

Acknowledgements

This educational resource was produced by Australian Pork Limited (APL).

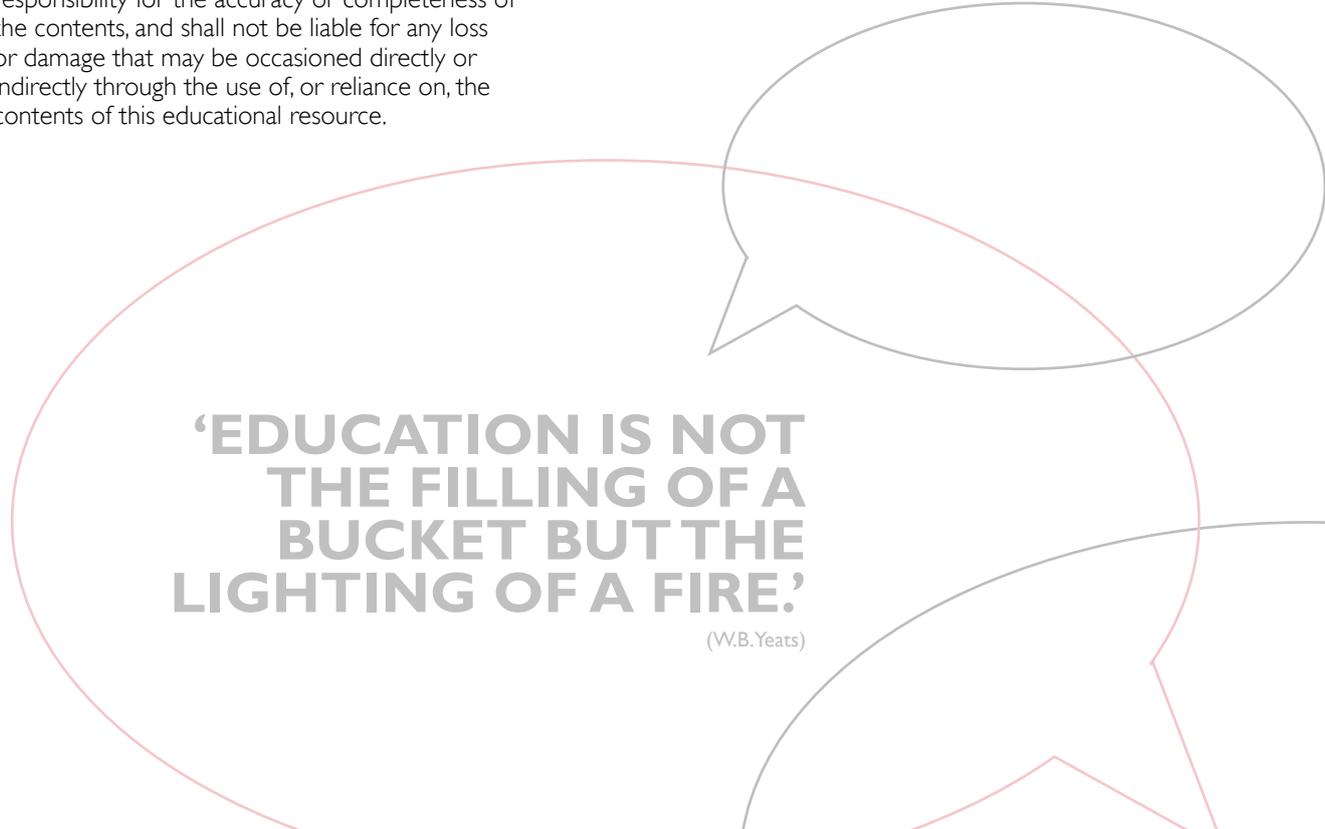
The resource is designed to introduce young people to food production and the pork industry in Australia. Whilst not an exhaustive educational resource, it is intended to raise the awareness of school-aged students about pork production.

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The materials in this educational resource have been developed by Angela Colliver from Angela Colliver Consulting Services Pty Ltd.

APL would like to acknowledge and sincerely thank the education program reference group for offering comments on the drafts of materials in this educational resource.

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**‘EDUCATION IS NOT
THE FILLING OF A
BUCKET BUT THE
LIGHTING OF A FIRE.’**

(W.B. Yeats)

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Introduction

Rationale

This resource material aims to help teachers and students in junior primary classes investigate systems of care for animals that are grown, raised and processed for food in the pork industry. The objectives of the educational resource are to:

- Support Australian Pork Limited (APL) and its members in expanding awareness about the pork industry in Australia by engaging and informing teachers and students about the role and importance of the industry in the Australian economy, environment and wider community
- Provide resources which help build leadership skills amongst teachers and students in communicating about pork production and the industry in Australia
- Develop education resources that can be used across Australia that provide encouragement, information and practical teaching advice that will support efforts to teach about pork production and the pork industry sector
- Educate school students on ways pigs are raised and grown
- Demonstrate to students that everyone can consider careers in the pork industry and along the chain of supply of pork products
- Develop engaging learning programs using an inquiry process aligned with the Australian Curriculum
- Develop in school communities, an integrated pork industry education program that emphasises the relationship between the pork industry, individuals, communities, the environment and our economy.

These educational resources are an effort to provide practical support to teachers and students learning about food and fibre production and primary industries in schools.

About the approach

Several key principles underpin the theoretical and practical application to this unit. In providing an *integrated framework for inquiry*, complemented by rich explorations of texts that are, in turn, supported by an emphasis on undertaking a challenge or task, the unit requires students to:

- Search for information using both digital and non-digital means
- Use research techniques and strategies
- Use thinking and analysis techniques
- Present findings to a real audience
- Reflect both on the product created and the process undertaken.

Rather than seeing knowledge as something that *is taught* the emphasis in this unit is on knowledge and understanding that *is learned*.

The unit involves students in:

- Working from a basis of their prior knowledge and experience
- Seeing a real task or purpose for their learning
- Being directly involved in gathering information first hand
- Constructing their knowledge in different ways
- Presenting their learning to a real audience
- Reflecting on their learning.

