

PEOPLE IN PRIMARY INDUSTRIES



PEOPLE IN PRIMARY INDUSTRIES

These activities are aimed at helping students to appreciate how broad and valuable Australian primary industries are as well as how many people in different parts of the county, from rural areas to cities, play their part in food and fibre production.

The activities complement the Lego character careers cards available on the NSW DPIRD School Program website (<https://www.dpi.nsw.gov.au/education-and-training/school-resources>). The original set of characters was produced for a pulse education kit developed with Little Brick Pastoral® and support from Pulse Australia. The kit was distributed in 2016 – the International Year of the Pulse.

Additional images and videos are available on the Schools Program website and more will be added so make sure you bookmark our page and check

back on the range of careers and primary industries represented!

If you live in a farming area you can adjust the activities to place the characters in a particular industry be it horticulture, livestock production, dairying, viticulture, grains or fibre – to make sure your students' learning is connected to their everyday lives.

Some of the careers activities refer to the 'supply chain'. This includes the steps that food and fibre go through on the way from farms to us. The Royal Agricultural Society of NSW have some example of supply chains in food production on the website (<https://www.rasnsw.com.au/globalassets/document-library/rasnsw/education/career-stepping-stones-posters.pdf>)



SUGGESTED ACTIVITIES



The activities can be used for students working towards outcomes from Early Stage 1 to 3. They will help students work towards the outcomes of a number of syllabuses including the objectives from the following syllabuses:

- Science and Technology:
 - » design and production processes in the development of solutions
 - » the built environment including food and fibre production
 - » digital technologies
- Geography :
 - » develop knowledge and understanding of the features and characteristics of places and environments across a range of scales
 - » develop knowledge and understanding of interactions between people, places and environments
- History
- As well as a range of outcomes from the English, Maths and Arts syllabuses (depending the way you choose to implement them in your classroom).



SUGGESTED ACTIVITIES



FARMS as places:

- Look at some images of Australian farming on the internet or in books. Talk about the items that are shown in the images eg tractors, crops, houses, dogs, sheds etc
- What do farms produce that we rely on every day? Talk about the different foods produced on the different farms that you have seen in your research.
- Discuss with students the types of things that they have at their homes - are they different or the same as those found in the images of farms?
- Make a farm map. Students can represent this by either drawing or cutting out and placing images of things found on farms onto a blank page or old map.



FARM TOOLS

- Compare different pieces of farm equipment and how they are designed for different purposes (consider your student's current level of understanding of farming practices).
- You can compare harvesters from different food or fibre production processes eg wheat harvesting, compared to citrus harvesting or harvesting wool! or you might consider the differences between harvesting equipment and planting equipment. Make sure you check out some videos of autonomous vehicles and the ways that drones are being used to collect data for use in autonomous vehicles.
- There are a lot of images and diagrams available online for you to use to stimulate discussion and as inspiration for students to write about their findings.
- Ask students to record their observations and research.
- Ask students to design a new piece of farm equipment? Which job on the farm could it help with?

SUGGESTED ACTIVITIES



WHO MAKES THE FOOD?

- Consider the different roles involved in primary industries in Australia using the set of characters. For each of the roles, students will be able to suggest why they are located where they are (or where they are likely to live). Each of the roles can be located on the map of NSW.
- Find a 'day in the life of ...' video online to show students what farming life is like.
- Discuss with students what a day in the life of some of the primary industries characters might be like. What are the tools and knowledge they would need to do their job?
- Have students write about, or draw a day in the life of one of the characters in the cards. Students could perform a play about a day in the life of some of the characters.



FARMING AND THE EARTH'S SURFACE

- Discuss with students their understanding of farming activities. View some images of farming to help students deepen their understanding of farm activities.
- How do they think these activities change the Earth's surface?
- How does that compare to the way new residential areas change the Earth's surface?
- View aerial images from farming regions online to help with the discussion.



