



Food & Drink
CHOICE

YEAR 7

All About Milks

Introduction

In this unit students will explore the health benefits of milk and milk related products and use food labels to guide healthy choices. Different types of milk including full cream, skim, lactose free, soy and almond milk will be explored and taste tested. Current health information sourced through online media regarding milk and other dairy products will also be reviewed and critiqued. Students will use vocabulary including: dairy alternatives, milk allergy, lactose intolerance and anaphylaxis.

Key Messages

- We can read and interpret food labels, find reliable nutrition information and budget our money to plan and select healthy affordable food and drinks.

This unit will enable students to:

- Explore and evaluate social, cultural, environmental and economic factors which influence both personal and other's food and drink choices
- Explore and critique persuasive influences on food choices, for example, advertising, marketing, promotions and health and nutrition claims.
- Evaluate and interpret nutritional labels, Australian Dietary Guideline information, allergy and special dietary requirement information to make informed healthy food and drink choices.



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Links to the Western Australian Curriculum*

Main learning area: HEALTH AND PHYSICAL EDUCATION		
Strands	Sub-strands	Content descriptions
Personal, Social and Community Health	Being healthy, safe and active	Strategies to make informed choices to promote health, safety and wellbeing, such as researching nutritious meals that offer value for money; proposing alternatives to medicine; examining accessible physical activity options in the community
	Contributing to healthy and active communities	Contributing to healthy and active communities Preventive health practices for young people to avoid and manage risk, such as: sun-protective behaviours adoption of the Australian Dietary Guidelines for healthy food choices and serving sizes

Additional links to the Western Australian Curriculum

Additional learning areas	Strands	Sub strands/contexts
Design and Technologies	Knowledge and understanding	Food and fibre production Food specialisations
Science	Science as human endeavour	Use and influence of science

* <https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser>

Links to the Australian Curriculum*

Main learning area: HEALTH AND PHYSICAL EDUCATION		
Strands	Sub-strands	Content descriptions
Personal, Social and Community Health	Being healthy, safe and active	Practise and apply strategies to seek help for themselves or others (ACPPS072) Investigate and select strategies to promote health, safety and wellbeing (ACPPS073)
	Communicating and interacting for health and wellbeing	Develop skills to evaluate health information and express health concerns (ACPPS076)

Additional links to the Australian Curriculum

Additional learning areas	Strands	Sub strands	Content descriptions
Technologies	Design and Technologies: Knowledge and understanding		Analyse how food and fibre are produced when designing managed environments and how these can become more sustainable (ACTDEK032) Analyse how characteristics and properties of food determine preparation techniques and presentation when designing solutions for healthy eating (ACTDEK033)
Science	Science as human endeavour	Use and influence of science	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121)

<https://www.australiancurriculum.edu.au/f-10-curriculum/learning-areas/>

General capabilities

The Australian Curriculum describes seven general capabilities which extend across each learning area. Their relevance to learning tasks in this unit is indicated below:

Learning Task	Literacy	Numeracy	ICT capability	Critical and creative thinking	Ethical understanding	Personal and social capability	Intercultural understanding
Dairy-licious							
Weighing up the difference							
What's in the tub?							
Dairy fun facts							