The approach used, is the *inquiry approach* through five phases: Engage, Explore, Explain, Elaborate and Evaluate. The phases of the model are based on the 5E's instructional model (Bybee, 1997). These phases are:

- **Engage:** The 'Engage' phase begins with lessons that mentally engage students with an activity or question. It captures their interest, provides an opportunity for them to express what they know about the concept or skill being developed, and helps them to make connections between what they know and the new ideas.
- **Explore:** The 'Explore' phase includes activities in which they can explore the concept or skill. They grapple with the problem or phenomenon and describe it in their own words. This phase allows students to acquire a common set of experiences that they can use to help each other make sense of the new concept or skill.
- **Explain:** The 'Explain' phase enables students to develop explanations for the phenomenon they have experienced. The significant aspect of this phase is that explanation follows experience.
- **Elaborate:** The 'Elaborate' phase provides opportunities for students to apply what they have learned to new situations and so develop a deeper understanding of the concept or greater use of the skill. It is important for students to discuss and compare their ideas with each other during this phase.
- **Evaluate:** The 'Evaluate' phase provides an opportunity for students to review and reflect on their own learning and new understanding and skills. It is also when students provide evidence for changes to their understanding, beliefs and skills.

Teacher notes

Resource description

This unit encourages students to examine aspects of pork production and the things that farmers are doing to care for their pigs that are grown, raised and processed for food. Students explore methods and technologies involved on Australian pig farms to house and produce pigs. Students are given an insight into ways farmers care for their animals and are designing housing systems using a variety of housing regimes, designed with environmental stewardship principles and animal welfare standards in mind.

As the unit progresses, the emphasis shifts to investigating products produced from pigs and how they meet our needs. Through identifying products produced from pigs students are encouraged to consider stages involved in getting pork and other food from a farm to our fork.

Having explored some stages and what happens to the food from the farm where it is grown to our fork, students then investigate foods produced from pigs.

They think about how their family and cultural group cook different recipes using pork and in turn share recipes, tastes and explore options suggested by the students.

At each stage in the investigations, the students are encouraged to their findings about systems of care for pigs that are grown, raised and processed for food; the products produced from pigs; the stages involved in getting pork and other food from the farm to our fork; and recipes using pork families eat.

Year level: Foundation – Year 2

Curriculum focus

It contains a unit of work in **Technologies and Science** with a variety of student activities selected as vehicles to help students:

- Investigate systems of care for animals that are grown, raised and processed for food
- Investigate methods and technologies involved on Australian pig farms to house and produce pigs
- Investigate ways food is processed from farm to fork
- Investigate concepts and ideas about how food produced by pigs can be prepared for healthy eating
- Select ideas and undertake inquiries
- Reflect and evaluate the systems of care for animals that are grown, raised and processed for food.

Teachers will find, as they examine this unit and its student activities that there are some learning areas which are more strongly represented than others. This is a consequence of the subject matter with which students are dealing. Sustainability is the dominant cross curriculum perspective, and Technologies and Science learning areas feature strongly in the unit as the

topics deal with pigs and their needs, features and ways they grow and change, factors that shape the care systems used in pig production and processes used to make food. English and the critical and creative thinking, particularly in design and technologies processes, are featured strongly throughout the activities.

The unit includes regular reminders to invite students to check and reflect on the way their understandings, attitudes and values are evolving. In addition to reflection on content, teachers are encouraged to question students about the process they are using to come to new understandings.

Deep understanding takes time – achieving it is a gradual process that evolves throughout the unit and is facilitated by reflection. This unit invites students to think beyond the information and data they gather and the texts they read and view – to step back from their investigations and do some big picture thinking for improved animal care and reduced animal impacts, for example safe and healthy environments, well ventilated sheds, good food, clean water, access to vaccines and improved waste avoidance/resource recovery on farms. In many activities, it is suggested the teachers 'reflect aloud' and thereby model to students the kinds of questions, language and thinking associated with this task.



Australian curriculum content descriptions

Technologies

Strand: Design and Technologies knowledge and understanding: Food and fibre production

Entry: Explore how plants and animals are grown for food, clothing and shelter and how food is selected and prepared for healthy eating (ACTDEK003)

ID: www.australiancurriculum.edu.au/technologies/design-and-technologies/Curriculum/F-10
see Foundation – Year 2 (ACTDEK003)

Science

Strand: Science Understandings: Biological science

Entry: Living things have basic needs, including food and water (ACSSU002)

ID: www.australiancurriculum.edu.au/Elements/ACSSU002

Strand: Science Understandings: Biological science

Entry: Living things have a variety of external features (ACSSU211)

ID: www.australiancurriculum.edu.au/Elements/ACSSU211

Strand: Science Understandings: Biological science

Entry: Living things grow and change and have offspring similar to themselves (ACSSU030)

ID: www.australiancurriculum.edu.au/Elements/ACSSU030

Strand: Science as a Human Endeavour: Nature and development of science

Entry: Science involves asking questions about, and describing changes in, objects and events (ACSHE021)

ID: www.australiancurriculum.edu.au/Elements/ACSHE021

Strand: Science as a Human Endeavour: Nature and development of science

Entry: Science involves asking questions about, and describing changes in, objects and events (ACSHE034)

ID: www.australiancurriculum.edu.au/Elements/ACSHE034

Strand: Science as a Human Endeavour: Use and influence of science

Entry: People use science in their daily lives, including when caring for their environment and living things (ACSHE035)

ID: www.australiancurriculum.edu.au/Elements/ACSHE035

Other

Cross Curriculum Priorities: Sustainability

OI 2: All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival.

Implementing the unit and activities in the classroom

Using the unit

The unit can be used in a number of ways. It will be of most benefit to teachers who wish to implement a sustained sequence of activities following the inquiry stages identified on page 4 in Foundation – Year 2 in Technologies and in Science as stated in the Australian Curriculum.

Selecting activities

At each stage several activities are suggested from which you are encouraged to select the most appropriate for your purposes. Not all activities in each stage of the unit need to be used. Alternatively, you may add to or complement the suggested activities with ideas of your own.

It is suggested that teachers create a hyperlinked unit. Organise the digital resources for your class's use on a website or wiki or provide them on your interactive whiteboard.

Resourcing the unit

The resources suggested are on the whole, general rather than specific. Schools and the contexts in which they exist vary widely as does the availability of some resources – particularly in remote areas. There is a strong emphasis in the unit on gathering information and data, and research and observations feature strongly as these methods develop important skills and ensure that the exploration of the topics, are grounded in a relevant context.

Some YouTube and online videos in addition to Internet based resources are suggested in the unit. You will need to investigate what is available in your school.

Adapting the unit

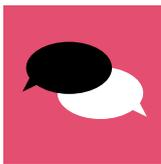
The unit is targeted at Foundation – Year 2 students. This is a suggested age range only and teachers are encouraged to modify activities to suit the needs of their students with whom they are working.

