

Planning a Pig Farm Visit

Teacher Resource Pack



Acknowledgements

This educational resource was produced by Australian Pork Limited (APL) in conjunction with the Primary Industries Education Foundation Australia (PIEFA).

The resource is designed to introduce young people to pork production in Australia. Whilst not an exhaustive educational resource, it is intended to raise the awareness of school-aged students about the sustainable resource management practices in pork production in Australia, supports investigations of the past and present and includes investigating a range of futures for intensive livestock industries, like pig farming.

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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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Notes for APL and Pig Farmers

It is suggested that the Teacher Notes and Resource package activities are emailed to your visiting school at the time they express interest in visiting a pig farm.

Notes for Teachers

It is suggested that the Teacher Notes and Pre-Visit activities are undertaken at school at least two weeks prior to your visit to an actual pig farm. After the visit, follow up and undertake the suggested Post-Visit activities contained within this resource pack.

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Teacher Notes – Farm Visits

Pig farm visits are all about bringing schools and industry together. The program will give you and your students a rare insight into an important Australian primary industry - the pork industry - and an opportunity to learn from those who know it best: the people who work in it.

Through a visit to a pig farm, your students will gain an understanding of how knowledge learned in the classroom (e.g. Design and Technologies and Science) can be applied in a real-life setting, by real-life workers.

This resource pack will introduce you to pig farming and the operation of an Australian pig farm.

During your visit to a pig farm you will experience the stages involved in raising and caring for pigs before their sale.

The teacher and student notes in this resource provide information for teachers and students on the issues or topics that can inform your visit.

This resource pack and the farm visit are aligned to the new Australian curriculum. The activities (class visits, excursion etc) are linked to curriculum content and learning outcomes in a number of key learning areas, particularly Design and Technology and Science. Key cross curricular concepts are also addressed including Numeracy, Literacy, ICT, Ethical understandings and Sustainability. Our activities are also strongly linked to the cross-curriculum priority of Sustainability.

Please see the '*Curriculum links*' document at the rear of this resource for detailed information about curriculum links.

The farm visit and biosecurity

On arrival at a pig farm your group will be met by a farmer who operates this farm. The farmer will orient the group in relation to the operations of the farm and its role in growing the pigs that provide pork to local markets, retailers, restaurants and butchers.

The farmer will also and most importantly talk about important procedures used when any visitor comes to the farm to help reduce the risk of disease entering their property.

To assist in limiting the movement of any diseases all visitors on arrival will be asked to:

- Wash their hands at the entrance of the farm
- Change into supplied farm boots and clothes.

Some farms may require students to shower depending on site. Note that this would be advised prior to visit.

Note, due to biosecurity considerations, any students with colds or flu-like symptoms are unable to be in contact with pigs until fully recovered. Similarly, any student who has recently travelled overseas or been in contact with other pigs may be unable to visit Australian pig farms.

Please remember that the pig farm is a large facility, and as with any other agricultural facility there are various occupational health & safety (OH & S) instructions that must be followed. Students must always stay with their group and obey all instructions given by farm personnel and accompanying teachers.

We trust you will enjoy your visit!

School visits

It is essential to contact Australian Pork Limited in advance of your school visit. This will ensure that:

- Several groups do not come at the same time
- Activities are coordinated and relevant to students' learning
- Accurate statistics on school use and demand can be gathered to further develop activities and resources for students and teachers
- Teachers are confident about the location and activities.

Further information and contacts

For more information about visits to pig farms please contact:

Rachael Bryant
(02) 6270 8823
rachael.bryant@australianpork.com.au

or write to:

Australian Pork Limited
PO Box 4746
Kingston ACT 42604



About the education programs

Lots can be seen and learnt on a pig farm. Most begin with an introduction to the area and its facilities.

The farm will have a staff member to facilitate the visit. They are able to provide an introduction upon arrival and an orientation prior to specific activities and assist teachers and students learn more about how pigs are raised and grown on the farm.

Supervision of the students is the responsibility of the teacher. Teachers have the duty of care whilst on the visit. Teachers may bring an extra teacher or parent to assist with supervision as required.

To make the most of your visit, students should be encouraged to ask lots of questions and swap ideas. Students who are well prepared will benefit most from their farm visit therefore it is suggested that teachers use the activities within this resource as a guide for pre-visit preparation.

Note: Industry terms used in this document and by the pork industry can be found in Appendix C.

What else do visitors need to know?

Transport?

There is vehicle access to the farm complex for safe loading and unloading of passengers.

Toilets?

Toilets are located within the farm complex.

What to bring?

Remember to wear comfortable clothing and footwear. It is essential to wear enclosed footwear. Please bring your own water, recess and lunch supplies.

Wheelchair access?

Some areas of the farm may cater for wheelchairs. It is recommended that this is coordinated prior to the school visit.

Where do we meet?

Groups should arrive and wait outside the main entrance allowing access for other staff or visitors, until a member of staff can provide further instructions.

Are there any rules?

