbs. 2. Add the water to the flour mixture and use a round-bladed knife in a cutting motion to mix until the mixture just comes together, adding 1-2 tablespoons extra water if the mixture is a little dry. Use your hands to bring the mixture together. 3. Turn the dough onto a lightly floured surface and knead gently for 1-2 minutes or until smooth. Shape into an 18cm disc and place on tray. Use a sharp knife that has been dipped in flour to mark 8 wedges on top. Dust the damper with a little extra flour and bake in preheated oven for 30 minutes or until the damper is cooked through and sounds hollow when tapped on the base. Transfer to a wire rack for 5 minutes to cool slightly. Serve warm or at room temperature. <p>Teacher to lead the children in step by step instructions for safety purposes. Ideally parent help would be present to assist groups. Adults to manage ovens and hot trays.</p> <p>Student will be assessed summatively on their observations and finished products. They will be required to show evidence they can follow a procedure and use dairy products to make other products.</p> <p>Connection to the 8 Aboriginal ways of learning</p>	<p>per group:</p> <ul style="list-style-type: none"> ● 450 grams (3cups) self-raising flour ● pinch of salt ● 80 grams butter, chilled, cubed ● 185ml water (¾ cup) ● 1 cup measurer ● 2 ¾ cup measurer 		

	 <p>Throughout this lesson the students explore the process of making butter by open-ended questioning to prompt an understanding that butter is made from cream. Then the students inquire and find out for themselves which utensils are the fastest when making butter. This furthermore relates to Non-linear from the 8 ways as the students are collaborating and building a shared knowledge through working together and sharing ideas. Additionally, students are involved in hands-on experience where all are encouraged to participate connecting to Non-verbal from the 8 ways.</p> 			
<p>E X P L O R E</p>	<p><u>Week 5</u> <u>Lesson: Learning about nutrients</u> Learning Objective: For students to be able to grasp the idea of how nutrients are recycled from a cow.</p> <ul style="list-style-type: none"> ● Students will participate in a role-play activity that allows them to effectively understand the cycle of nutrients from a cow on a dairy farm. It is important that the students understand that the cow starts with all of the nutrients and the following activity will help them understand the cycle. ● There will be 12 stations with 1-2 students at each. The stations will consist of: <ul style="list-style-type: none"> ❖ Cow ❖ Field ❖ Animal Feed ❖ Electricity ❖ Community ❖ Local Businesses ❖ Manure ❖ Methane Digester ❖ Food ❖ Milk ❖ Us ❖ Farm 	<p>12 paper bags marbles permanent markers Interactive whitboard http://www.eatforhealth.gov.au/sites/default/files/files/the_guidelines/n55_agthe_large.pdf</p>	<p>ST1-16P EN1-1A PHS1.12</p>	