The unit's topics are based on content descriptions of the Australian Curriculum, on the key perspective of education for sustainability and embrace content that we believe is of relevance and significance to all students. We encourage you to explore ways in which the content can be adjusted to the context in which you are working.

Many of the activities contain the following icons offering a suggestion on how many students should be involved:



Suggested for individuals



Suggested for pairs or small groups



Suggested for larger groups or entire classes

Resource sheets are provided for some activities. Most are for photocopying and distribution to students.

They are identified within units by the following icon: **Resource 1.2**.

The resource sheets are designed to assist teachers to facilitate learning without necessarily having access to many other resources.

What about assessment?

Rather than being a task carried out at the end of the unit, assessment is viewed as integral to the entire unit sequence. Each activity should be regarded as a context for assessment of student learning.

When planning and implementing the unit of work make clear decisions on what you will focus on in assessing learning. The unit provides an opportunity for a range of **skills** and **understandings** to be observed. We encourage you to devise a simple assessment plan that features areas to be assessed over subsequent lessons.

In planning for assessment, student learning in the following areas can be considered:

- Understandings about the topic
- Development of skills
- Exploration and clarification of values
- Use of language in relation to content
- Ability to use a range of texts

- Ability to work cooperatively with others
- Approach to learning (independence, confidence, participation and enthusiasm).

For this unit, the following understandings are provided to assist teachers in planning for assessment.

By the end of this unit, students should understand:

- How plants and animals are grown for food and how food is selected and prepared for healthy eating (ACTDEK003)
- How humans manage these systems on farms
- The foods produced from pigs
- How people from different families and/or cultures cook different recipes using pork
- Living things have basic needs, including food and water (ACSSU002)
- Living things have a variety of external features (ACSSU211)
- Living things grow and change and have offspring similar to themselves (ACSSU030)
- Science involves asking questions about, and describing changes in, objects and events (ACSHE034).

Assessment strategies

Each stage in the inquiry sequence provides information about student learning. There are, however, two stages in the unit that are central to assessment: the **engage** stage and the **evaluate** stage. Work that is undertaken in these stages can assist teachers to monitor growth and see concrete examples of the way student ideas have been refined or changed through the unit sequence. Work samples should be retained for this purpose.

Some questions and possible answers

Should I do all the activities?

At each stage of a unit, a number of activities are listed. You would not be expected to do them all. Instead, the unit is designed so that a selection of activities can be made at each stage. You should select the activities according to the needs and interests of your students and the time, relevance to the existing school curriculum and resources available to you.

While you are encouraged to follow the suggested inquiry sequence for each unit, it is quite possible to pick and choose from the range of activity ideas throughout the unit. It may also be used in conjunction with other programs you use.

How do these units fit into my weekly program?

Although the unit integrates a range of key subject areas, it is not designed to be a total program. It is assumed that regular routines that operate in your classroom will continue to run alongside your unit of work. For example, you may have regular times for use of the library, for maths, physical education etc. These things don't change – although student's writing topics or choice of topics to research in the library or in ICT classes may be influenced by this unit.

How long should the unit run?

This will of course depend on your particular circumstances but generally, a few weeks to a term is suggested.

I don't know much about pork production myself – will I be able to teach it effectively?

Yes! The unit is designed in such a way that you, as the teacher are a co-learner and you are provided with teacher notes, plus the resources are mainly web-based and are readily available. Most importantly, you will find that you learn with the students and make discoveries with them.



Teacher fact sheet: facts and figures about the Australian pork industry

This page gives some basic food production information that may be helpful when you interact with the school students.

Pigs and the environment

The Australian pork industry is serious about environmental stewardship. The industry believes it has a duty to ensure that Australian pork is produced and distributed responsibly, while also remaining competitive and sustainable. The Australian pork industry has taken proactive steps to help ensure its producers carefully manage the nation's precious environment and resources. In efforts to reduce the industry's environmental footprint, ongoing industry research and development is focused on the continuous improvement of overall productivity, waste minimisation, pollution prevention and beneficial reuse of wastes.

Environmental issues pose both a challenge and opportunity for the Australian pork industry. The industry has tackled this challenge head-on and is making important progress in addressing these issues—especially in acknowledging and addressing greenhouse gas (GHG) emissions. The industry has become the first in Australia to have developed and approved a methodology for the government's Carbon Farming Initiative (CFI).

GHG emissions produced by the pork industry are significantly lower than other agricultural sectors, such as beef cattle, dairy cattle and sheep. Currently, the industry's emissions and potential mitigation options puts us in the position to have a low, if not the lowest, global warming potential for pork production worldwide. But we, as an industry, are striving to reduce this even further by setting an industry goal of *1 kg CO₂ per kg of pork produced*. Fortunately, most of the industry's GHG relate to emissions from effluent ponds. This provides us with a fantastic opportunity for emissions capture, destruction or use. Progressive industry research is developing innovative new technologies and management systems to mitigate and utilise these GHG emissions. Current research shows that a 500-sow piggery has the potential to produce enough energy to power 3.1 million 100 watt globes for one hour, or produce electricity to run 62 houses for one year. And if combusted and destroyed, it would eliminate the equivalent of the fossil fuel GHG emissions from 458 Toyota Corollas travelling 20,000km/per year burning 7L/100km.

As well as GHG emissions, the industry is also proactively addressing many other environmental issues, such as nutrient management, by-product reuse, alternative waste management and soil health.

Pigs and food safety

The health of the Australian pig herd is free from many serious diseases afflicting other pork producing countries. This is why product integrity continues to be one of the most important aspects of Australian pork production. The industry has quickly responded to growing consumer demand for top quality produce that is safe to eat. The Australian Pork Industry Quality Assurance Program (APIQ[✓][®]) is an on-farm quality assurance program that allows producers to demonstrate good farming practice using the principles of Hazard Analysis and managing Critical Control Points for management, food safety, animal welfare, biosecurity and traceability. Rapid uptake of APIQ[✓][®] by producers throughout Australia has reached 86% of the national herd, and is increasing.

Australia's pork industry is also leading the world to ensure its pork products are fully traced from paddock to plate. This has been realised through traceability systems (PigPass National Vendor Declaration—NVD). The PigPass NVD provides key information that can be used to trace pigs or pork back to the property of origin in the event of an emergency, such as an animal disease outbreak or a food safety incident.

Looking after our pigs – we're leading the world

Australian pig producers have the same concerns you do when it comes to taking care of their pigs. To demonstrate that they are listening to consumer sentiment, in November 2010 the industry announced the voluntary phase-out of sow stalls by 2017. Australia's pork farmers are the first in the world to make such a voluntary commitment.