- Teachers are asked to collect mobile phones and tablets before the visit and return phones post the visit. Cameras are not permitted however, the farm staff will be more than happy to take a group photo and send it back to the school.
- Walk and talk quietly to be considerate of other visitors, staff and the pigs.
- Closed footwear is essential and note visitors will be provided with plastic shoe covers, overalls and gloves that must be worn during the visit.
- Pigs must not be fed by the students.
- Pigs can only be touched if invited to do so by the staff at the farm.
- If visiting a farrowing house, note that it is the 'maternity ward' on the farm and may therefore be darkened and students will need to be very quiet so as to not disturb the baby piglets.
- All visitors are required to understand the biosecurity practices of the farm to protect the health of the pigs. These procedures are designed to reduce the risk of diseases entering a property or being passed through to the pigs.
See: www.farmbiosecurity.com.au/industry/pigs
- Ask lots of questions!

What do teachers do during the sessions?

Your students are your responsibility. Please ensure that students are adequately supervised and aware of farm rules (including no mobile phone or tablet policy). Encourage an inquiry-based approach to your session; again it is important that your students have an appropriate amount of background knowledge regarding the pig industry. You will be assisting in practical and observation activities and will have valuable input into group discussion – you know your students better than we do!

Cancellation Policy

Programs are heavily booked. If you need to cancel, please telephone the pig farm and producer in a timely manner.

Teacher Notes – Pig Farming

This page gives some basic information that may be helpful when you share information about pig farming with the school students.

The Pork Industry

- Australia produces around 367,000 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. (*Figures current as at early 2015*).
- Each year Australians consume around 24.2 kg of pork per person—this is made up of 9.2 kg of fresh pork and 15 kg of processed products such as bacon, ham and smallgoods. (*Figures based on information supplied September 2014*)
- During 2014-15, pork products accounted for just over 10% of Australia's total fresh meat retail consumption and had a gross value of production (GVP) of more than \$1 137 million. (Source: ABARES, Agricultural Commodities March 2015).
- Australian farmers produce around 4.85 million pigs a year (forecast number of pigs produced to the end of June 2015) from a sow herd of around 267,000 in June 2015.
- The APL PigPass NVD Traceability database in November 2014 had over 2,100 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 is cereal grains such as wheat, barley and sorghum, resulting in a white fat around the outside of the meat.



- The Australian pork industry has taken a world-leading position by voluntarily committing to phase out the use of sow stalls, meaning that sows will not be confined in sow stalls from five days after they are last mated until one week before farrowing, when they are moved into farrowing (birthing) accommodation. At the beginning of 2015, 69% of Australia's sow herd is now housed in this manner.
- Pork accounts for approximately 0.4% of the national greenhouse gas emissions – significantly lower than other agricultural sectors, including beef at 11.2% and sheep at 3.4%. (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.
- Pig producers use the manure and effluent of their farms as a fertiliser to improve crops and pasture, or to capture methane gases to convert to energy.
- Numerous pig producers are now using their manure to generate electricity to power their whole farm.
- Australia's pig herd health is one of the best in the world, free from many 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.
- On average, a sow will produce 10–14 piglets per litter.
- The average growth rate of Australian pigs is around 600–650 grams a day from birth to sale.
- Grower pigs eat the equivalent of about 3% of their body weight and drink about 10% of their body weight, daily.
- Pigs are considered to be smarter than dogs and are easy to train. This characteristic helps producers develop safe handling routines.
- Pigs are unable to perspire and they lose heat through their mouths. The ideal growing temperature for older pigs is 20–22°C.

Source: Australian Pork Limited <http://australianpork.com.au>

Teacher & Student Notes – Pig Facts

Where and when did farmers start raising pigs?