	<ul style="list-style-type: none"> • Students will first just follow instructions without any questioning from the teacher. This will act as an informal pre-test for this area to see if students understand the concept we are exploring. • To complete the activity, each station will have a brown paper bag with the stage of the cycle labeled on it. 16 marbles will begin with the cow as it carries all of the nutrients to begin with. <ol style="list-style-type: none"> 1. The “COW” station begins with 16 marbles in their bag and it gives 8 marbles to the student holding the “MANURE” bag and the other 8 marbles to the students holding the “MILK” bag 2. The students holding the “MANURE” bag gives four marbles to the “FIELD” student and four marbles to the “METHANE DIGESTER” student 3. The “FIELD” gives 2 marbles to the “ANIMAL FEED” students and 2 marbles to the “FOOD” student 4. The “METHANE DIGESTER” gives all 4 marbles to the “ELECTRICITY” student 5. The “ANIMAL FEED” STUDENT” student gives both marbles to the “COW” 6. The “FOOD” student gives both marbles to “US” 7. The “ELECTRICITY” gives 2 marbles to the ‘COMMUNITY’ and 2 marbles to the “FARM” 8. The “COMMUNITY” gives 1 marble to “LOCAL BUSINESSES” and 1 marble to “US” <ul style="list-style-type: none"> • Once we have been through this without any any questioning or probing from the teacher, questioning will occur to see if any students are familiar with this cycle. Questions may include: <ul style="list-style-type: none"> → Can anyone tell the class what they think we were representing in that activity? → Why does this process happen? → Is this process important? → What do you think would happen to the cow if this process did not occur? • We would then go through the activity slowly and we would stop and question at each stage of the nutrient cycle to ensure that all students are following and understanding the process. • Questioning is key throughout this activity as it not only challenges students thinking but it also acts as a type of formative assessment. This also allows students to ask any questions that they have and the teacher will allow for other students to answer these if they can. 			
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	<ul style="list-style-type: none"> This lesson will then make a direct link to our ‘healthy eating’ unit in PDHPE. We are focusing on the five food groups and the ‘good’ foods that our bodies need. The link will be made by talking to the class about how we just learnt all about what a cow needs to stay happy and healthy so now we need to learn about the types of food that are good for our growing bodies. <p>The image of the healthy eating chart will be displayed on the IWB and this will be used as the stimulus for the lesson to spark discussion and for students to ask questions.</p> <p>For this lesson we will be focusing on dairy products and how they are vital for the growth and development of young children, good for their bones and their teeth.</p> <p>Connection to the 8 Aboriginal ways of learning The process of how the nutrient cycle is quite complex however by using the role-play type activity, we are explicitly mapping this process in a visual way to ensure that all students can comprehend this complex process.</p>  			
<p>E X P L A I N</p>	<p>Week 6 Lesson 6: Researching dairy products Learning objective: For students to have a deeper understanding of a range of dairy products and other animal products</p> <ul style="list-style-type: none"> On the IWB, show students a range of pictures of dairy products that they will be researching, such as cream, yoghurt, chocolate, or cheese. In pairs, students will be doing a webquest where they have to choose a particular dairy product. They can choose from yoghurt, cheese, ice-cream, or chocolate, and research product through completion of the web quest. The webquest includes- 	<ul style="list-style-type: none"> IWB Dairy product pictures (Documents/ Yr2/Science/ Dairy Pics Webquest- http://createwebquest.com/stephaniegoff92 	<p>ST1-16P ST1-4WS ST1-5WT EN1-4A</p>	

- **Introduction:** *I dairy you to find out more!* Farmer Rodney and Charlene welcome the students and invite them to find out more about dairy products.
- Task: students choose a dairy product to research and present the findings in a mode of their choice. Students must find out the history of their chosen product how it's made, how it can be packaged and some interesting facts.
- **Process:** using books and the websites, students find information to answer the questions they have about their product. Once they complete the first task, they can choose another farm animal (seen on the excursion) to research in order to out what products it produces.
- **Conclusion:** completion of Task 1 and 2 (Task 2 is an extension item for students working beyond), and **presentation of final product (students get a choice of how they want to present their research).**
- **Evaluation:** rubric and peer assessment (summative assessment)
- **Resources:** links to relevant websites are listed under the subheadings of the different dairy products (books can also be used).
- **Teacher's Page:** gives relevant background information to guide and support students throughout webquest process.

[/i-dairy-you-find-out-more](#)

- books from school library

Differentiation: students will be paired with a student of similar ability level; students who are working beyond will have the option to complete Task 2 as an extension item; students will be able to choose what dairy product they research and how they present their findings from a variety of modes, which caters to the array of learning styles and interests in the class.

Connection to the 8 Aboriginal ways of learning



The webquest provides students with a learning map through the instructions, images and links that are provided to them on the page. This allows for students to be involved in scaffolded self-directed learning.



This lesson also includes community links as it makes connections to real-life purposes through students completing their own research into other dairy products that they use in their own lives that we have not explicitly learnt about in previous lessons.