Producers understand more than anyone that providing excellent care results in a contented animal that provides a high quality product—pig producers' livelihoods depend on it. The industry invests millions of dollars each year to research new technologies and practices to improve pig welfare, and provide valuable education and training to stock people throughout Australia.

The *Model Code of Practice for Welfare of Animals (Pigs)*—(the Model Code)—is a guide that has been developed in consultation with all levels of industry, regulators, RSPCA and scientists to detail the acceptable practice for the management of pigs. It outlines all responsibilities involved in caring for pigs—including their housing, food, water and special needs. Standards in the Model Code have been incorporated into APIQ[✓][®] and are independently audited each year to ensure producers comply.

How pigs are farmed

All pigs grown for pig meat are housed in different sized groups depending on their age and weight.

A sow raised for breeding will have her first litter when she's about one-year-old. The gestation period (the time from conception to birth) for a sow is between 15 and 17 weeks. She can have up to two litters each year and usually has between 9–10 piglets weaned per litter. The piglets feed from their mother for three to four weeks before being weaned and grouped with other pigs the same age in a weaner or grower facility.

Pigs are handfed on mostly grains and continue to grow until they reach between 24–55 kg and are sold as 'porkers'. Pigs that grow larger than 55 kg are sold as 'baconers'/'finishers'.

There are three main types of pig farming methods used in Australia—indoor housing, deep litter housing and outdoor bred/free range systems.

Indoor housing systems are for pigs from birth to weaning and for lactating and weaned sows. This system allows pigs of similar ages to be kept together. Group pens and individual pens are often used indoors.

Deep litter housing systems are usually large open-sided sheds or hoop-like structures with deep litter flooring (rice hulls, straw, sawdust). These systems are used extensively for growing pigs and for group housing of dry sows.

Outdoor bred/free range systems consist of outdoor paddocks, including rooting areas, wallows and shelter huts. The weaners, grower pigs and sows have access to paddocks at all times throughout their lives.

Gestation stalls: In November 2010, the industry overwhelmingly agreed that Australia would be the first nation in the world to voluntarily phase-out the use of sow stalls by 2017. This means sows and gilts must be kept in loose housing from five days after mating until one week before farrowing.

The reason producers have used sow stalls in the past is because pigs can be extremely aggressive animals, especially during the early stage of pregnancy. The best and safest way to ensure sows get enough food and aren't bullied, bitten and injured has been to protect them in individual stalls. Australian producers are now transitioning to a sow stall free status. To see the industry's progress go to www.australianpork.com.au

Farrowing stalls: The average sow weighs between 120–200 kg (equivalent to three standard fridges), and after farrowing, her new piglets are at serious risk of being crushed to death. A farrowing stall allows a sow to stand up, lie down and stretch out, while keeping her piglets safe in a separate section. The temporary use of a farrowing stall during the piglets' most vulnerable weeks plays a vital role in their protection. It's estimated that the use of farrowing stalls saves over a million piglets each year.

How to make sure you're buying Australian pork

All fresh pork sold in Australia is 100% Australian grown. However, 65% of processed pork (ham, bacon and smallgoods products) is made from frozen boneless pork imported from places like Denmark, Canada and the United States.

When buying Australian pork, look for one of three things:

- the packet label states 'Product of Australia'
- the bright pink Australian PorkMark logo
- the green Australian Grown kangaroo logo.

Or visit the Australian pork consumer website: www.pork.com.au and look for a butcher near you that sells Australian grown pork to make ham, bacon and smallgoods products.



Nutrients

Nutrition Information: Trimmed Lean Pork *	Quantity per 200g serving size	% Daily Intake per serving **
Energy (kJ)	930	11%
Protein (g)	46.6	93%
Total fat (g)	3.70	5%
% Recommended Dietary Intake (Aust/NZ) per serving		
Thiamine (mg)	1.95	178%
Niacin (mg)	18.5	185%
Vitamin B6 (mg)	1.01	63%
Vitamin B12 (µg)	0.69	35%
Zn Zinc (mg)	3.69	31%
Fe Iron (mg)	1.44	12%
Se Selenium (µg)	42.4	61%

DATA SOURCED FROM:

H. Greenfield, J. Arcot, J.A. Barnes, J. Cunningham, P. Adorno, T. Stobaus, R.K. Tume, S.L. Beilken, W.J. Muller. 2009. Nutrient composition of Australian retail pork cuts 2005/2006. *Food Chemistry* 117, 721–730.

A.J. Sinclair, S. Barone, T. Stobaus, R. Tume, S. Beilken, W. Müller, J. Cunningham, J.A. Barnes, H. Greenfield. 2010. Lipid composition of Australian pork cuts 2005/2006. *Food Chemistry* 121, 672–681.

* Trimmed Lean Pork is calculated using the numerical average of raw trimmed lean pork cuts (Loin Steak, Fillet, Rump Steak, Round Steak, Topside Steak, Silverside Steak, Diced Pork, Pork Strips, Loin Roast, Round Mini Roast and Loin Chop)

** Percentage Daily Intakes are based on an average adult diet of 8700 kJ. Your daily intakes may be higher or lower depending on your energy needs.

Bringing home the bacon

Did you know that pork is the most widely consumed meat in the world?

- Australia produces around 344,000 tonnes of pig meat every year. A little over 10% is exported to countries like Singapore, New Zealand and Hong Kong, and 25% is sold through restaurants and other food service outlets in Australia.
- Each year Australians consume around 23.5 kg of pork per person—this is made up of 8.5 kg of fresh pork and 15 kg of processed ham products such as bacon and smallgoods.
- During 2010–11, pork products accounted for around 10% of Australia's total fresh meat retail consumption and had a gross value of production (GVP) of more than \$882 million. (Source: Australian Bureau of Agriculture and Resource Economics, ABARE 2012)
- Australian farmers produce around 4.75 million pigs (forecast number of pigs produced to the end of June 2012) from a sow herd of around 261,000.
- The APL PigPass NVD Traceability database in March 2012 had over 2,200 pig producer registrants. However just over 1,500 producers could claim they derive an income from growing pigs.
- The main source of food for Australian pigs is grains such as wheat, barley and sorghum, resulting in a white fat around the outside of the meat. In contrast, corn or maize fed pigs grown in the northern hemisphere will produce a yellow coloured fat around the outside of the meat.



Crackling facts!