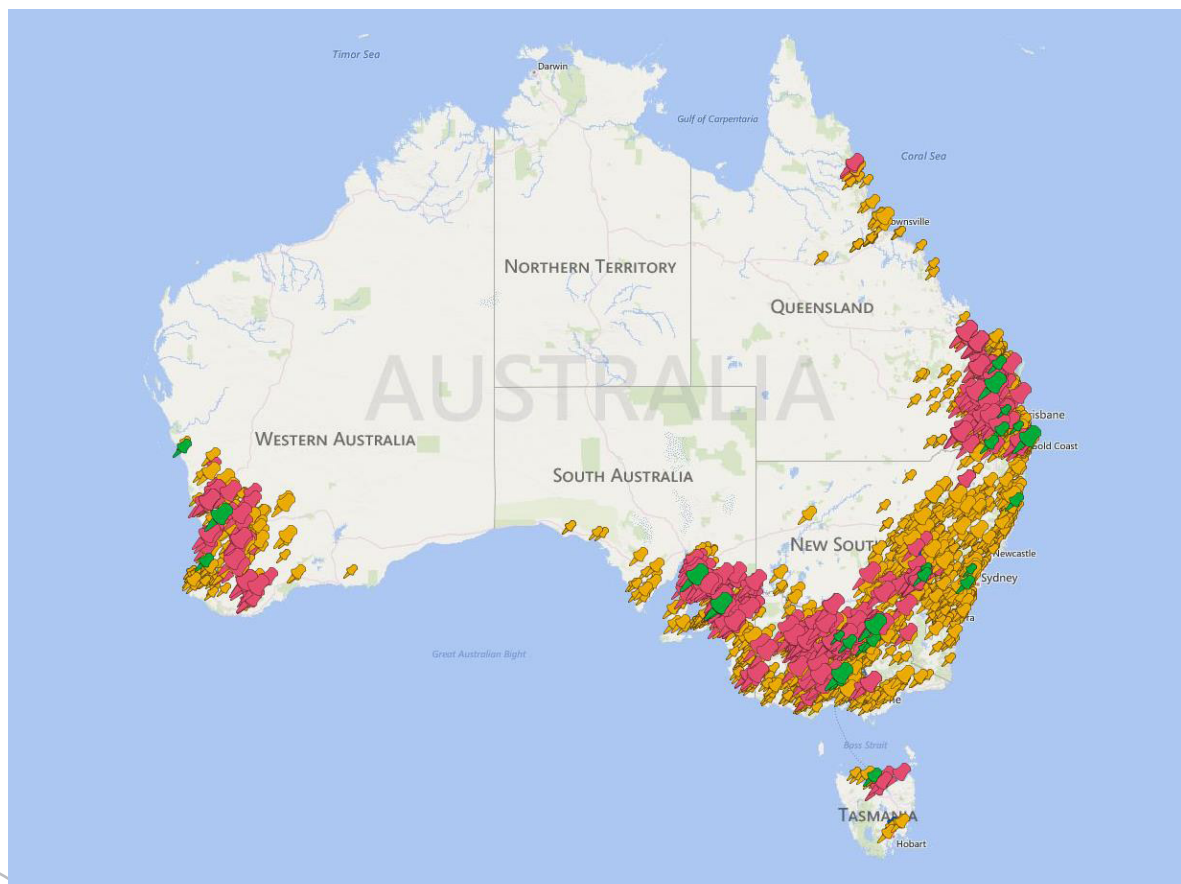
Research indicates that pigs were first raised by humans about 12,000 years ago (10,000 BC). They were one of the first animals domesticated by humans (after the dog). Evidence of this has been found in the Jordan valley and many parts of Europe.

Where are pigs raised in Australia today?

Although small by world standards, the pig industry in Australia is well organised and is one of the most efficient primary industries. Pigs are raised in each state of Australia but where they are actually located depends upon how close feed sources and points of sale are, as well as the climate of the region.

This is a map of where piggeries are located in Australia. As a key, the bigger the pin, the bigger the piggery.

- Pink pins are piggeries that are APIQ✓[®] accredited
- Yellow pins are piggeries that are not APIQ✓[®] accredited
- Green pins are abattoirs.



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 3 months, 3 weeks and 3 days. She can have up to two litters each year and usually has between 10–14 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 hand fed on mostly grains and continue to grow until they reach between 24–55 kg and are sold as 'porkers'. Pigs that grow larger than 55–110 kg are sold as 'baconers'/'finishers'.

A range of pig farming methods are used in Australia—indoor housing, deep litter housing, outdoor bred and free range systems.

Indoor housing systems are for pigs from birth to sale 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.





Free range systems consist of outdoor paddocks, including rooting areas, wallows and shelter huts. The weaners, grower pigs and sows all have access to paddocks at all times throughout their lives. The paddocks must be rotated with a crop-forage-pasture phase.

Outdoor bred systems are where adult breeding sows live in open spaces with free access to paddocks for their entire adult life. Piglets are born and raised under these conditions until weaning when they are moved to grow out housing. The paddocks must be rotated with a crop-forage-pasture phase.

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 water 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.

Piglet Protection Pens: The average sow weighs between 120–300 kg (equivalent to three standard fridges), and after farrowing, her new piglets are at serious risk of being crushed to death. A piglet protection pen allows a sow to stand up, lie down and stretch out, while keeping her piglets safe and warm in a separate section. The temporary use of a piglet protection pen during the piglets' most vulnerable weeks plays a vital role in their protection. It's estimated that the use of piglet protection pens save over a million piglets each year.

How long does it take to produce a pig for sale?

Pigs are hand fed on mostly grains and continue to grow until they reach between 24–55kg and are sold as 'porkers'. Pigs that are sold between 55–110kg are known as 'baconers/ finishers' – most pigs are sold between 80–100kg. It usually takes between 18–20 weeks for a pig to reach 100kg.

Pre-Visit Activities for Teachers (Primary)

These suggested activities could introduce primary school students to pig farming in Australia.

Pigs

Talk about pigs. Find out what students know about them and record their ideas.

Ask students to record what they think pigs look like; what covers their body; what shape they are; what other features they have; whether they have curly tails; why many tails are docked; what sounds do they make; what colours can they be?

View the ABC Education video titled 'A pig in high heels'

See: <http://splash.abc.net.au/media/-/m/1226927/a-pig-in-high-heels>

Talk about this particular pig called Trotsky and ask students whether they might now use different words to describe a pig. What new words might be used to describe pigs? Record these.

Create a four part display. Title the four parts 'What we know about pigs'. 'What we want to find out', 'What the class now knows' and 'What other things we would like to find out'. Use 'What we know' as a source for class sharing.