<p>E L A B O R A T E</p>	<p>Week 7 Lesson 7: Designing/marketing dairy products Learning objective: to create a dairy product package that advertises a dairy product and it's various attributes.</p> <ul style="list-style-type: none"> Using IWB, show students a range of dairy product packaging and discuss the attributes each. Questions to include- <ul style="list-style-type: none"> What can you notice about the different packagings? How does the differences in size, shape, colour and fonts change what you think the products? If you could choose between two different milk cartons (same size and product but one was in boring packaging and the other was in a bright, colourful packaging with a great slogan, which one would you choose? Explain to students that they will be choosing a dairy product (cream, butter, milk, chocolate, cheese, yoghurt etc.) that they will design a package for, and that their design will be used as part of a documentary or advert that they will create at the end of the unit. It is important for the students to consider everything that they have learnt in the previous lessons, such as where dairy products come from, the nutrient content and what the product is used for, to inform their design. Put a range of tangible dairy product items in the middle of the room for students to look at and touch, while they design a draft product package on A4 paper. The students will have the option of using a template. When the students are happy with their design, they can produce their final copy. The copy will be done in their weekly art lesson. <p>Differentiation: students have the choice of which dairy product they want to design; students working towards the art outcomes, have the option to use a template when designing their product. The use of visuals and concrete materials, caters to both visual and kinaesthetic learning styles.</p> <p>Connection to the 8 Aboriginal ways of learning Students begin to bring their knowledge of the topic together through symbols and images in designing their product. This enables students to</p>	<ul style="list-style-type: none"> IWB Dairy Product Packaging (Documents/ Yr 2/ Science/ Cows Unit) concrete materials- milk carton, cream tub, ice cream tub, chocolate wrapper. 50 x A4 paper 30 x template (choice of carton or tub) (Documents/ Yr2/Science/ Template1 or Template 2) 	<p>ST1-16P EN1-4A VAS1.1 VAS1.2</p>	
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	effectively convey their knowledge on dairy and packaging in a non-verbal way		
E L A B O R A T E	<p>Week 8</p> <p>Lesson 8: Dairy alternatives</p> <p>Learning objective: students will gain knowledge and understanding of the difference between lactose intolerance and dairy allergies. They will also learn the process of making a dairy alternative.</p> <p>(*there are no nut allergies in this class)</p> <ul style="list-style-type: none"> ● Begin with a class discussion on why certain people may not drink milk and why? <ul style="list-style-type: none"> Questions to include- <ul style="list-style-type: none"> ○ Who knows someone who does not drink milk? Why? ○ What are some alternatives to dairy milk? Are there other kinds of milk? ○ Can these alternatives be used in place of dairy milk in other products, such as cakes, cheese, yoghurt etc? ○ Who knows what it is called when you can't drink milk? (*hint: there are two names for this) ● Watch <i>Lactose Intolerance</i> video- this explains and animates the difference between lactose intolerance and a dairy allergy. ● In groups of 4, students will learn how to make almond milk (dairy alternative)- <ul style="list-style-type: none"> ○ Each group stands around a table with a bowl, cup measure, gauze bag, bottle water and almond meal. Each group will be given a typed recipe that is accompanied with pictures. ○ Each group member will take on a role, which will rotate. The roles include- <ul style="list-style-type: none"> ■ Reader ■ Collector ■ Maker ■ Recorder/Speaker (will fill in <i>Making Almond Milk</i> as they progress through the steps in the recipe). ○ Students will follow the recipe to make almond milk, which will be followed by taste testing. ○ The last student who took on the role of Speaker, will share with the class what their group experienced while making the almond milk. 	<ul style="list-style-type: none"> ● https://www.youtube.com/watch?v=wbMkwtNN-D ● 5 x large mixing bowl ● 5 x cup measure ● 5 x gauze bag or cheesecloth ● 5 x bottle of water ● 2 x bag of almond meal ● 30 x plastic shot cups ● 10 x <i>Making Almond Milk</i> worksheet 	<p>ST1-16P</p> <p>ST1-4WS</p> <p>MA1-1WM</p> <p>MA1-12MG</p> <p>EN1-4A</p>

