

Who or what made my ice-cream?



What do you know?

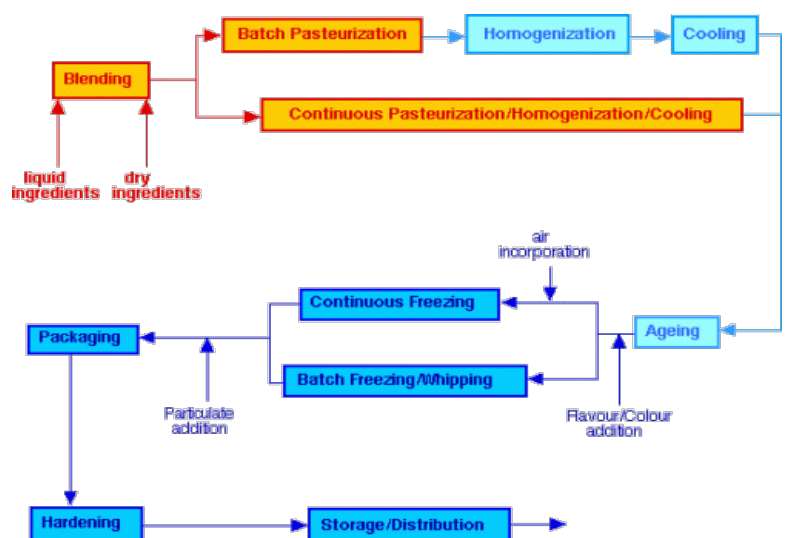
Inquiry question: Who or what made my ice-cream?

Geography: From the farm to the table:

Ice cream is a sweetened frozen food typically eaten as a snack or dessert. It is usually made from dairy products, such as milk and cream, and often combined with fruits or other ingredients and flavors. It is typically sweetened with sugar or sugar substitutes. Typically, flavourings and colourings are added in addition to stabilizers. The mixture is stirred to incorporate air spaces and cooled below the freezing point of water to prevent detectable ice crystals from forming. The result is a smooth, semi-solid foam that is solid at very low temperatures. It becomes more malleable as its temperature increases.

The basic steps in the manufacturing of ice cream are generally as follows:

- Milking the cow
- Blending of the mix ingredients
- Pasteurization
- Homogenization
- Aging the mix
- Freezing
- Packaging
- Hardening
- Transporting to shop
- Putting into ice-cream freezer
- Selling it to the public