- Australia is the first nation in the world to introduce the voluntary phase-out of gestation stalls.
- Pork accounts for approximately 0.4% of the national greenhouse gas emissions – significantly lower than other agricultural sectors, including beef at 11.2%, sheep at 3.4%, and cattle at 2.7%. (Source: Garnaut, R 2008, The Garnaut climate change review— final report, available at www.garnautreview.org.au/index.htm)
- Whether housed indoors or outdoors, a pig spends more time resting than any other domestic animal.
- Most pig producers use the manure and effluent on their farms as an organic fertiliser to improve crops and pasture, or to capture methane gases to convert to electrical energy.
- Australia's pig herd health is one of the cleanest in the world, free from many detrimental diseases found in most other pig producing countries.
- The feed component (mainly grains such as wheat, barley and sorghum) makes up about 60% of the total cost of producing pork.
- Pigs have a very wide angle of vision (310 degrees) and are therefore easily distracted.
- On average, a sow will produce 10–12 piglets per litter.
- The average growth rate of Australian pigs is around 600–650 g a day from birth to sale.
- Pigs have colour vision but they can't focus both eyes on the same spot.
- Pigs are considered to be smarter than dogs and are easy to train. This characteristic helps producers develop safe handling routines.
- Grower pigs eat the equivalent of about 3% of their body weight and drink about 10% of their body weight, daily.
- Pigs are unable to perspire and they lose heat through their mouths. Their ideal growing temperature is 20–22°C.
- A pig which has nursed a litter is called a sow; a pig which has not nursed a litter is called a gilt.



Step 1: Engage with the topic

Getting started

Purpose

To provide students with opportunities to:

- Gather information about student's prior knowledge about farms, different types of animals raised and what they produce
- Pool ideas and share with others
- Assist students to organise the ideas they have about farming
- Develop skills in making connections between ideas
- Help set directions for an investigation
- Provide data for assessment purposes.

Pig farms

Whether living on an isolated island, in a rural town, coastal area or in the heart of a city, farms can be explored so that students develop an understanding of the places people live on and the animals that are raised and grown on these places.

Start with a story

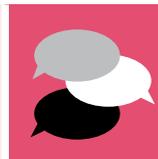


There are a number of children's picture books which could be used as springboards to explore aspects of farms. For example: *Hattie and the fox*, by M. Fox; *Charlotte's Web*, by E. B. Whiter; *The Very Important Pig*, by Dick King-Smith, or *Escape from Silver Street Farm*, by N. Davies.

Read stories for information about farms as places. Ask students to:

- Interpret illustrations
- Talk about what is happening and where it is happening
- Identify where characters are and discuss this
- Ask questions about places in the story
- Tell a story using picture clues
- Record favourite places in a story and write captions
- Talk about the natural, built and constructed features of farms in the story
- Classify natural, built and constructed features
- Make charts, friezes, models or drawings illustrating natural, built and constructed features and talk about students' creations describing the places and objects in them.

Use an e-book



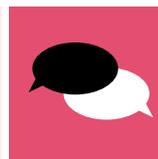
Read the illustrated e-Books '*Farm Animals*' and '*What we have on farms*' to introduce farms, the different types of animals raised there and what they produce.

View the covers, read aloud the titles and use clues from the covers and student's background knowledge to formulate predictions about how the stories might unfold.

Read the stories and engage students in visualising the characters and their environs.

See: www.envirostories.com.au/es2012/es2012_CW_FarmAnimals/index.html and www.envirostories.com.au/es2012/es2012_BRG_WhatHaveFarms/index.html

Immerse the students in the topic of farms



Formally ask the class questions that puzzle them or things they would like to find out about farms. Record the responses and display them, or establish a question box for students. Share students' questions and seek answers to them.

See the following YouTube videos:

- **Old Macdonald had a farm**
<http://bit.ly/1tDxkZy>
<http://bit.ly/1mM7lwA>
<http://bit.ly/1h2nnVk>
<http://bit.ly/1rFPONB>
- **Farm Animals**
<http://bit.ly/1127Fc9>
- **Farm Animal Sounds**
<http://bit.ly/1127TAc>



Brainstorm



Brainstorm ideas about how pigs are raised and grown and what they produce. List key words and create a flow chart to show links between them.

Personal responses



Find out what students now know about pig farms and what they produce. Encourage students to tell, write or draw their ideas. Display these for future reference.

Each group reports to the class, synthesising ideas collated by the class. Display responses around the classroom.

If questions emerge from this activity, record these and display them for reference throughout the unit.

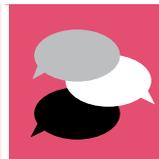
Setting the task



Explain to the class that their task will be to work in small groups to find out more about how pigs are raised and grown to produce food. Explain that each pair will observe videos and interactive learning objects, record and collect information about pigs and what pigs need to grow on a farm. Explain that each group will either, write and draw, record and video, or design and make a model of a pig farm accompanied by a text about how pigs are grown, raised and cared for on farms.

Explain that later in the unit, each student will also explore if their family uses food produced by pigs, how and for what purpose. Explain that each student will interview a family member to find out what pork products they eat and their favourite pork recipe.

Student groups



Introduce students to a range of roles they can consider undertaking for their task.

Groups can include:

- **An Investigator** – this role requires asking questions, finding information, solving problems. It involves looking into the past, learning about people and learning about the environment.
- **A Recorder** – this role requires noting lots of information, recording ideas, recording sources used and keeping lots of records about the investigation.
- **An IT Person** – this role requires good computer skills, respecting yourself and others online, respecting other people's information online and keeping records about online sources being used.
- **An Artist** – this role requires creative thinkers who can communicate their findings using art, photography, music or role play.
- **A Story Teller** – this role requires telling stories and writing them down.
- **A Builder** – this role designing and constructing things, both inside and out. Builders use lots of tools and materials to make things. They often also write explanations of what they have designed and its components.

Explore the Task Sheet in **Resource 1.1** with the students.

Assessment note

Learning logs are useful for assessment purposes. Students could complete an entry at the beginning of the unit and then revisit it during and at the end of the unit to demonstrate their changed understandings.

At the end of the activities invite students to write/scribe comments and questions about their task using a table like the one below:

What I know	What I'm not sure about	What I want to know

Step 2: Explore pigs

Explore information about pigs and pig farms

Purpose

To provide students with opportunities to develop their understanding of:

- Pigs, what they eat, where they live
- Where our pork meat comes from
- How pig farmers raise and house their animals in different ways
- The foods produced from pigs
- What happens from the food grown on farms to our fork
- A focus for the forthcoming experiences in the 'Explain' stage of the inquiry.