SUGGESTED ACTIVITIES



PRIMARY INDUSTRY CAREERS

- Discuss with students the different careers represented by each of the characters.
 - » Where would these roles generally be found?
 - » Would they be likely to be in your local area?
- Ask students to imagine what the different characters homes are like. They could compare the home of a character that has a city based career with one of the characters that lives in a rural area.
- Describe what their commute to work might be like - what do they see out the window compared to your trip to school?
- Record and display students' findings and comparisons to their home life.



WE ALL NEED EACH OTHER...

- Look at the set of careers cards. Discuss with students where each of the careers fit into the supply chain or the production system.
- Research where and how each of the links in the supply chain work together.
- Ask students to consider what would happen to the supply of food and fibre if any of the links failed.
- Can they design a replacement or improvement on the current way of achieving that part of the system?



FOOD FOR ALL OF US

- Research the range of food and fibre available to purchase in Australia.
 - » Are they all grown here? Why or why not?
 - » Where do they come from? Is all the food grown in Australia consumed here?
 - » Why or why not?
- How does the import and export system meet the needs of people?

Primary industry careers

Farmer



Farmer



How does your role support primary industries?

Farmers are the beginning of the 'paddock to plate' story—we are the start. Without farmers there are no products to sell, process, transport or eat!



What are some important skills?

Farmers need to have a whole range of skills. We need to have a really good understanding of how the different parts of the growing cycle work together. I monitor the health of soil, take regular soil tests, and have my agronomist come and advise me when I am unsure. I spend a lot of time monitoring the health of the crops and we run a few sheep here. I need to understand sheep nutrition requirements, and look after the sheep to make sure they are healthy.



What are the main tools of the trade?

On our property we grow mostly crops, pulses and grains, so our important tools are our machinery. We have tractors, a header, an air seeder and a boom spray but people are our most valuable asset. We have a few casual staff members to help us complete the sowing and harvesting. We also have people come and help with some of the sheep work including shearing.



Where do you live?

Here, on the farm.



What is your favourite part of your job?

I get to live and work with my family in a place I love every day. Some days are hard, and some seasons are harder when the weather isn't in our favour. But most of the time farming is a very rewarding occupation and lifestyle.



What training have you had?

I grew up here on the farm and Mum and Dad taught me everything there is to know about the business and what we do. I also completed a Diploma of Agriculture online through Tocal College and that has given me the confidence to change a few farm management practices that I wanted to do differently. You learn something new every day on a farm!



Where do you see yourself in 10 years?

I will be here. Farming might have changed but I will still love it.

Primary industry careers

Contract harvester



Contract harvester



How does your role support primary industries?

A lot of farming equipment is very expensive and farmers can't always afford to own all the different pieces of machinery especially when some of it is only used once or twice a year at sowing or harvest. They employ us to take our machines to those properties and do that work for them.



What skills are important?

It can be a bit stressful around harvest if everyone needs their crops off at the same time, so it is important to have strong communication skills and be able to negotiate with people. Some days we do really long hours so it is important to take regular breaks. We have many regular drivers so we can swap and work in shifts.



What are the main tools of the trade?

My beautiful big header is my favourite piece of machinery. We keep it well maintained so it is ready to do the long hours during harvest.



Little **BRICK** Pastoral



Where do you live?

I have a small farm right in the middle of the local growing area. I live nice and close to all the farms I do contract work on.



What is your favourite part of your job?

I have always enjoyed operating the machines and these new ones are great to drive! I also like that my job means that I can spend a lot of the year on my own property and working on my farm.



What training have you had?

I grew up in a big town but I knew I wanted to work on farms when I left school so I did a Certificate III in Agriculture. This gave me a lot of practical experience and I made the most of any opportunities that I got. Eventually my husband and I saved up enough money to buy our own place.



Where do you see yourself in 10 years?

I hope to retire from contracting in about 6 years, but I will still live on and run the farm.

Primary industry careers

Grain Transport Driver



Grain Transport Driver



How does your role support primary industries?

I pick up the grain from growers and deliver it to the storage and distribution centres. I also cart fertiliser and seed, and other things the farmers need.



What skills are important?

I need a special type of licence to drive a semi-trailer, called a Heavy Rigid licence. It is also important to be able to manage your time and your business, so I need to use maths to estimate distances and time. Good communication with customers is also super important.