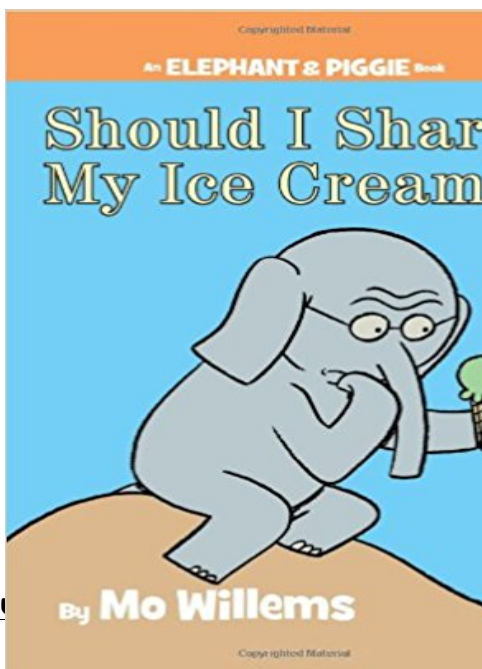


CURRICULUM YEARLY OVERVIEW – YEAR ONE											
GENERAL CAPABILITIES & CROSS CURRICULUM PRIORITIES											
GENERAL CAPABILITIES	Literacy	Numeracy	ICT Competence	Critical and Creative Thinking	Ethical Behaviour	Personal and Social Competence	Intercultural Understanding	General capabilities are represented within and across the learning areas and across the learning areas to different degrees. Potential connections are outlined below, but only suggestions.			
CROSS-CURRICULUM PRIORITIES	Aboriginal and Torres Strait Islander histories & cultures	Asia & Australia's engagement with Asia	Sustainability	Cross-curriculum priorities are embedded in all learning areas. They will have a strong but varying presence depending on their relevance to the learning area. Potential connections are outlined below, but only suggestions.							
ENGLISH											
LANGUAGE	Understand the ways use different systems of communication to influence needs and purposes and that many people may use sign systems to communicate with others	Understand that language is used in combination with other means of communication, for example facial expressions and gestures to reinforce meaning	Understand that there are different ways of stating information, making offers and giving commands	Explore different ways of expressing emotion, including verbal, visual, body language and facial expressions	Understand that the purposes texts serve change their structure or predictable ways	Recognise that different types of punctuation, including full stops, question marks and exclamation marks, signal sentences that make statements, ask questions, express emotion or give commands	Understand patterns of repetition and contrast in simple texts	Identify the parts of a simple sentence that represent "What's happening?", "Who or what is involved?" and the circumstances.			
LITERATURE	Explore different texts that represent people, places and things (narrative, drama, non-fiction, poetry, etc.) and discuss how they contribute to meaning	Compare different kinds of images in narrative and information texts and discuss how they contribute to meaning	Understand the uses of vocabulary in everyday contexts as well as a growing number of school contexts, including appropriate use of formal and informal terms of address in different contexts	Know that regular one syllable words are made up of letters and consonant letter clusters that correspond to the sounds heard, and how to use visual memory to write high-frequency words	Recognise and know how to use phonemes in word families for example 'ely' in 'play' and 'slay'	Recognise sound-letter matches including phoneme deletion and substitution	Recognise sound-letter matches including common vowel and consonant digraphs and consonant blends	Understand the variability of sound-letter matches			
LITERACY	Discuss how authors create characters using language and images	Discuss characters and events in a range of literary texts and share personal responses to these texts, making connections with student own experiences	Express preferences for specific texts and authors and listen to the opinions of others	Discuss features of plot, character and setting in different types of literature and explore some features of characters in different contexts	Listen to, recite and perform poems, chants, rhymes and songs, imitating and inventing sound patterns including alliteration and rhyme	Read texts imaginatively using drawing, writing, performance and digital forms of communication	Use comprehension strategies to build their and inferential meaning about the events, ideas and information in texts that they listen to, view and read by changing growing knowledge of context, text structures and language features	Creates short imaginative and information texts that show emerging use of appropriate text structures, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements for meaning, relationship and design	Research student's own texts and discuss possible changes to improve meaning, spelling and punctuation		
LITERACY	Respond to texts drawn from a range of cultures and experiences	Engage in conversations and discussions, using active listening behaviours, showing interest and contributing ideas, information and questions	Use interaction skills including turn-taking, recognising the contributions of others, speaking clearly and using appropriate volume and pace	Make short presentations using some rhetorical text structures and language, for example opening statements	Describe some differences between imaginative information and persuasive texts	Read supportive texts using prediction, phrasing, fluency, contextual, semantic, grammatical and phonics knowledge and emerging text processing strategies for growing knowledge of context, text structures and language features					
LITERACY	Write using upper and lower case letters	Construct texts that incorporate appropriate images using software including word processing programs									
MATHEMATICS											