Unit Overview

Learning Task	Suggested time allocation	Resources needed
Introducing Key Messages		
<p>1. Dairy-licious</p> <p>In this learning task, students will explore cow's milk and non-dairy milk alternatives such as almond, rice, soy, coconut and oat milk. Students will have the opportunity to taste test a range of 'milk' products and explore how their origins, nutritional value and costs vary.</p>	60 minutes	<ul style="list-style-type: none"> • 5x plastic tasting cups per student to conduct tasting • A selection of different types of milk i.e. full cream, skim, rice, goats, almond, oat or soy milk. • Fridge or esky to keep milk cold (it's safer and tastes better -otherwise use UHT milk) • Internet access or library resources • <i>Dairy-licious</i> Activity sheet – 1 per student
Developing Key Messages		
<p>2. Weighing up the difference</p> <p>This learning task explores some of the reasons why people choose to drink cow's milk alternatives. These may include: medical reasons, taste preference, religion or choice to follow a specific diet.</p>	60 minutes	<ul style="list-style-type: none"> • 'Is almond milk all it's cracked up to be?' article http://www.news.com.au/lifestyle/food/is-almond-milk-all-its-really-cracked-up-to-be/story-fneuz8wn-1226993112207 – 1 per student • 'The place of dairy on a Paleo diet' https://paleoleap.com/place-of-dairy-on-paleo-diet/ article -1 per student • <i>Weighing up the difference</i> Activity sheet – 1 per pair • Access to reliable health information i.e. internet, brochures and pamphlets.
<p>3. What's in the tub?</p> <p>The focus of this learning task is on using food label information to make healthy dairy food (yoghurt) choices.</p>	60 minutes	<ul style="list-style-type: none"> • 5-6 empty tubs of different yoghurt • Dairy nutrients Activity sheet – 1 per class • Coloured pieces of squared paper – 5 or 6 per student • Glue • Internet or library book access
Reflecting Key Messages		
<p>4. Dairy fun facts</p> <p>This learning task encourages students to reflect on what they have learned in this unit.</p>	30 minutes	<ul style="list-style-type: none"> • Small pieces of coloured card (approx. 6x3cm) – 3 per student • Cow print Activity sheet printed to A2 size– 1 per class

Teacher Information

Some learning tasks require food preparation and cooking. Before commencing:

- Check students do not have allergies or sensitivities to foods used.
- Ensure included food and drinks are culturally acceptable.
- Refer to food and drinks from other cultures in relevant class discussions.
- Discuss food hygiene and safety practices, for example, always wash your hands before touching food and do not use sharp knives without adult supervision.

Most learning tasks require prior preparation; therefore refer to Resources needed list below before commencing each learning task.

Learning Task	Useful information and resources to deliver this Learning Task
1. Dairy-licious	<ul style="list-style-type: none"> • Milk is defined in two ways: (1) lactation products from an animal and especially a cow used as food by people. (2) food products produced from seeds or fruit that resembles and is used similarly to cow's milk e.g. almond milk, soy milk. The nutritional value of the former is the basis for dietary recommendations; the latter may be fortified to this level • Milk and other dairy products are good sources of protein and calcium. Our bodies need protein to work properly, grow and repair. Calcium helps to keep our bones and teeth strong. • Dairy foods are also a good source for other minerals, carbohydrates and vitamins. These essential nutrients are explored further in Learning Task Three. • The <i>Australian Dietary Guidelines</i> recommend adolescents consume three serves of dairy foods per day to ensure the recommended daily intake of calcium and other nutrients are met. The Australian Dietary Guidelines Teacher Information Sheet is available here: https://www.refreshedschools.health.wa.gov.au/professional-learning/professional-knowledge/teacher-information-sheets/ • For more information on the health benefits of dairy foods and common dairy food myths; refer to the Nutrition Australia website pages: http://www.nutritionaustralia.org/national/resource/dairy-foods-how-much-enough and http://www.nutritionaustralia.org/national/resource/dairy-food-myths • Availability and promotion of non-dairy 'milks' derived from plant origins, especially nuts and grains, have increased in Australia in recent years but the nutritional value may not be the same. Two of these include: <ul style="list-style-type: none"> Rice milk- contains more carbohydrates than cow's milk, but not significant amounts of calcium or protein, and no cholesterol or lactose. Commercial brands may be fortified with vitamins and minerals, including calcium, vitamin B12, vitamin B₃, and iron. Rice milk is made by pressing rice through a mill using diffusion to strain out the 'milk' from pressed grains. Almond milk: contains no animal proteins, cholesterol or lactose. It is suitable choice for vegans, vegetarians, lactose intolerant but not those with nut allergies. Commercial almond milk products are sometimes enriched with vitamins, disclosed on the ingredient list. The basic method to make almond milk is to blend soaked almonds with water and sweetener then straining out the almond pulp.