Stimulate thinking by focussing on pertinent, challenging, topical and interesting aspects about pigs that could assist students to ask questions and develop explanations.

For example:

- How are pigs raised?
- How are pigs farmed?
- Where are pigs farmed in Australia?
- Do school farms have pigs?

Fictional pigs

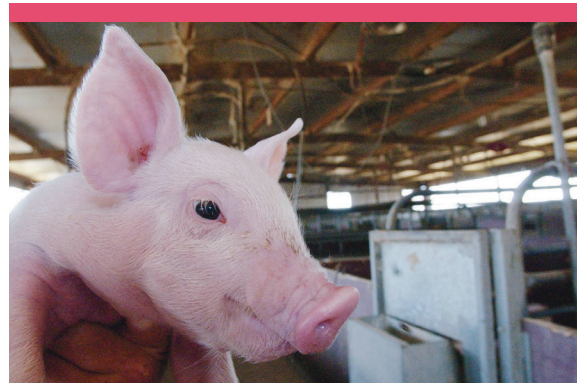
Brainstorm the names of fictional pigs that have featured in books, television shows, computer games, rhymes and movies. For example: Babe, Peppa Pig, Miss Piggy, Charlotte's Web, The Three Pigs etc.

Talk about how fictional pig characters have captured the fascination of children worldwide and discuss why this might be so.

Ask questions like: What are the characteristics and features of fictional pigs that might make them so appealing to children?

Photo stories

Share the following images of pigs with your students on an electronic whiteboard and ask them to write three words they would use to describe the pigs featured. See Appendix A for a handout with these images too.



Talk with the students about how people have different perceptions about pigs. Some think they are all pink, others understand there are a variety of breeds with different colours.

Some people think pigs have curly tails when in fact their tails are quite straight. Some think they are dirty and smelly however they are one of the cleanest animals.

As a class, discuss the power of words and how they are used to evoke reactions, emotions and feelings. Ask students questions like:

- What three words would you use to describe pigs?
- How might you describe where they are farmed and raised?
- What do the words 'piglet', 'sow', 'weaner', 'baconer' and 'finisher' mean to you?
- What words could you use to describe baby pigs, female pigs, male pigs and pigs ready for market?

As a class, complete a 'Y chart' where students contribute words to describe what the collection of pigs featured in the photos might look like, feel like and taste like.

Pre-Visit Activities for Teachers (Upper Primary and Secondary)

View videos

View a video produced by the Primary Industries Education Foundation Australia titled 'Farm Diaries' and 'Housing pigs...different approaches'.

See: www.youtube.com/watch?v=d_2M0ILVWpE and www.youtube.com/watch?v=D9DdEildTWg

Listen to Alastair Johnson talk about his pig farm in South Australia.

Alastair introduces new terms like 'sows', 'piglets', 'weaners' and 'baconers'.

Talk about a 'sow' being a mother pig; piglets being baby pigs; a 'baconer' is a large pig.

Replay the video and ask students to record words they are unfamiliar with. For example: gestation cycle, growers, feed conversion, etc.

Ask students to create simple graphic representations – in the manner of a road sign to represent each term.

Replay the videos and focus on questions like:

- Where are the pigs raised?
- How are the pigs fed and watered?
- How are the pigs kept in good health?
- What are pig farmers like Alastair doing to maintain or improve their pig's way of life?
- What might it mean to describe pig farms as 'productive'?

An overview of pig farming

Ask students to develop a concept map describing what they know about pig farming, what it is, what it comprises, and who produces pigs. Share with students some facts about pig farming as is currently understood.

Refer to pages 7–11 of this resource pack for support material.

Pig farming and production

Pig farming and production occurs in approximately 2,800 farms spread across all states of Australia, with the highest proportion of producers located around the grain, sorghum or maize growing regions.

Brainstorm what is known about pig farming and production. Consider questions like:

- 'What do we understand about pig farming and production?'
- 'Is pig farming a primary industry?'
- 'What have we heard about pig farming in the media or from scientists, friends or family members?'

Display brainstorm lists around the classroom. If questions emerge from this activity, record these and display them for reference throughout the unit.

Talk about where students think pig farms are located in Australia. See page 9 of this booklet for a detailed map showing the location of different sized piggeries.

Source: Changing conditions in the pig industry. An Educational unit for Secondary Schools, APL, page 19.

Different types of pig farms

Explain to the class that there are different types of pig farms.

Conventional piggeries usually house their animals in specialised sheds for the duration of their life. For example, 50% of Australia's pigs are raised in deep litter housing systems. These sheds tend to use passive end-to-end ventilation systems, allowing appropriate heating and cooling options, with some having cross-flow ventilation options.

Free range piggeries run their animals in paddocks that have rooting areas, wallows, and huts for shelter. The huts allow the pigs to seek shelter from environmental extremes. They also provide additional protection for the piglets whilst they are very young. The weaners, growers, and sows, from which they have been bred, have access to paddocks at all times for their entire life.