PROFICIENCY STRANDS	Understanding Involves connecting names, numerals and symbols to their meaning and using them readily forward and backwards, locating numbers on a line, naming days of the week.	Fluency Includes counting number in sequences ready forward and backwards, locating numbers on a line, naming days of the week.	Problem Solving Includes using materials to model number problems, giving and receiving directions to unfamiliar places, using familiar counting sequences to solve unfamiliar problems and discussing the appropriateness of the answer.	Reasoning Includes explaining, justifying and indirect comparisons of length using informal units, justifying representations of data, and explaining patterns that have been created.	The proficiency strands are an integral part of mathematics content across the three strands. They reinforce the significance of working mathematically within the content and describe how the content is explored and developed. Educators should aim to embed each proficiency strand in every content description wherever possible.						
NUMBER & ALGEBRA	Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by fives, tens and one hundred from zero.	Recognise, model, read, write and locate numbers to at least 100. Locate these numbers on a number line.	Count collections to 100 by partitioning numbers using place value.	Recognise and describe one-half as one of two equal parts of a whole.	Recognise, describe and order Australian coins according to their value.	Investigate and describe number patterns formed by skip counting and patterns with objects.					
MEASUREMENT & GEOMETRY	Measure and compare the lengths and capacities of pairs of objects using uniform informal units.	Test time to the half-hour.	Describe duration using months, weeks, days and hours.	Give and follow directions to familiar locations.	STATISTICS & PROBABILITY	Identify subtypes of familiar events including chance and describe them using everyday language such as "it's happening", "it's likely", "it's right happen".	Choose simple questions and gather responses.	Represent data with objects and drawings when one object or drawing represents one data value. Describe the display.			
SCIENCE											
OVERARCHING IDEAS	Patterns, order and organization	Form and function	Stability and change	Scale and Measurement	Matter and Energy	Systems					
SCIENCE UNDERSTANDING	Living things have a variety of external features	Living things live in different places where their needs are met	Everyday materials can be physically changed in a variety of ways	Observable changes occur in the size and shape of objects	Light and sound are produced by a range of sources and can be sensed	SCIENCE AS A HUMAN ENDEAVOUR, YR 1&2	Science involves asking questions about, and describing changes in, objects and events	People use science in their daily lives, including when coming to their environment and home fires			
SCIENCE INQUIRY SKILLS YR 1&2	Respond to and pose questions, and make predictions about familiar objects and events	Participate in different types of guided investigations to explore and answer questions, such as manipulating materials, testing ideas, and accessing information sources	Use informal measurements in the collection and recording of observations, with the assistance of digital technologies as appropriate	Use a range of methods to sort information, including drawings and pictorial tables	Through discussion, compare observations with predictions	Compare observations with those of others	Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and digital				
HISTORY – Present and past family life											
KEY INQUIRY QUESTIONS	How can family change or remain the same over time?	How can family life be different from or similar to the past?	How do we describe the sequence of time?								
HISTORICAL KNOWLEDGE & UNDERSTANDING	Differences in family structures and roles today, and how these have changed or remained the same over time.	How the present, past and future are signified by terms indicating time such as "in the long run", "then and later" and "the past", and the "tomorrow" as well as by dates and changes that may have personal significance, such as birthdays, celebrations, and anniversaries.	Differences and similarities between students' daily lives and life during their parents' and grandparents' childhoods, including family traditions, leisure time and communications.				KEY CONCEPTS	Continuity & Change	Cause and Effect		
HISTORICAL SKILLS PP – Yr 2	Sequence familiar objects and events	Distinguish between the past, present and future	Pose questions about the past using resources provided	Explore a range of sources about the past	Identify and compare features of objects from the past and present	Explore a point of view	Develop a narrative about the past	Use a range of communication forms (oral, graphic, written, role play) and digital technologies			
LOTE	Listening and Responding and Speaking	Viewing, Reading and Responding	Writing	Cultural Understandings	The System of the Target Language	Language Learning Strategies					