	<p>Differentiation: students will be in mixed ability groups; students will have the opportunity to take on different roles, which cater to different learning styles; students who have a dairy allergy or lactose intolerance, will have an invested interest in this lesson.</p> <p>Connection to the 8 Aboriginal ways of learning  This lesson provides the class with an extremely hands on lesson where they are predominantly learning by 'doing'. Although the explanation through the video and discussion is crucial for their learning, the kinaesthetic learning is essential to consolidate students learning.  This lesson also makes community links as students can apply this knowledge to a real-life situation and implement it in their own life or with family/friends</p>			
<p>E L A B O R A T E</p>	<p>Week 9 Lesson 9: Webquest Learning objective:For students to develop a deeper understanding of a range of dairy products and other animal products and to be able to produce this research in a way of their choosing.</p> <ul style="list-style-type: none"> • This lesson allows students to continue work on their webquests at their own pace. This element of the unit was designed for self directed learning so it is not essential that students complete all activities. Students are able to explore a particular element or animal in more depth to ensure they have a greater appreciation and understanding of dairy products and other animal products. • Students will be able to talk to their peers or conduct their own research on questions they may still have on the topic we have been studying. • Time will be allocated for students who have been working on the second task on the webquest to present their research in a way of their choosing. • This acts as the differentiation for this activity as students are able to present their findings in a way that is suited to their learning style and type of creativity. <p>Summative Assessment: This will include students completed work samples. Although students do not have to have all activities completed it still indicates to the teacher the level of understanding students have of the topic through both written and orally presented work.</p> <p>Connection to the 8 Aboriginal ways of learning</p>	<ul style="list-style-type: none"> • http://createwebquest.com/stephaniegoff92/i-dairy-you-find-out-more 	<p>ST1-16P ST1-4WS EN1-1A EN1-4A EN1-11D</p>	

	 <p>From students own research that they conduct in this lesson, they are able to make connections to their own life as these are all products they use on a regular basis. This enables students to share knowledge with their family and community and teach their people in their lives about what they have learnt.</p>			
<p>E V A L U A T E</p>	<p>Week 10 Lesson 10: Filming an Ad/News Fact Report Learning objective: in groups students have two options to contribute to the class documenta</p> <ol style="list-style-type: none"> 1. <u>Create a 30 second advertisement.</u> <p>Groups choose one students design from Week 7 and write, direct, film and edit an advertisement. They are to consider the health benefits learnt in week 5 and the ingredients and processes learnt in week 6. Students create a slogan and script for the product.</p> <ol style="list-style-type: none"> 2. <u>Create a 30-60 second Fact report.</u> <p>Groups are to select a dairy product researched in week 6 and write, direct, film and edit a fact report. They are to report the process/procedure of making the product as well as the health benefits and uses - in Australian and other cultures.</p> <p>Groups will work together to write the script and rehearse before filming.</p> <p>Once the task is explained, examples of ads/fact reports from youtube will be viewed. Students will be asked if there is anything they liked, disliked, or any techniques or filming techniques recognised.</p> <p>The groups will have 4 roles. Director - Following the script and instructing on staging Filmer - Choosing the shots and filming. 2 Actors - memorising the script and performing on camera.</p> <p>As a class, on the IWB, research and discuss the roles through http://kidsvid.4teachers.org</p> <p>Once all students understand every role, and have worked collaboratively to write their script, invite an IT expert to teach the filmer how to operate the camera.</p>	<ul style="list-style-type: none"> • Cameras • Computer Lab 	<p>ST1-16P</p> <p>EN1-2A</p> <p>EN1-11D</p> <p>ST1-5WT</p>	

	<p>Students will then film, act and direct their films.</p> <p>Upon conclusion of filming, the IT expert will run through the elements of editing on iMovie importing, placing on the timeline, cutting clips, transitions and titles.</p> <p>The documentary will be shown to the school at the classes assembly first week term 4.</p> <ul style="list-style-type: none"> • Summative assessment will be ascertained from the filming process and the content taught or advertised. <p>Connection to the 8 Aboriginal ways of learning</p> <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;">  </div> <div> <p>Lesson 10 enables students to combine their knowledge from the past 10 weeks into a class documentary. This lesson combines with the reconstruct/deconstruct way of learning and the non-linear component as students are exposed to example advertisements before they begin the activity. The examples act as stimulus for students to create their own ideas for their advert and therefore reconstructing their own knowledge.</p> </div> </div>			
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Rubric of formative assessment throughout the whole unit- building upon all formative assessments
4=highest 1=lowest