Introduce students to the concepts about ways farmers raise and grow their pigs.

Research Task:

Part 1 – Investigate pigs and pig farms



Re-state to the class that they will be using websites containing videos and learning objects about pig farms to develop an understanding of:

- Pigs
- How pigs are raised, housed and grown to produce food.

View resources



Explain to the students that their task is to start researching. Invite students in their groups to:

- Form their research circle in their groups
- Read their Task Sheet
- Start their research and view up to six resources explaining how pig farmers produce pigs. Ask students to record information in their chosen way about the information they find.

See **Resource 1.1** to support student investigations.

Ask groups to view the following videos and record information for each one.

Video 1

Title: Farm Piggies

Link: www.kidcyber.com.au/topics/farmpiggies.htm

Video 2

Title: Visit Farmer Bob's Farm

Link: www2.ca.uky.edu/agripedia/agmania/visit

Video 3

Title: Aussie Pig Farmers – Types of farming – Free range

Link: www.aussiepigfarmers.com.au/types-of-farming/free-range

Video 4

Title: Aussie Pig Farmers – Types of housing – Intensive indoor

Link: www.aussiepigfarmers.com.au/types-of-farming/indoor-intensive-housing

Video 5

Title: Check out a pig farm in Canada

Link: www.virtualfarmtours.ca/en/pigFarms/index.html

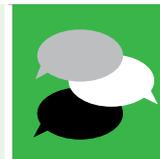
Video 6

Title: Find out about farm animals

Link: www.animalbehaviour.net/KidsPages/FarmAnimals.htm



Framing questions and actions



Encourage the students to refine their questions and clarify how their investigations will be conducted. For example:

In pairs, formulate possible lines of inquiry or investigation by:

- Listing and categorising all information related to their investigation under headings – pig types; pig farms; pig's diets; pig's homes; pig's needs; pig products
- Preparing a table to outline information that still needs to be gathered, who is responsible, and where they will seek information, how it will be gathered.

Re-state that each group of students will write and draw, or record and video or design and make a model of a pig farm accompanied by a text about how pigs are grown, raised and cared for on farms. Invite students to make a creation using concrete materials or computers to show how pigs are grown, raised and cared for on farms.

Invite students to add information to their table about how they will make their creation and what they need to do so.

Where our pork meat comes from



As a class view and play a section of the interactive learning object 'Where do my meals come from?'

See: www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=174

In groups play both versions (i.e. game for 5–8 year olds and 8–11 year olds).

After playing the games talk about where bacon at breakfast time might come from...where ham in your sandwich might come from...where a pork steak, crackling, chop or sausage might come from.

Imagine a roast pork dinner, with potatoes, peas, carrots and beans. Think about the steps needed to get each of these food items. Consider a pork steak and salad, with lettuce, onions, tomato, carrots and herbs. Think about the steps needed to get each of these food items.

Play the 'Farm to Fork Challenge' at www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=176

Find the correct stages for ham. Play both versions (i.e. game for 5–8 year olds and 8–11 year olds). Consider pork sausages what are the stages in their production. Draw these. Consider bacon at breakfast time. What are the stages in its production? Draw these steps.



Step 3: Explain how pigs are raised and grown and interview others about their uses of pork

Purpose

To provide students with opportunities to:

- Describe how pigs are grown, raised and cared for on farms
- Explore if their family uses food produced by pigs
- Gather information about the topic
- Develop skills of formulating questions and gathering data
- Develop communication skills: oral language and active listening
- Develop the understanding of how we can learn from others
- Develop a storyboard.

Approaches to growing, raising and caring for pigs

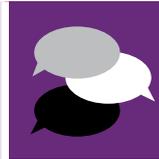


Using the information gathered, each group prepares a presentation with their creation, explaining how pigs are grown, raised and cared for on farms.

Encourage students to use their creation as part of their presentation.



Research Task: Part 2 – Investigate pigs and what they produce



Explain to the students that they will be exploring if their family uses food produced by pigs, how and for what purpose. Explain that each student will interview a family member to find out what pork products they eat and their favourite pork recipe.

Invite students to use the record sheet in **Resource 1.2**.

Interviews



Ask students what they know about interviews and what they are used for:

View or listen to various interviews from television, radio, podcasts or YouTube videos. Ask students:

- What is the role of the interviewer?
- What was the role of the interviewee?
- How do you think they both felt?
- What information was the interviewer trying to gather?
- How effective were the questions?

Ask students to draft a range of questions they might use to interview family members about the pork products they eat and their favourite pork recipe.

Invite students to practice interviewing each other:

Rehearse introductions and explanations. Ask questions like:

- How can we make the person feel at ease?
- How should we thank them?
- How will we record the information?

Encourage students to brainstorm ways that they might present and communicate their interview findings.



Rack of Pork Roast rind on

Recipe Name: Roasted Rack of Pork with Caramelised baby onions

Serves: 4 - 6

INGREDIENTS	Quantity	Ingredient
	1 x 5-6 rib	pork loin rack
	1 tblsp	oil
		Flakes salt
	20	pickling onions, peeled and trimmed
	10 g	pickling spice
	1 Litre	apple cider vinegar
	500 g	castor sugar
	2 sprigs	thyme

Rack of Pork Roast rind on

Method (Pre-heat oven to 220°C)

1. Score pork rind thinly with a sharp knife or Stanley knife.
2. Rub surface with oil and dust with salt. Allow to stand for 10 minutes.
3. Place pork in a baking dish rind side up in the pre-heated oven at 220°C for 20 minutes.
4. Reduce oven temperature to 180°C for 25 minutes per 500 g (around 50 minutes). Remove and rest for 10 minutes prior to serving.
5. Place onions in a large saucepan with the pickling spice and vinegar. Bring to the boil. Remove onions and set aside.
6. Add the sugar and thyme to the liquid and stir until sugar is dissolved. Bring to the boil and boil until liquid is reduced by half. Reduce heat and return the onions to the pan.
7. Continue to cook until mixture turns golden. Remove from heat.
8. Slice pork and serve with caramelised onions. Garnish with thyme sprigs.

onions may be replaced with baby beetroots for a delicious difference.