What are the main tools of the trade?

My truck! I look after my truck by doing all the maintenance and servicing that is recommended and I understand how it runs so I can tell if there is something wrong. I also need to have a mobile phone and a computer so I can keep in touch with my customers and organise my paper work.



Little **BRICK** Pastoral



Where do you live?

I live in a large town between the main growing region and the capital city where the grain is stored.



What is your favourite part of your job?

I like being on the road and getting around to lots of different areas. The farmers I meet are great! They love their farms and are usually happy to share their stories. I take a lot of pride in doing my job well. And there is always something different to cart! Today it was chickpeas and tomorrow I have a load of mung beans to cart.



What training have you had?

To earn a Heavy Rigid licence you have to start from a car licence and gradually work up through the smaller trucks. I have also completed a business management course through our local community college, and that really helps me ensure my business is profitable and that I can keep driving.



Where do you see yourself in 10 years?

In my truck! There is no where else I want to be.

Primary industry careers

Processing Plant Manager



Processing Plant Manager



How does your role support primary industries?

We buy pulses and grains from Australian growers and package them for sale through supermarkets and stores throughout the country. We buy some grains from overseas (ones that are not grown in Australia) and we package and sell those too.



What skills are important?

Managing a big plant like this requires really good skills in communicating and working with people. We have lots of staff here that do lots of different jobs, from working on the processing and packing lines, to maintenance staff and transport staff. I need to make sure there are systems in place that keep staff safe and satisfied in their jobs.



What are the main tools of the trade?

I work on the computer a lot. Most of my communication with suppliers and distributors is by email these days so you will usually find me either on the phone or at my desk.



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Where do you live?

I live in the same town as the plant, which is located in a regional centre.



What is your favourite part of your job?

A lot of local families depend on our plant for their income so I am very proud that if I do my job well it helps all those people and the community. I know all my staff and we get together regularly to celebrate our business successes.



What training have you had?

My first job was working here on the processing line. I now have a degree in business. In a job like this it helps to understand the industry, so I visit our farmers regularly and attend conferences and training so I stay up-to-date with the industry.



Where do you see yourself in 10 years?

I plan to be here still although the industry is changing so fast the plant will probably have changed. I think this is really exciting and I am keen to see how it changes in the next 10 years.

Primary industry careers

Grains trader



Grains trader



How does your role support primary industries?

Grain is bought and sold between companies and countries around the world. My job is to ensure the flow of grain from producer to consumer continues. The price paid in international grain trades is affected by the amount of grain available (supply) and the amount of grain needed (demand). It can also be affected by weather, politics and currencies.



What skills are important?

I need to be able to understand the grain trading reports that we get each day. These reports tell us what is happening in international markets and the trends in grain trading. It is also helpful to understand and follow the things that affect supply and demand like weather and international politics.



What are the main tools of the trade?

The internet is key to my job as I am constantly in contact with people from around the world.



Little **BRICK** Pastoral



Where do you live?

I live in a capital city.



What is your favourite part of your job?

I have always enjoyed maths, which I use everyday in my job so that I can understand the trends in international trading. It's good to be working at something I am good at, and I really enjoy looking at the trends over the years and seeing how things change through history.



What training have you had?

I completed a Bachelor of Agriculture majoring in Agricultural Economics. My favourite subject was Agricultural and Resource Economics. I decided to do my industry placement here, and loved it so much I applied for a graduate position with the company.



Where do you see yourself in 10 years?

Hopefully I will still be doing this job and doing it well!

Primary industry careers

Chef



Chef



How does your role support primary industries?

I love using beautiful, fresh Australian produce in the dishes I serve in my restaurant. Sometimes, people can't see the possibilities in food until they try it in a dish that someone else has prepared.



What are some important skills?

You really do have to understand and love food to be able to prepare original dishes. I also need to be able to plan ahead to make sure I have everything I need to deliver high quality food every night, and that includes having a dedicated and hardworking team.



What are the main tools of the trade?