Conventional piggeries typically house pigs within steel or timber framed sheds with corrugated iron or sandwich panel roofing and walls with nylon curtains or shutters depending on the ventilation system. Conventional sheds have a concrete base, often with concrete under-floor effluent collection pits or channels. These are regularly flushed or drained to remove effluent from the sheds.

Find out what students might already know about the types of housing used for pigs on Australian farms.

View videos

Explain to the students that their task is to start researching how pigs are farmed, raised and produced before actually visiting a pig farm.

Invite students in pairs to initiate their research and view videos explaining how pig farmers produce pigs and the systems they use.

Ask students to record information about each source used, together with a description of how useful the systems used by the pig farmers might be.

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

Video 1

Title: Aussie Farmers – Types of Farming- Indoor Intensive Housing

Abstract: This is a video explaining how one family produces pigs indoors in a dynamic and environmentally conscious system. It includes sections on pig production; effluent management and the health and welfare of the animals and staff working to produce high quality products.

Link: www.youtube.com/watch?time_continue=2&v=2KXOnPvszTQ

Video 2

Title: Housing pigs...different approaches

Abstract: This is a video about pig production and the housing of pigs. It describes existing methods and technologies used on an Australian pig farm. It includes information about indoor eco housing that uses straw based systems with technologies to keep pigs well fed and protected in all kinds of weather.

Link: www.youtube.com/watch?v=D9DdEildTWg

Video 3

Title: Aussie Pig Farmers: Environmental Stewardship.

Abstract: This is a video explaining how one Australian pork farmer is demonstrating their environmental responsibility and stewardship by using pig manure or biogas to create electricity. It includes sections on how the decomposing manure creates methane; how the methane is captured, transported and used to generate electricity at the farm to provide thermal comfort and appropriate conditions for baby piglets. It also highlights how food and packaging waste from other sources is recycled and reused as food for the pigs.

Link: www.youtube.com/watch?time_continue=2&v=KLvSGvw279k

Source: Changing conditions in the pig industry. An Educational unit for Secondary Schools, APL, pages 25-27.

Suggested activities for Farmers on Pig Farms to use with Classes

Setting the context

Share greeting and an introduction to the pig farm.

Explain the rules for visiting the pig farm.

Establish students' prior knowledge about pig farming by asking questions such as:

- What things would you expect to find on a pig farm?
- Who might work here?
- Why are pigs farmed?

Brainstorm what the students would like to find out about pigs and pig farming.

Introduction to pigs, for example:

- What they are;
- Where they come from;
- What they look like;
- How they live; and
- How they change over time.

ACTIVITIES:

Students look at pigs and make observations about where they are housed; how they are fed and watered; where they sleep; how their shelter protects them:

- The farmer provides an explanation of how pigs are farmed.
How are the animals cared for? What do they eat? Where do they sleep?
Where do they go once they are raised?
- Question time

Overview of the operations of the farm:

- Farm tour
 - Students view people at work
 - Students see pigs at different stages of development
 - Students see farming equipment and how it is used
 - Students understand the importance of environmental conditions
- ACTIVITY: Working in small groups, try to grade some pigs into their size classes (piglets/weaners/sows/baconers/finishers).
- Question time

Post Visit Activities for Teachers (Primary)

What we know: knowledge circles

Students sit in two concentric circles. Arrange students in pairs, facing each other. Each pair exchanges information about their farm visit to show what they observed, investigated and learned.

After a given time, each circle moves one place. Repeat the exchange in a new pair. Continue until students have shared information on a number of occasions. Reform into one large circle. Move around the circle, each student contributing one piece of information they learnt from another student.

Record the facts

Students record pig facts. (Name; What they look like; Size; Where they come from; Foods eaten; Mystery Fact)

Discussion cards

Divide the class into small groups. See Appendix A for a set of discussion cards.

Share the statements on the discussion cards with the groups, encouraging everyone to share their ideas. The teacher's task is to start with these statements and engage students in small group discussions.

Share learning

Students could organise the information learned into a website, play, information report, digital presentation, newspaper report, short story using characters of the farm, or a big book to share with younger classes.

Dioramas

Students could make dioramas. Students could choose one of the following relationships to feature: pig farms and pigs.

Learning logs

Students complete a Learning log about what they have learned.

Educating others

Students write an article for the school newsletter about their pig farm visit and what they learned about pigs and pig farming. Or, students create a display or perform a play for others to view and learn about pigs and pig farming.

Post Visit Activities for Teachers (Upper Primary & Junior Secondary)

Challenge students' ideas and learning strategies by encouraging further inquiry; providing the stimulus for investigating real life situations, alternative viewpoints and empowering students to investigate and respond to a challenge, task or project (commonly called 'Project-Based Learning').

The scenario:

Australian Pork Limited invites schools to document their visit to a pig farm.

Profile what you have discovered about how pigs are raised and the running of a pig farm. Present your understandings through video, animation and other engaging media.

Your challenge is to create a video, animation, poster or e-Brochure to raise awareness about the sustainable practices in the pork industry used to care for the environment; maintain healthy farms and healthy pigs.