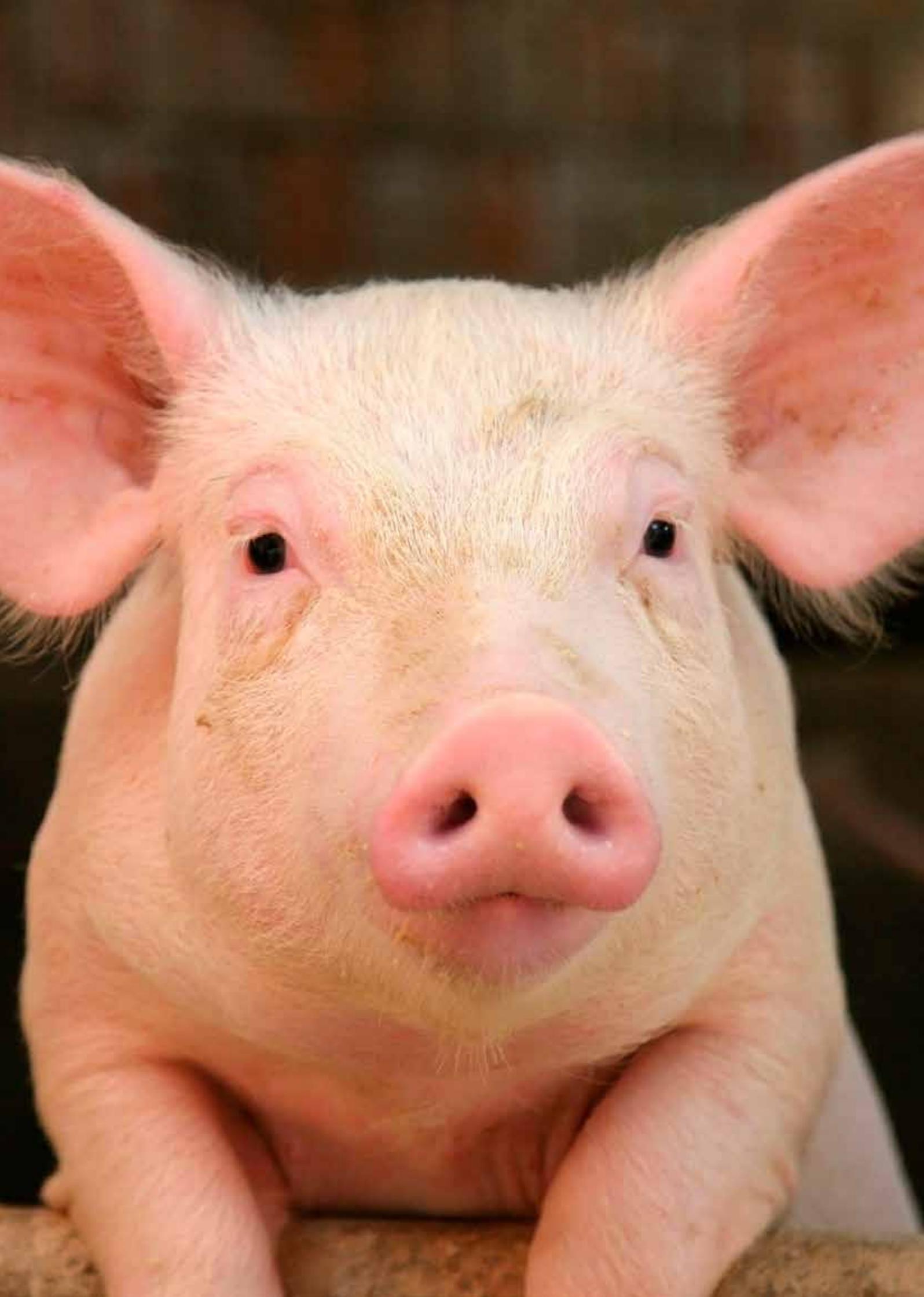
Decide on what to present and how to do so



Re-state the purposes of the interview and ask students to consider how they are going to bring their information together and present it so that the main points come across clearly. Model the construction of video and slideshow tools. Students now use the information they have gathered to construct a video or slideshow for the research being undertaken.

See: <http://cooltoolsforschools.wikispaces.com> for ideas.

Some students may choose a low-tech or no-tech option and write a recount of the interview, photograph the pork products used by the family and copy the family's favourite recipe.



Step 4: Elaborate on concepts and ideas

Presentation planning

Purpose

To provide students with opportunities to:

- Share if their family uses food produced by pigs
- Apply what they have learned and communicate the foods used and the family members favourite pork recipe
- Plan their presentation
- Share investigation findings.

Working with the data gathered from the interviews



A number of strategies can be used to help students make sense of the information the class as a whole has gathered. Some suggestions are:

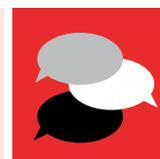
- Prepare graphs and collate the class information about the pork products most eaten and liked
- Prepare a report to include in the school newsletter
- Compile a class e-Book of recipes based on the information gathered by the class

Email Australian Pork Limited and tell them about the favourite recipes.

E: marketing@australianpork.com.au

As interviews are being processed, it is important to make explicit that the information has been told from one person's perspective and that many people like different pork recipes and some may not like to eat pork or even meat.

Going further with the planning of the presentation



Invite students to confirm the idea planned for their video or slideshow presentation.

Ask students to create a final plan for completing the presentation. Students may need to document their key messages, create an image bank and collate references and acknowledgements for their work sample. Invite them to summarise these and the learning achieved in a journal log or reflection.

Review and submit



Invite students to revise and fine-tune their presentation of the pork foods used in the family and their favourite pork recipe.

Consider hosting a 'Community Show & Tell' to showcase the students' work to the school community and beyond.

Or hold a tasting party!!



Step 5: Evaluating

Think back and evaluate



Purpose

To provide students with opportunities to:

- Reflect on their own learning
- Provide a source of data for assessment.

To provide teachers with:

- Insights into students' understandings and attitudes, as well as their perceptions of their own strengths and weaknesses.

Reflective writing



Begin by modelling reflective writing through a whole class learning log. Alternatively, you could model your own entry 'thinking aloud' as you write.

Provide students with a set of focus questions for their writing:

- Write about something new you learnt in this unit about ways pig farmers are growing, raising and caring for their pigs
- What is one thing I have learned about my own values when it comes to farming?
- How might I help others know more about how pig farmers produce pigs and pork products?
- What have I learned about pigs?
- What have I learned about the ways pigs are housed?
- What would still like to find out about pig farming?
- How well did I/we participate in any group/team learning activities?
- What questions do you have about the topic at the moment?
- What piece of work am I most satisfied with?