Identify the lesson intentions across the curriculum for each of the activities in the inquiry so that assessment at the end of the process will be easy. Be very clear about each of the lessons you present in relation to intention AND assessment.

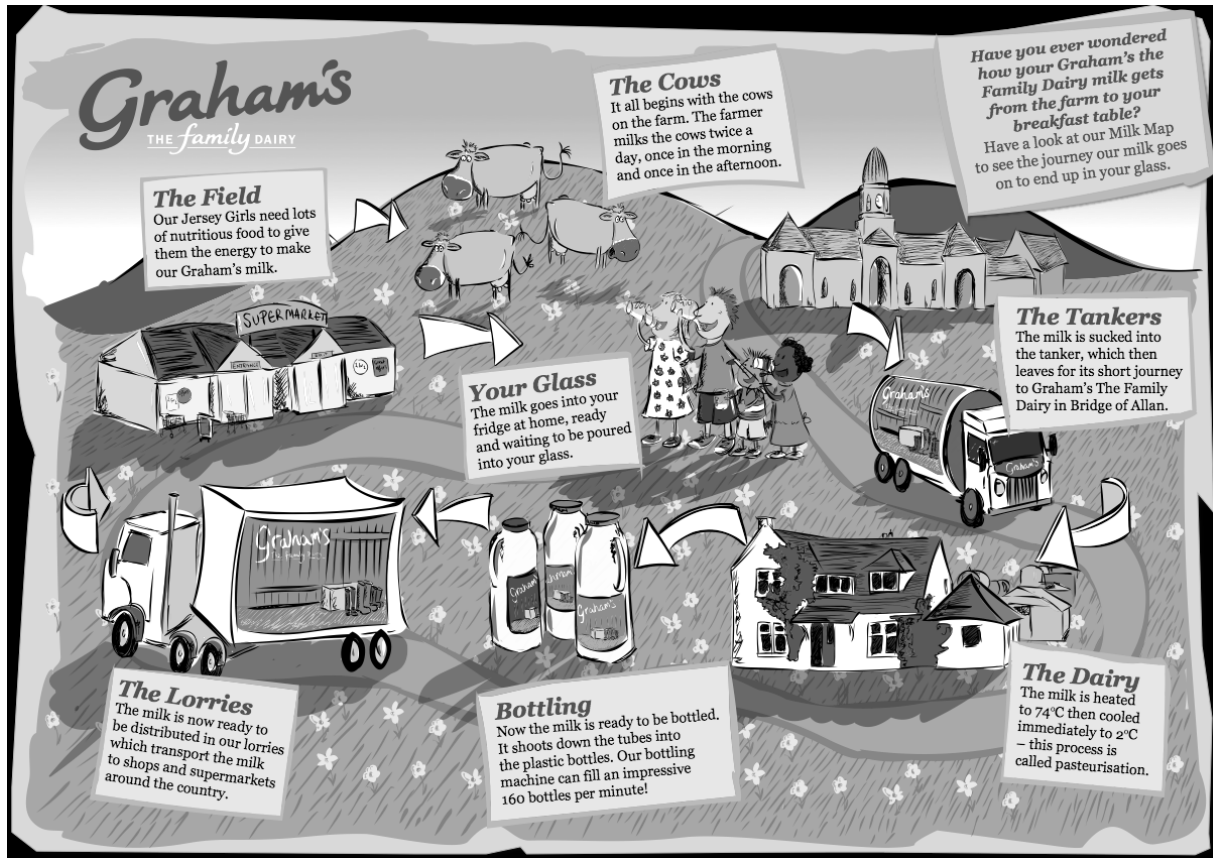
What will the students collect the tasks in as they explore the Inquiry question? A portfolio? A scrap book? An icecream tub? Make this part of the fun!

Texts: Find as many texts as you can find about icecreams OR make some stories up OR use photos of kids eating icecreams and tell stories OR create wepublish story with each student about icecream. Read read read...Talk icecreams and stories about icecreams for a while.....



Who made my ice-cream? Do you know?

Ask the students... Maybe have a tub of vanilla ice-cream with cones so they can all have an ice-cream to eat whilst you are talking to them about where it came from. Ask BLANK Level 1, 2 questions... maybe even Level 3 to stimulate curiosity.



So... who made my icecream?

A shop man or lady?

A policeman?

A Doctor?

Miss Naomi? ... Mummy?

Who??

Use the above image and the texts to explore the question..

Could an animal make the ice-cream????

Could it?

Which animal??

Have a collection of domestic animal cards. Play a game with the students with them..

Create two Yes/ No card piles and ask the question as you display the image: so...

Did a horse make my ice-cream? Yes/ No Did a donkey make my ice-cream?

Then show them the cow card ... Go slowly. Explore and talk about it a bit! A

cow? What's a cow? What does it do? Where does it live? Try WWWWH...

questions. Start talking with the students about farms with green paddocks water, rich grasses, feed and COWS... Colours/ shapes/ sizes

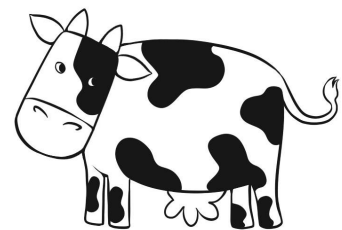


Talk with the students about cows being a living thing... in a family of living things. What is a living thing? Get the students to start thinking about life and living and where animals fit.