Your team should develop an understanding of:

- What pigs need to grow and survive and produce quality pork;
- How Australian pig farmers raise and produce healthy pigs, maintain healthy farms and care for the environment;
- The resources used on pig farms; and
- The sustainable practices used on Australian pig farms.

What happens when Australian pig farmers strive to farm sustainably? Give pig farming an update and communicate new ideas and innovations used in sustainable pig farming in changing times.

Each pair or small group will also be asked to present their chosen sample of work to an audience later in the unit.

Introduce some digital options that are available to the students.

Introduce 'Canva' a free digital tool that can assist create brochures, presentations and more! Note that it has a great photo library that includes pig! See: www.canva.com/about

For cartoons, movie making and editing see Creaza at www.creazaeducation.com

Introduce students to Lucidpress, a free online poster maker.
See: www.lucidpress.com/pages/examples/free-online-poster-maker

Highlight Glogster as another digital tool that can create posters at <http://edu.glogster.com>

Post Visit Activities for Teachers (Secondary)

Challenge students' ideas and learning strategies by encouraging further inquiry; providing the stimulus for investigating real life situations, alternative viewpoints and empowering students to investigate and respond to a challenge, task or project (commonly called 'Project-Based Learning').

The scenario:

Australian Pork Limited invites you to share an inspiring story about Australia's amazing pig farmers.

Your team will be gathering and analysing information about pig farmers, the production systems they use to grow and produce a quality product; factors that influence the design of the production processes; the system used to move the product from the farm to our plates; and an outline of the range of technologies used to manage the farms and their farm management practices.

Your finished piece of work requires the use of digital technologies. For example, you might use a digital device or make a digitally produced work sample using presentation software, photos and video clips. You are required to include the work sample and researched script or notes on the group's chosen sector. Involvement and ownership of tasks by all team members involved in the production of the work sample is encouraged.

Brainstorm the Web 2.0 tools available today that might assist in creating your piece of work. Check out:

- Flickr www.flickr.com a database for images and videos
- PicArtia www.makeuseof.com/dir/picartia where you can create photo mosaics
- Google Earth <http://earth.google.com> where you can locate places
- Google Maps <http://maps.google.com> where you can find places of interest.
- Google SketchUp <http://sketchup.google.com/download> a 3D modelling software
- Glogster www.glogster.com where you can mash up media
- Voice Thread <http://voicethread.com> where you can upload video, record audio, add still images and create a digital story

Links to the Australian Curriculum

This is a list of links to Australian Curriculum Content Descriptions used in this unit for teacher use.

Science: Science Understanding: Biological sciences

Living things have basic needs, including food and water [ACSSU002](#)

Living things live in different places where their needs are met [ACSSU211](#)

Living things grow, change and have offspring similar to themselves [ACSSU030](#)

Living things have life cycles [ACSSU072](#)

Living things have structural features and adaptations that help them to survive in their environment [ACSSU043](#)

The growth and survival of living things are affected by the physical conditions of their environment [ACSSU094](#)

Design and Technologies: Knowledge and Understanding

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

Investigate food and fibre production and food technologies used in modern and traditional societies [ACTDEK012](#)

Investigate how and why food and fibre are produced in managed environments [ACTDEK021](#)

Analyse how food and fibre are produced when designing managed environments and how these can become more sustainable [ACTDEK032](#)

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA) downloaded from the Australian Curriculum February 2015.

Science and Technologies Early Stage 1

Knowledge and understandings

STe-3LW-ST explores the characteristics, needs and uses of living things

Skills

STe-IWS-S observes, questions and collects data to communicate ideas

STe-2DP-T develops solutions to an identified need

Science and Technologies Stage 1

Knowledge and Understandings

ST1-5LW-T identifies how plants and animals are used for food and fibre products

Skills

ST1-1WS-S observes, questions and collects data to communicate and compare ideas

ST1-2DP-T uses materials, tools and equipment to develop solutions for a need or opportunity

Science and Technologies Stage 2

Knowledge and understandings

ST2-5LW-T describes how agricultural processes are used to grow plants and raise animals for food, clothing and shelter

Skills

ST2-2DP-T selects and uses materials, tools and equipment to develop solutions for a need or opportunity

ST2-3DP-T defines problems, describes and follows algorithms to develop solutions

Science and Technologies Stage 3

Knowledge and understandings

ST3-5LW-T explains how food and fibre are produced sustainably in managed environments for health and nutrition

Skills

ST3-1WS-S plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusions

ST3-2DP-T plans and uses materials, tools and equipment to develop solutions for a need or opportunity

ST3-3DP-T defines problems, and designs, modifies and follows algorithms to develop solutions