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- Gardner, H. (1985) *Frames of Mind: the theory of multiple intelligences*, Basic Books, New York.
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- Hill, S. And Hill, T. (1990) *The Collaborative Classroom*, Eleanor Curtin, Melbourne.
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Websites (viewed January 2014)

Animal Behaviour.net

<http://animalbehaviour.net/KidsPages/FarmAnimals.htm>

Aussie Pig Farmers

www.aussiepigfarmers.com.au/types-of-farming/free-range

www.aussiepigfarmers.com.au/types-of-farming/indoor-intensive-housing

Cool Tools for Schools

<http://cooltoolsforschools.wikispaces.com>

Envirostories

www.envirostories.com.au/es2012/es2012_CW_FarmAnimals/index.html

www.envirostories.com.au/es2012/es2012_BRG_WhatHaveFarms/index.html

Farm Piggies

www.kidcyber.com.au/topics/farmpiggies.htm

Food a Fact of Life

www.foodafactoflife.org.uk/Activity.aspx?siteId=13§ionId=54&contentId=174

The Garnaut Climate Change Review

www.garnautreview.org.au/index.htm

Virtual Farm Tours

www.virtualfarmtours.ca/en/pigFarms/index.html

Visit Farmer Bob's Farm

www2.ca.uky.edu/agripedia/agmania/visit

YouTube videos

www.youtube.com/watch?v=rfox_72Coc&feature=kp

www.youtube.com/watch?annotation_id=annotation_205468&feature=iv&index=13&list=PLC94256E76C3340DD&src_vid=gkAsTg7Qvyw&v=p00B_IDND4k

www.youtube.com/watch?v=mSchoyVzH8c

www.youtube.com/watch?v=xjCAmKyMrPI

www.youtube.com/watch?v=f77KjedQ5Ug

www.youtube.com/watch?v=gkAsTg7Qvyw



Resource pages

Resource 1.1

Task record sheet 1

Every project task needs some record keeping.

Using the table below keep:

- A record of your role in the group
- Your task,
- Your sources, ideas and information.

Your name:

Group task: Work in small groups to find out more about how pigs are raised and grown to produce food.

Collect information about pigs and what pigs need to grow on a farm.

Write or draw, or record and video, or design and make a model of a pig farm accompanied by a text about how pigs are grown, raised and cared for on farms.

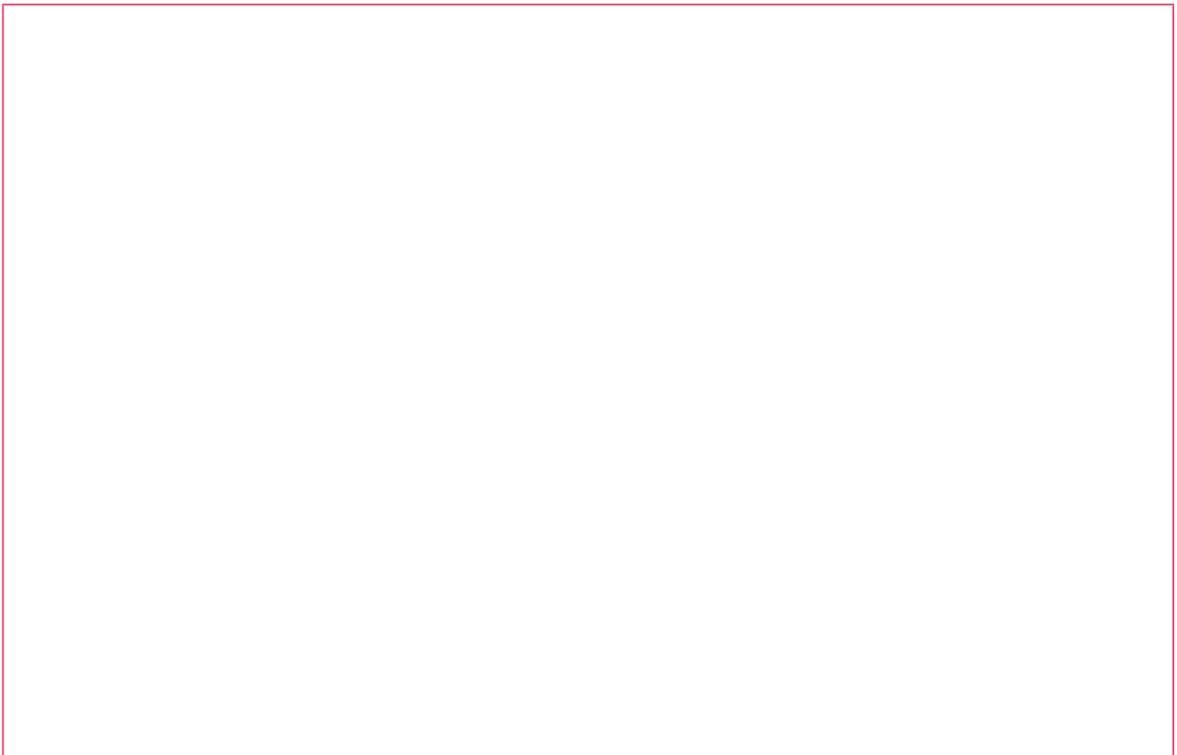
My tasks and role(s)

My first task	My role
My next task	My role
My next task	My role
My next task	My role

Keywords



List of resources



Video 1

Title of the video	
Video link	
The information I found most useful	

Video 2

Title of the video	
Video link	
The information I found most useful	

Video 3

Title of the video	
Video link	
The information I found most useful	

Video 4

Title of the video	
Video link	
The information I found most useful	

Video 5

Title of the video	
Video link	
The information I found most useful	

Video 6

Title of the video	
Video link	
The information I found most useful	

Information I think is important

My plan of how to do the task

Resource 1.2

Task record sheet 2 – What do I know?

Your name:

My tasks: Find out if your family uses food produced by pigs, how and for what purpose.

Interview a family member to find this out what pork products they eat and their favourite pork recipe.

Write a sentence or two about what you know about each of the following:

What foods produced by pigs is used by the family?	Foods used are...
How might foods produced by pigs be used by the family?	My family...

What are some of the different meals, recipes or celebrations you know that include foods produced by pigs?

Some meals I know...

Some recipes I know...

Some celebrations I know...

My record of interview

My interview questions

My record of the interview about what pork products are eaten at home

My family's favourite recipe

Title:

Ingredients:

How to prepare and make the recipe

Step 1:

Step 2:

Step 3:

Step 4:

Add more steps as you need!

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