CATEGORY	4	3	2	1
Contributions	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!	Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.
Working with Others	Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Usually listens to, shares, with, and supports the efforts of others. Does not cause \"waves\" in the group.	Often listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.
Quality of Work	Provides work of the highest quality.	Provides high quality work.	Provides work that occasionally needs to be checked/redone by other group members to ensure quality.	Provides work that usually needs to be checked/redone by others to ensure quality.
Attitude	Never is publicly critical of the project or the work of others. Always has a positive attitude about the task(s).	Rarely is publicly critical of the project or the work of others. Often has a positive attitude about the task(s).	Occasionally is publicly critical of the project or the work of other members of the group. Usually has a positive attitude about the task(s).	Often is publicly critical of the project or the work of other members of the group. Often has a negative attitude about the task(s).
Class discussion	Very enthusiastic in class discussion without shouting, listens to others speak, pays attention to teacher/presenter	Participates in discussion without shouting, listens to others speak, pays attention to teacher/presenter	Sometimes participates in discussion or shouts during discussion, sometimes listens and pays attention	Does not participate in discussion, does not listen to others or pay attention to teacher/presenter
Answering questions	Student routinely volunteers answers to questions and willingly tries to answer questions s/he is asked.	Student volunteers once or twice and willingly tries to all questions s/he is asked.	Student does not volunteer answers, but willing tries to answer questions s/he is asked.	Student does not willingly participate.

Rubric for Summative Assessment week 10

4=highest 1=lowest

CATEGORY	4	3	2	1
Point of View - Purpose	Advertisement establishes a purpose at the beginning and maintains that focus throughout! Cohesive advertisement/fact report.	Establishes a purpose at the beginning, but occasionally wanders from that focus.	The purpose is somewhat clear but many aspects of the advertisement/fact report seem only slightly related.	It was difficult to figure out the purpose of the advertisement/fact report.
Group Work	The group functioned exceptionally well. All members listened to, shared with and supported the efforts of others. The group (all members) was almost always on task!	The group functioned pretty well. Most members listened to, shared with and supported the efforts of others. The group (all members) was almost always on task!	The group functioned fairly well but was dominated by one or two members. The group (all members) was almost always on task!	Some members of the group were often off task AND/OR were overtly disrespectful to others in the group AND/OR were typically disregarded by other group members.
Research	Group researched a product in week 6 and engaged fantastically with the wikispace activity, using their ideas for the final product.	Group researched the product in week 6 while using most of their research from the wikispace in their final product.	Group researched a product and week six and found it difficult to complete work on the wikispace however managed to complete the final product.	Either no research was done or it was not clear that the wikispace was used at all.
Enthusiasm	Facial expression and body language show a strong interest and enthusiasm about the topic throughout the newscast, but it is not overdone.	Facial expression and body language show a strong interest and enthusiasm about the topic throughout the advertisement/fact report, but it is somewhat overdone.	Facial expression and body language show some interest and enthusiasm about the topic throughout the newscast.	Facial expression and body language depict apathy or boredom with the topic.
Understanding of concept evident from final product	Advertisement /fact report illustrates an accurate and thorough understanding of dairy products.	Advertisement /fact report illustrates an accurate understanding of most dairy products.	Advertisement /fact report illustrates a limited understanding of dairy products.	Advertisement /fact report illustrates inaccurate understanding of dairy products.

Risk assessments throughout the unit of work

Unit Outline

Week -->	1,3,7	2	4,8	5	6,9	10
Item or Task	Class work	Excursion	Cooking	Group Work	Computer work	Filming
Risk	Typical use of classroom equipment such as paper and pens.	http://calmsleyhill.com.au/wp-content/uploads/Venue-Safety-Risk-Assessment-2014.pdf	Use of kitchen equipment/utensils such as electric mixer and knives. Risk lessened with use of parent helpers. Lactose intolerance/allergies	Use of paper bags and marbles. Chance of swallowing marbles.	Use of computers and electrical equipment.	Students will be outside the normal classroom environment while filming. Computer work will also apply akin week 6/9
Risk Rating	Minor	Minor	Moderate	Minor	Minor	Minor

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Unit Outline

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