	<ul style="list-style-type: none"> For nutritional content of various milk types and other foods high in calcium use the FSANZ Australian Food Composition Database http://www.foodstandards.gov.au/science/monitoringnutrients/afcd/Pages/default.aspx
<p>2. Weighing up the difference</p>	<ul style="list-style-type: none"> For various reasons people choose to consume milk alternatives to dairy milk. Vegans may choose non-animal ‘milks’ including soy, rice, almond or other cereal or nut milk. These products are also suitable for low cholesterol or lactose diets. Cow’s milk is a common cause of food allergy in young children but usually outgrown by school age. Milk (dairy) allergy symptoms include hives, eczema, vomiting, diarrhoea, wheezing or anaphylaxis. Lactose intolerance is commonly mistaken as milk allergy, however is quite different. Lactose intolerance is caused by lack of the enzyme lactase which helps to digest the milk sugar lactose. Symptoms include diarrhoea, vomiting, stomach pain but not rashes or anaphylaxis. Some ethnic groups are more susceptible to lactose intolerance than others. For further information on dairy allergies and lactose intolerance, refer to the Australasian Society of Clinical Immunology and Allergy website http://www.allergy.org.au/patients/food-allergy/cows-milk-dairy-allergy or the Nutrition Australia website: http://www.nutritionaustralia.org/national/resource/lactose-intolerance Copies of Weighing up the difference – activity sheet are required Students research types of milk and discuss the suitability for different consumers. Teacher Information Sheet – <i>Determining Reliable Sources of Online Health Information</i>, provides a checklist for assessing information. https://www.refreshedschools.health.wa.gov.au/professional-learning/professional-knowledge/teacher-information-sheets/
<p>3. What’s in the tub?</p>	<ul style="list-style-type: none"> The essential nutrients found in dairy products are also highlighted. Refer to the <i>Dairy nutrients</i> Activity sheet for a summary of these nutrients and their functions. For recommendations about the level of fats, and other nutrients, in packaged foods, refer to this handy nutrition wallet card https://livelighter.com.au/Tools-and-Resources/Resources <i>Reading a Food Label</i> – Teacher Information Sheet https://www.refreshedschools.health.wa.gov.au/professional-learning/professional-knowledge/teacher-information-sheets/ More information about yoghurt https://livelighter.com.au/news/Whats-hiding-in-your-yoghurt
<p>4. Dairy fun facts</p>	<ul style="list-style-type: none"> No additional information required.

Introducing Key Messages

Learning Task One: *Dairy-licious*

1. Write on the board MILK.
Ask:
 - *What is Milk?*
Record and discuss student responses.
 - *What milk or milk products will you consumed today?*
Students can discuss this in small groups or share in a brief class discussion.
 - *What are some of the health benefits for including dairy milk and other dairy products in our diet?*
 - *How much dairy food do we need to eat each day?*

2. Revise types of dairy foods (milk, cheese, yoghurt) and their function as a source of protein for growth and repair and calcium for strong bones and teeth. (Revise the dairy section of the *Australian Guide to Healthy Eating*)
3. Revise the need for 3 serves of dairy foods per day and take suggestions for how this could be achieved.
4. Explain some people may not be able to or choose not to drink cow's milk.
Ask:
 - *Have you heard of reasons why people may not drink or eat dairy products?*

5. List all suggestions on the board.
6. Explain some people have medical reasons for not drinking milk. Describe and differentiate milk allergy and lactose intolerance. See Teacher Information section and Teacher Information sheet *Allergies and Intolerances* for further detail.
<https://www.refreshedschools.health.wa.gov.au/professional-learning/professional-knowledge/teacher-information-sheets/>
7. Explain other people may choose not to drink cow's milk. This may be due to taste preference, religion, concerns about dairy milk safety or a specific diet they have chosen to follow.
Ask:
 - *If people don't consume dairy foods, how else could they obtain calcium?*

8. At the front of the classroom, set up a display of 5 cups containing different types of milk e.g. full cream dairy, skim dairy, lactose free dairy, goats milk, rice milk, almond milk, oat milk, soy milk. Number the cups but do not have the names on display.
9. Hand out *Dairy-licious* Activity sheet and provide students with a taste test of each of the different types of milk displayed.
10. Students complete appearance and taste test column on *Dairy-licious* Activity sheet.
11. Ask students to consider the different appearance and tastes of each type of milk. Encourage students to use words such as 'creamy', 'thick', 'nutty' or 'rich' instead of words such as 'yum' or 'yuck'. Refer to Teacher Information Sheet – *Taste Testing in Class* <https://www.refreshedschools.health.wa.gov.au/professional-learning/professional-knowledge/teacher-information-sheets/>

12. By a show of hands, conduct a class vote to determine which cup of milk was the favourite.

Reveal what type of milk was in each cup. Ask students to record the types of milk on their activity sheet.