We have a really well-fitted-out kitchen and I don't think there is anything in here that I could do without. The food industry is constantly changing and I love experimenting with new ideas, tools and techniques.



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Where do you live?

I live in a suburb not far from the restaurant. I do very long hours so I can't live too far away.



What is your favourite part of your job?

I love that I can experiment and use my imagination when planning a new dish. People are always willing to test a new dish for me and sometimes I tweak it a bit depending on what they think.



What training have you had?

I am a qualified chef, so I did a four-year apprenticeship at a local restaurant. I also do lots of extra training in my time off to make sure that I understand the ingredients that I am working with. This includes visiting lots of other restaurants and talking to other chefs. I also love visiting producers and farmers' markets so I can learn first hand about the produce and how it is grown.



Where do you see yourself in 10 years?

Right here in the kitchen.

Primary industry careers

Research Agronomist



Research Agronomist



How does your role support primary industries?

My research helps primary industries to be the most efficient and productive that they can be. I run different trials around the state to look at different growing conditions and crops. I work with a number of different industries to make sure that growers have access to local information that is relevant to their farms. In some trials I am looking at the pests and diseases of crops. Some trials are about soil health and moisture requirements. Others are about different crop varieties and the growing season.



What are some important skills?

It's important to be able to plan and conduct research trials making sure the science behind the trial is robust. It is also important to be able to communicate my research findings, so I need to be able to write scientifically. Public speaking is important as sometimes I present my papers at conferences, which isn't my favourite thing to do, but I am getting better at it!



What are the main tools of the trade?

The most important thing I need is space or land to conduct my trials. Sometimes that is on a research station run by the government, sometimes it is on a farmer's

property, and sometimes my trials are in a greenhouse. I also need to record and analyse the information I have collected, so I use measuring tools, weather stations and I couldn't do without my computer!



Where do you live?

I live in a small town not far from the research station.



What is your favourite part of your job?

I love working outdoors and reporting on the research knowing that it will help our growers make decisions about their farming systems. I love how varied the work is and I get to travel across a lot of the state, which is great!



What training have you had?

I have a Bachelor of Science from university. I like to attend industry conferences and university seminars so I can learn about other research trials and what the industry is looking for in our work.



Where do you see yourself in 10 years?

I think I will still be researching but our understanding of primary industries is changing with every study so I couldn't even guess what the trials will be about!



Primary industry careers

Agronomist



Agronomist



How does your role support primary industries?

I provide information and advice to growers on crops and pastures. It's my job to stay up-to-date on research and developments in the industry and to pass that advice on to growers. I also help them to understand and make decisions about managing their soil health, crops and pastures.



What are some important skills?

I spend a lot of time reading new research and reports. I also talk to the fertiliser and seed companies to make sure I understand the developments in their industry and the new products they offer. I need to be able to identify the growing stages of different crops, pastures and weeds, as well as common pests and diseases of those plants, so I can advise my clients on the best management practices for their situations.



What are the main tools of the trade?

My phone, my computer and my car. I am on the road a lot visiting farmers and companies that produce

fertilisers and herbicides. I keep in touch with the research stations and how their trials are going. I am subscribed to a lot of industry newsletters and magazines so I spend a lot of time reading and learning about new research and findings.



Where do you live?

I live on a farm just outside town.



What is your favourite part of your job?

I love the contact with people and knowing that my job helps farmers to manage their businesses.



What training have you had?

I have a Bachelor of Agricultural Science from university and all the reading and researching that I do is like ongoing training.



Where do you see yourself in 10 years?

I will still be an agronomist but I will probably be working for a different company.



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Primary industry careers

Rural merchandise store worker



Rural merchandise store worker



How does your role support primary industries?

We supply the farming community with everything needed to run a farm. We also have an agronomist to provide advice about growing crops and pastures.



What skills are important?

I need to understand local industries and growing conditions. I deal with a lot of different people so it is good to be able to spend time and get to know growers and contractors in our local area. We stock a huge range of supplies, from fencing materials and livestock feeds to technologies like drones. This variety means I need to have a really good understanding of everything we stock and be able to recommend the right product for the job.



What are the main tools of the trade?