Technology Mandatory Stage 4

Knowledge and Understandings

TE4-5AG investigates how food and fibre are produced in managed environments

Life Skills

TELS-1DP communicates ideas and solutions to authentic problems or opportunities

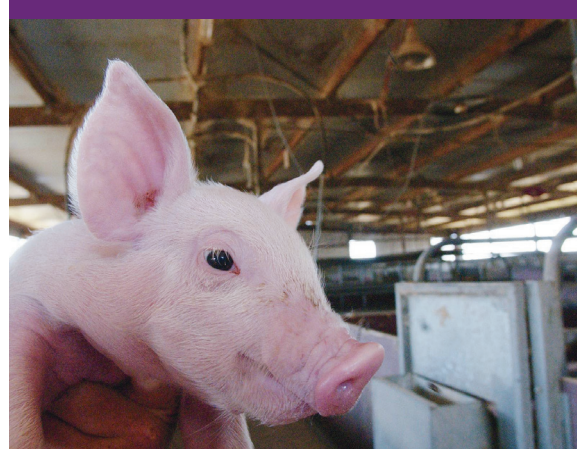
TELS-2DP participates in planning for the production of designed solutions

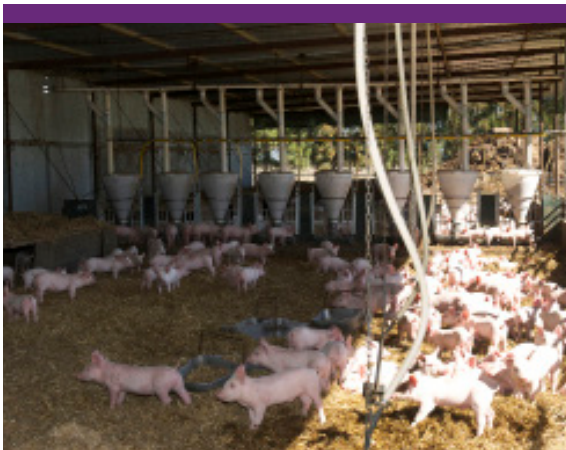
TELS-3DP participates in the production of designed solutions

TELS-4DP follows safe practices in the use of tools, materials and processes for design projects

TELS-6AG describes how food and fibre are produced

Appendix A: Pigs





Photo's courtesy of Australian Pork Limited

Appendix B: Discussion Cards



Australian pig farmers understand more than anyone that providing excellent care for their pigs results in a contented animal that provides a high quality product. I have heard...

There are many responsibilities involved in caring for pigs – including their housing, food, water and special needs. At the pig farm I visited I felt...

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

A sow raised for breeding will have her first litter when she's about one year old. I understand that...

The time from conception to birth for a sow is 3 months, 3 weeks and 3 days. Sows can have...

Piglets feed from their mother for three to four weeks before being weaned and grouped with other pigs the same age, in a...

Pigs are fed on mostly grains.
The most important thing...

When something is 'renewable' it can be used over and over without running out.
Renewable waste sources on a pig farm include...

There are a range of pig farming methods in Australia – indoor housing, deep litter housing, outdoor bred and free range systems. When I think of pig housing...

Solar power harnesses energy from the sun. Reasons for installing solar on pig farms includes...

Whether housed indoors or outdoors, a pig spends more time resting than any other domestic animal. When I think about this...

Pigs are unable to perspire and they lose heat through their mouths. The ideal growing temperature for older pigs is 20–22°Celsius. When it's really hot, pig farmers...

On average, a sow will produce 10–14 piglets per litter. I think piglets are...

The average growth rate of Australian pigs is around 600–650 g a day from birth to sale. When I visualise 600–650 g I envisage...

Appendix C: Industry Terms

Adult	Any pig over the age of nine months
Aerobic pond or lagoon	A dam that uses aerobic micro-organisms to treat the effluent. These are micro-organisms that require free oxygen from the air to function. Consequently, aerobic ponds/lagoons have a large surface area to volume ratio. They are usually less than 1.5 m deep
Approved authority	Local or State government entity with relevant statutory authority
APIQ[®]	The Australian Pork Industry on-farm quality assurance program
Best practice environmental management	A collection of exemplary and recommended practices at a farm level that piggery operators should strive to achieve in the long term to ensure their operation is environmentally sustainable
Block of paddocks	A group of adjacent paddocks used simultaneously to run pigs. For piggeries that operate with a radial paddock system, one radial would constitute a block of paddocks. Similarly, if a piggery uses eight adjacent paddocks at a time, this would constitute a block of paddocks
Boar	An uncastrated male pig
Breeder piggery / breeding unit	A unit where breeding stock are kept, along with sucker pigs
Buffer/buffer distance	The distances provided between the piggery complex or reuse areas and sensitive natural resources (e.g., bores, watercourses and major water storages) as an important secondary measure for reducing the risk of environmental impact
Compost	The product of the partial decomposition of organic matter by microorganisms
Conventional piggery	These typically house pigs within steel or timber framed sheds with corrugated iron or sandwich panel roofing and walls made from preformed concrete panels, concrete blocks, corrugated iron or sandwich panel (or some combination of these), sometimes with shutters or nylon curtains depending on the ventilation system. A fully environmentally controlled shed has enclosed walls with extraction fans and cooling pads providing ventilation and climate control. Conventional sheds have a concrete base, often with concrete under-floor effluent collection pits or channels. The flooring is usually partly or fully slatted, and spilt feed, water, urine and faeces fall through the slats into the underfloor channels or pits. These are regularly flushed or drained to remove effluent from the sheds. Sheds without slatted flooring usually include an open channel dunging area which is cleaned by flushing or hosing
Creep area	A separate area within an individual sow farrowing pen or hut in which piglets are protected from crushing, or overlying, by the sow, and when indoors is usually heated to provide a temperature that is more suitable for maintaining the welfare of piglets, while at the same time, maintaining the comfort of the sow. Creep areas in huts have straw as bedding which keeps the piglets warm