Ask:

- Are you surprised by which milk you identified as your favourite?
- Which one did you think would be your favourite?
- What type of milk do you normally drink?

13. Explain as well as tasting different, the nutritional value and supermarket price of these milks also varies significantly.
14. Invite students to use online supermarket websites such as Woolworths or Coles to find and compare the cost per litre of different milks, record their findings on the *Dairy-licious* Activity sheet. The table below is indicative of how prices may vary.

Type of milk	Cost per litre
Full cream	\$1.45
Skim milk	\$2.15
Soy milk	\$2.42
Lactose free milk	\$2.53
Rice milk	\$2.99
Almond milk	\$3.87
Chocolate flavoured milk	\$4.25

15. Provide students with the nutritional labels of the milks tasted and ask them to record the basic nutrient content eg Total fat, saturated fat, protein, sugars, sodium. Australian Food Composition Database can also assist.

<http://www.foodstandards.gov.au/science/monitoringnutrients/afcd/Pages/default.aspx>

16. Ask students to complete the reflection question on the *Dairy-licious* activity sheet.

Developing Key Messages

Learning Task Two: *Weighing up the difference*

1. Explain for various reasons some people may not be able to drink cow's milk. This may be due to medical reasons, personal preference (i.e. taste), religion or specific dietary choices or ethical beliefs.
2. Explain cow's milk is a common cause of food allergy particularly in young children. Lactose intolerance is commonly mistaken as milk allergy, however it quite different. See Teacher Information section for further detail.
3. Explain in Australia in recent years, there has been a decrease in cow's milk consumption and an increase in plant based milk consumption.

Ask:

- *Why do you think this is?*
4. Brainstorm and record all ideas on the board.
 5. Explain that the media and health information online has been a big influence.
 6. Distribute a copy of the '*Is almond milk all it's really cracked up to be?*' <http://www.news.com.au/lifestyle/food/is-almond-milk-all-its-really-cracked-up-to-be/story-fneuz8wn-1226993112207> article and '*The place of dairy on a Paleo diet*' <https://paleoleap.com/place-of-dairy-on-paleo-diet/> to each student.
 7. Encourage students to read these two articles independently and jot down the key arguments made in each.
 8. Explain there is lots of conflicting health information made available to consumers through television ads, television shows, newspapers, blogs, Facebook, or the internet generally.

Ask: (Class discussion or small groups)

- *Where do you get your nutrition and other health information?*
 - *How can you determine what nutrition or other health information is credible and reliable?*
 - *Out of these two articles, which one do you trust? Why?*
9. In pairs, students are to source reliable nutrition and health information (reinforce what makes a document/information credible) and complete the *Weighing up the difference* Activity sheet on the different types of milk by – reflecting on the advantages and disadvantages of the different types of milks and how some milks suit the dietary needs of some people but not others.
 10. After students have completed this Activity sheet,

Ask:

 - *Where did you source your information?*
 - *How did you know it was reliable?*

Learning Task Three: *What's in the tub?*

1. At the front of the classroom, set up a display of 5-6 empty tubs of different yoghurt. Make sure each of these has a nutrition information panel.
2. Ask for 5-6 volunteers (equivalent to the number of yoghurt tubs you have)
3. Ask each volunteer to select a yoghurt tub
4. Without looking at the nutrition information panel, ask the volunteers to line up in the order they think would have the highest fat content to the lowest fat content.
5. Whilst the volunteers are getting in line, ask the class:
 - *Can anyone tell me the amount of total fat per 100g we should be looking for to make a healthy choice of packaged food items? (less than 3g)*
 - *Can anyone tell me the amount of saturated fat per 100g we should be looking for to make a healthy choice of in packaged food items? (less than 1.5g)*
6. Once the volunteers have lined up in order, reveal the actual fat content of each yoghurt tub and ask for volunteers to move place in the line accordingly.
7. Repeat steps 4-6 with the sugar content. (Look for <5g per 100g-some real fruit yoghurts, may be a little higher due to sugar from the fruit)

Ask:

- *Did the amount of fat in some of the yoghurt tubs surprise you? Why?*
 - *Did the amount of sugar in some of the yoghurt tubs surprise you? Why?*
 - *How would you go about choosing a yoghurt product?*
8. Explain that it is important to review the ingredients list available on yoghurt and other dairy products. It is also important to have an understanding of the nutrients which dairy products provide.
 9. Many people know dairy is high in calcium which is important to help build and maintain strong bones. However, dairy products provide over 10 essential nutrients
 10. Display and discuss the functions of each nutrient listed on the *Dairy nutrients* Activity sheet.
 11. Explain to students they are going to create a paper nutrient chain.
 12. Distribute 5 -6 different coloured pieces of square paper to each student.
 13. For each square, students are to fold the square in half and then in half again.
 14. Each square should now have four small squares. Glue one small square onto another of a different colour as illustrated below.
 15. Repeat this until all 5 -6 squares of paper are glued together.
 16. Students are to pick 5 -6 nutrients from the *Dairy nutrients* Activity sheet and label each different coloured square with a nutrient.

17. Using the information students have learnt in this learning task along with the internet or library books, for each nutrient selected, students are to record:
 - What that nutrient does for the body and why we need it
 - 2 healthy food sources (including at least one dairy product) for that nutrient
18. Encourage students to use a mix of pictures and words to describe the function and food sources for each nutrient.
19. Display for results for all students to review.



Reflecting on Key Messages

Learning Task: *Dairy fun facts*

1. Distribute 3 small pieces of coloured card (approx. 6cm x3cm) to each student.
2. Ask students to record three interesting facts they have learnt about dairy foods in this unit.
3. Students are to glue their interesting facts card onto the A2 *Cow print* Activity sheet.
4. Display the completed *Cow print* Activity sheet in a visible spot of the classroom.

Additional activities

Classroom

- Research ways to make dairy alternatives. Encourage students to taste and compare homemade vs. store bought dairy-alternative milks.
- Investigate processing methods and products using *Milk Production - Cow to Cup* Teaching Idea to develop research, evaluation and critical thinking skills.
<https://www.refreshedschools.health.wa.gov.au/k-10-curriculum-materials/using-refresh-ed/teaching-ideas/>

Whole school

- Encourage the canteen to increase their number of dairy rich foods.
- Hold a parents' forum at school led by students to demonstrate the importance of milk and other dairy products, and how to increase the amount of dairy in a school lunchbox.

Assessment activities*

Health and Physical Education

- **Jackson Family Case Study** -
Students explore the reasons why people choose to drink cow's milk or milk alternatives. Using the case study provided, students respond to the situation and provide recommendations, justifying their responses.

Please refer to the **Sample Assessment Task document and marking key provided.**

<http://www.refreshedschools.health.wa.gov.au/wp-content/uploads/2019/05/Year-7-All-About-Milks-HPE-Sample-Assessment-Task-.pdf>

Dairy-licious - Activity sheet

Cup Number	Appearance	Taste	Type	Source Plant/Animal	Nutritional Content	Cost/Litre
1						
2						
3						
4						
5						

Considering all the factors above. Which milk do you think is the best option for you to consume? Explain your answer.

Weighing up the difference - Activity sheet

Using reliable sources of information, what are the advantages and disadvantages of each type of milk for consumers?

Type of milk	Advantages	Disadvantages	Source/ Where you found your information.
Full cream milk			
Skim milk			
Lactose free milk			
Rice milk			
Soy milk			

Dairy nutrients - Activity sheet

Nutrient	Function
Vitamin A	<ul style="list-style-type: none">○ Important for growth○ Helps healthy eye sight
Vitamin B12	<ul style="list-style-type: none">○ Helps keep blood healthy○ Assists in the formation of nerve cells
Riboflavin	<ul style="list-style-type: none">○ Helps release energy from food○ Helps cells to function correctly
Calcium	<ul style="list-style-type: none">○ Important for strong bones and teeth○ Required for muscle and nerve function
Magnesium	<ul style="list-style-type: none">○ Important structural component of bone
Zinc	<ul style="list-style-type: none">○ Helps with wound healing○ Essential for normal growth and development of bones, the brain and many other parts of the body
Potassium	<ul style="list-style-type: none">○ Helps control blood pressure○ Important to assist function of the nervous system
Phosphorus	<ul style="list-style-type: none">○ Works with B vitamins to release energy from food
Carbohydrate	<ul style="list-style-type: none">○ Provides energy for the body
Protein	<ul style="list-style-type: none">○ Needed for growth and development○ Helps repair damaged body tissues○ Essential for maintaining muscles