Then ask the question again. Did the cow make my icecream? NO????

What did the cow make? How did this happen?

On the Discovery table create a display of milk products: Butter, Cheese Yoghurt, chocolate, choc milk, cartons and tubs etc., Get the students to write the labels on the products on a cow label shape:



Finding out:

Milk: A glass of milk.

Get the students to draw the glass of milk whilst you talk about it: Shape size colour...

How does this milk from the cow get turned into ice-cream or bu: What happens? Where does this milk from the cow go? More que: Show a Youtube clip of the dairy where cows are getting milked.. students to look at key concepts.





So one cow makes... how many cows can you see? How much milk are these cows making for the farmer?

What is he going to do? He has got a BIG problem..



Create a little bit of tension... Where is the milk going to go??

Show the students a map of Western Australia..... identify where your school is.

Now identify where the cows on the farms are. Show distances. Draw the connecting lines on a map from the farm to all of the places the students can tell you in the state. This will be fun to know where their geographical territory is..



Then: Discuss the pasteurizing process and the need for the milk to go to a factory to.... what? Where is this factory?
 Show the students a range of BROWNES trucks or ... small, large, long, short, articulated trucks etc., use positional language ...
 Perhaps build a Milk truck with the students with cardboard boxes/ wheels and sign on the outside. Make the truck long!!

Sorting out:

So we have the milk in the factory.

What happens next to the milk?

Show the students a IGA pamphlet or a Coles brochure. Get them to cut out all of the milk products that they can find. Create a MILK product page!

Students cut out all of the milk products that they can find and glue them onto their page. Then they need to start thinking about how milk gets turned into: Cheese/ cream/ butter/ yoghurt/..... and ICECREAM!! How?



Discuss the layers of milk [cream/ curds/ whey] or the by products of the pasteurization process.

Get the students to draw connecting lines between milk or cream and the products.

How does the milk change?

How???

Maybe bring in an electric beater or a hand beater and a litre of cream.

See what happens when the milk gets beaten beaten beaten. Taste the product.

What does it taste like?

Then make some yoghurt with your milk. Taste test. How does that taste?

Focus upon the science/ matter change process

So what about icecream ? 'How can we make it?'

Inquiry question is: 'Who or what made my icecream?'

What's the ice-cream process?

What needs to happen to get it cold?

Use warm/ hot/ cool colder cold/frozen sort of language

- Milking the cow
- Blending of the mix ingredients
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Create vanilla ice-cream.

Follow a simple recipe. Step by step.

Have the children write or photograph each step

Preparing a Custard Ice Cream Base

Simmer the milk. Pour 3 cups (710 ml) of whole milk into a medium pot and place it on the stove. Heat the milk on medium-high for about 5 minutes or until it comes to a simmer. Take it off the heat as soon as bubbles form on the surface, and allow it to cool.^[1]

You can substitute heavy cream or a combination of whole milk and heavy cream if you prefer. Be careful not to let the milk to boil over.

This recipe will make a basic vanilla ice cream base. If you want to create a specific ice cream flavor, you can add herbs such as lavender, coffee beans, or even chocolate into the milk to steep or melt into it.



Combine the eggs, sugar, and salt. Add 8 egg yolks, 1 cup (200 g) of sugar, and a pinch of salt to a large bowl. Whisk the ingredients together until a thick paste forms.^[2]

Cool the milk and add it to the egg mixture. Once the milk has cooled to room temperature, which should take about 10 minutes, slowly pour it to the egg mixture in a steady stream. Stir the milk in gently until it is fully incorporated.^[3]



4 Transfer the mixture to a pot and cook it until it reaches 170°F (77°C). When the egg mixture and milk are fully combined, return it to the pot. Place it back on the stove over medium-low heat. Stir the mixture in an "S" shape so you can scrape the bottom of the pot, and allow it to cook until it reaches 170°F (77°C).^[4]

Check the mixture's temperature.

You can also tell that the base has cooked enough when it is thick enough to cling to the back of your spoon.