Deep litter piggery	A housing system in which pigs are typically accommodated within a series of hooped metal frames covered in a waterproof fabric, similar to the plastic greenhouses used in horticulture. However, skillion-roof sheds and converted conventional housing may also be used. Deep litter housing may be established on a concrete base or a compacted earth floor. Pigs are bedded on straw, sawdust, rice hulls or similar loose material that absorbs manure, eliminating the need to use water for cleaning. The used bedding is generally removed and replaced when the batch of the pigs is removed, or on a regular basis
Dry sow	A female pig that has been mated and has not yet farrowed
Environmental Management Plan (EMP)	An EMP focuses on the general management of the whole farm, taking into account the environment and associated risks. It should document design features and management practices; identify risks and mitigation strategies; include ongoing monitoring to ensure impacts are minimised; and processes for continual review and improvement
Erosion	The wearing away of the land surface by rain or wind, removing soil from one point to another (for example gully, rill or sheet erosion)
Farrow / farrowing	Give/giving birth to piglets
Farrow-to-finish	A production system incorporating a breeding herd, plus progeny, through to finished bacon weight (usually 100-110 kg)
Feedlot/Feedlot outdoor piggery	A piggery where the pigs are continuously accommodated in permanent outdoor enclosures located within a controlled drainage area
Feeder	Equipment from which feed is available for consumption
Finisher	Pigs generally above 50 kg live-weight, until they are sold or retained for breeding. Usually refers to pigs that are in the final phase of their growth cycle
Free range	Free range means that pigs are kept permanently outdoors for their entire life with shelter from the elements provided, furnished with bedding. Free Range pork production consists of outdoor paddocks, which include rooting and/or foraging areas, wallows (where regulations and seasonal conditions permit) and kennels/huts for shelter. The huts allow the animals to seek shelter from environmental extremes. They also provide additional protection for the piglets when very young
Gestation	The period when a sow is pregnant
Gilt	A female pig before her first mating/litter. After this time female pigs are called sows.
Grower	Pigs generally with liveweight of 20-60 kg
Growing pigs	Weaners, growers and finishers
Grower/grow-out unit	A production system where pigs are grown from weaner, or grower weight, through to pork or bacon weight
Hut	A weatherproof structure designed for providing shelter for pigs in outdoor production systems
Indoor piggery	Piggery system in which the pigs are accommodated indoors in either conventional or deep litter sheds
Kennel	A weatherproof moveable structure designed to provide shelter and protection for farrowing sows and / or piglets in outdoor production systems
Lactating sow	A sow that has given birth and is producing milk to feed her piglets

Outdoor bred	APIQ✓® Outdoor bred production means that adult breeding sows live in open spaces with free access to paddocks for their entire adult life; with rooting and foraging areas, wallows where conditions allow, bedded shelter and adequate feed and water provided. Piglets are born and raised under these conditions until weaned
Outdoor piggery	System in which the pigs are kept outdoors but are confined within an area with housing provided for shelter and fed for the purpose of production, relying primarily on prepared or manufactured feedstuffs or rations to meet their nutritional requirements
Pen	An enclosure for confining pigs in which they can turn around, which may be used for housing pigs in groups, housing boars individually, management purposes, such as mating or farrowing, or for confining pigs individually
Piggery	System in which the pigs are confined within a structure and fed for the purpose of production, relying primarily on prepared or manufactured feedstuffs or rations to meet their nutritional requirements
Piggery complex	This includes all facilities where pigs are housed, adjoining or nearby areas where pigs are yarded, tended, loaded and unloaded; areas where manure from the piggery accumulates or is treated pending use or removal; and facilities for preparing, handling and storing feed. This does not include the reuse areas
Piglet	A pig up to the time it is weaned from the sow
Rotational outdoor piggery	An outdoor piggery where the pigs are kept in small paddocks that are used in rotation with a pasture or cropping phase. During the stocked phase, the pigs are supplied with prepared feed, but can also forage
Sow	An adult female pig, which has had one or more litters
Sucker/sucking piglet	A piglet between birth and weaning (i.e. an unweaned pig)
Wallow	A mud-filled depression in the ground where pigs can roll in. This allows them to cover themselves with mud which cools their bodies and protect against sunburn
Weaner	A pig after it has been weaned from the sow until approximately 30 kg in live-weight
Weaning	The act of permanently separating piglets from the sow

AUSTRALIAN
Pork[™]



AUSTRALIAN PORK LIMITED

ABN 83 092 783 728

Level 2, 2 Brisbane Avenue Barton ACT 2600
PO Box 4746 Kingston ACT 2604 Australia

P: 02 6285 2200 **F:** 02 6285 2288

E: apl@australianpork.com.au

www.australianpork.com.au