My phone and computer are really important, so we can access lots of information online to help farmers make decisions and to find a particular tool or a soil testing lab.



Where do you live?

I live here in town.



What is your favourite part of your job?

When I get to go and visit farmers and get to know their properties.



What training have you had?

I did work experience here and then had some after-school work. I have had a lot of training through the store in things like safe handling of chemicals.



Where do you see yourself in 10 years?

I hope to be managing one of the stores.



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Primary industry careers

Laboratory technician



Laboratory technician



How does your role support primary industries?

The success of most agricultural industries depends on the health of the soil and the plants. My job is to test the soil samples that farmers send in. The results help them to make decisions about whether they need to add fertiliser or other supplements to their soil. We sometimes also test plants to help make decisions on plant nutrition, growing conditions or requirements.



What skills are important?

I need to be methodical and consistent in handling the samples, doing the tests and reporting on the results. It is also important to know the procedure for lots of different tests and be able to follow instructions to ensure the tests we complete are accurate



What are the main tools of the trade?

We have a laboratory with equipment for all the different tests we do and use computers to analyse and report on the results.



Where do you live?

I live in a large regional centre.



What is your favourite part of your job?

There is a very specific process for each test and I like to follow the procedure. I am proud to do my work well. I really like seeing how the soil changes over the years. Some farmers do soil tests in their paddocks every year to see what nutrients their soils might need added to be more productive, and I like seeing how soil health can improve over time.



What training have you had?

I have a Bachelor of Science majoring in Chemistry.



Where do you see yourself in 10 years?

Managing the lab.



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Primary industry careers

Agriculture teacher



Agriculture teacher



How does your role support primary industries?

It's really important that people understand and appreciate agriculture so I try to get students enthusiastic about agriculture and then encourage them to choose agriculture as a subject later in school.



What skills are important?

Enthusiasm! If I am not enthusiastic about agriculture I can't expect my students to be.



What are the main tools of the trade?

The ag plot in the school is where we do a lot of our teaching. It is really important for me to have lots of up-to-date industry information that I can share with my students and answer their questions. We have a group of local farmers that are really supportive of the agricultural program we have here at the school.



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Where do you live?

I live in town near the school. I love being able to walk to school each day.



What is your favourite part of your job?

When I have a group of students who really love agriculture and look forward to the work that we do and the projects that we run. We often take our school stud cattle or sheep to local shows and it is great to see the pride the students have in their animals.



What training have you had?

I did a Diploma of Agriculture at a vocational college when I left school and then studied teaching. My cousins lived on a farm when I was growing up and I used to visit them a lot, which is how I first got interested in agriculture.



Where do you see yourself in 10 years?

Teaching agriculture. I would love to see our school ag plot expand and have more students involved.

Primary industry careers

Pulse chemist



Pulse chemist



How does your role support primary industries?

My research helps the pulse industry by improving our understanding of chickpeas and how and where to grow them. My work is part of the national chickpea breeding program. We aim to increase chickpea production. We breed chickpeas that are resistant to disease, that adapt to growing conditions in different locations, and that taste good to people in India, Europe, the Middle East, America and Australia.



What skills are important?

I spend a lot of time meeting and talking with growers so it is important I can communicate well, in person and in writing. I use chemistry a lot and I also need to analyse global markets to make sure we are growing chickpeas that suit the needs of different consumers.



What are the main tools of the trade?

We have a laboratory with specialised equipment for all the different tests we do and use computers to analyse and report on the results. We also use balances, sieves and seed counters for measuring, and a colour meter to decide

whether the colour of the seed meets the preferences of different consumers.



Where do you live?

I live in a large regional centre where the lab is based.



What is your favourite part of your job?

Problem solving is my favourite part of the job: working out why something is happening and then finding a way to fix it or how to improve the quality of our chickpeas so that Australian growers can sell more overseas.



What training have you had?

I have a Bachelor of Science majoring in Chemistry and after that I did 4 years of research and wrote a really big report to get a PhD qualification.



Where do you see yourself in 10 years?

Still doing what I do and hopefully I will be recognised as a global chickpea expert!



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