5 Strain the mixture over an ice bath and add vanilla. Place a wire mesh strainer over a bowl that's set in a larger bowl filled with ice water. Pour the ice cream base through the strainer and into the smaller bowl to remove any lumps. Next, mix in 1 teaspoon (5 ml) of vanilla and stir well.^[5] You can substitute a fresh vanilla bean for the extract if you prefer. Cut the bean in half and scrape the seeds out to mix them into the base.



6 Chill the mixture for a half hour. Once the ice cream base is fully mixed, cover the bowl with a piece of plastic wrap and leave it over the ice bath for 20–30 minutes. Alternatively, place it in the refrigerator, and chill it for 3 hours or overnight.^[6]

Mixing the Base with an Electric Ice Cream Maker

Freeze the maker's bowl overnight. The bowl that holds your ice cream base must be fully chilled so the cooling liquid inside it is frozen solid. Place it in your freezer until it is completely frozen, which should take 10 to 22 hours.^[7]

If you're having a problem with the bowl getting freezer burn, wrap it in a plastic bag before putting it in the freezer.

Set the bowl in the machine and insert the mixing arm. When the bowl is completely frozen, remove it from the freezer and place it inside the ice cream maker. Next, place the dasher, or mixing arm, in the bowl to ready it for churning.^[8]

The bowl must be completely frozen. If it isn't, the ice cream base won't freeze fast enough, which will result in ice crystals.

How exactly you reassemble the ice cream maker depends on the brand and how it is constructed. Refer to the manufacturer's instructions, if needed.

3 Turn on the machine and add the chilled base. The ice cream maker should be turned on before you add the base so it begins churning it immediately. Carefully pour the base into the machine, then place the lid on top.^[9]

4 Allow the ice cream to process according to manufacturer instructions. Consult the manual that comes with your machine to know how long it takes for the ice cream to churn. In most cases, it will need 20 to 30 minutes to reach the proper consistency.^[10]

If you want to add mix-ins such as nuts, crumbled cookies, and candy pieces to the ice cream, you should also consult your manual. You'll likely be advised to add to them just before the ice cream is finished mixing.

Transfer the ice cream to a freezer safe container and freeze it until solid. When the ice

cream maker is finished churning the ice cream, it will have the consistency of soft serve. If you like that texture, you can eat it right away. Otherwise, spoon it into a freezer-safe container with a lid and freeze it for another 2 to 4 hours.^[11]
 Make sure your container is airtight to prevent the ice cream from becoming freezer burned.

Now you have a container of frozen vanilla icecream:
 Collect some icecream tubs:
 Sort colours/ flavours and Icecream producers into piles.
 Count how many of each you have collected.
 Create a graph of icecream tubs



Create an icecream shop with the tubs and containers.
 Get the students to work out how much each tub will cost.
 Label the tubs. e.g 50 cents
 Collect some play money and set up the money processes for an ice-cream shop with the students. Let the students to play requesting and responding. Teach them the listening/ speaking process.
 Make posters and signs for the shop and start thinking about what flavours the students like and how you might adapt the vanilla ice-cream with bananas or berries or chocolate or colours or flavours... to create different flavours to taste and for sale.

Exhibition:

Get every student serving icecream to wash their hands WITH soap.
 Talk about health and hygiene. Why?

Collect ice-cream cones or cups AND an ice-cream scoop.
 Perhaps adapt some store bought vanilla ice-cream with flavours for this.
 Advertise across the school...perhaps fund raise for an outing? " Tomorrow's ice-cream stall"
 Set up a stall in the undercover area at morning tea with the students.
 Get them to serve and sell what they have made.
 Count the money they have raised.
 Invite the parents or guardians into the classroom for an ice-cream party to see what their children have learnt.

Assessment: Can each student tell you the process of milk from the cow to the final ice-cream product?

Can they understand the inquiry question?

Who or what made my ice-cream?

Have they collected evidence from the tasks all the way through to demonstrate this understanding?

Where has that been collected?

Be clear about the assessment process in relation to the lesson intentions all the way through the inquiry.

Have great fun with this!!

