

Year 3

LEARNING RESOURCE



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Paddock to Plate: Where does my food come from?

Changes: Fresh and processed foods



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Changes: Fresh and processed foods?

Content Descriptor:		
Design and Technologies	Investigate food and fibre production and food technologies used in modern and traditional societies	ACTDEK012
Design and Technologies	Plan a sequence of production steps when making designed solutions individually and collaboratively	ACTDEP018
English	Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations	ACELY1676
Science	Science involves making predictions and describing patterns and relationships	ACSHE050
Maths	Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies	ACMSP069



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Learning Outcome

Evidence is increasingly highlighting that students have a superficial understanding of the production and processing of their food. This activity will endeavour to develop students' understanding of food sources and the changes food needs to go through before it is eaten. Students, through interactive activities, discussion and reflection will:

- Be introduced to the idea that animals and plants are a source of food.
- Grasp the notion that nearly all food goes through some form of change, and this has been the case in traditional and modern times.
- Develop their understanding of how and where food is grown.
- Understand the difference between fresh and processed food, and explore some of the misconceptions regarding processed food.
- Understand the difference between minimally processed and highly processed food.
- Be able to describe some of the necessary changes our food must go through.



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Resource Context

The purpose of this resource is to provide a guide for integrating issues and concepts relating to agriculture, food and fibre to support the learning and teaching of the Australian Curriculum in a primary school context. The resource is meant to highlight the engaging and hands-on potential of resources and activities related to agriculture, food and fibre. This resource, while providing a general activity procedure, is meant to stimulate and enhance your teaching ideas, and should be flexible enough to be adapted to many different learning contexts and student learning styles.



work task

Learning and Teaching Sequence

Students are asked to consider the source of their food, whether it is plant, animal or human-made and that most food must go through changes before it can be consumed. Students will also appreciate that in both traditional and modern times changing food to preserve, ensure food safety, and convenience has occurred in varying ways.



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Setting the scene

Flipping the classroom/Before Activity



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Activity 1: View – Does my food need to change?

Having had students think about processed food now have them think about why “Does my food need to change?”

Students should view at home or at school the PowerPoint [Does my food need to change?](#) (or [Word Version](#)) This will clarify prior knowledge and reinforce an understanding that fresh food and processed food go through change – some small and others significant.

The PowerPoint guides students with questions to help them think about and understand why food changes. You will then be able to have the students discuss and share their answers with each other once they have completed the tasks.



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Activity 2: What’s in my Shopping Bag?

a) At the front of the classroom have a pre-prepared shopping bag or shopping trolley. Make sure you have a mix of items that are both fresh and processed AND put in a pair of jeans, jumper etc. Tell students they are going to explore ‘where food comes from’, and for each item you are going to ask them if they think they know where the food or clothes comes from - an:

- Animal,
- Plant or is
- Artificial/human made (you might explain what “artificial means”)

then

- Talk about what is fresh food and what is processed *(See table below for definitions)
- Have students now think about the food in the shopping bag and get them to tell you if it is fresh or processed

b) From your shopping bag pull out a tub of yoghurt (most containers will have berries or other fruit included, it’s a good idea to choose this type) and ask students where does yoghurt come from? Plant or animal? Discuss.

You might like to share with students that 27% of Year 6 students in Australia think that yoghurt grows on trees (Source: Hillman, Kylie and Buckley, Sarah, “Food, Fibre and the Future: Report on surveys of students’ and teachers’ knowledge and understanding of primary industries” (2011). http://research.acer.edu.au/national_surveys/1).

You might like to explain what 27% means.

This is a significant figure, why might this be the case? Have students consider that most packaging has fruit as the biggest illustration, and that we buy our yoghurt from shops and rarely consider where it comes from, hence the confusion.

- c) Now you can ask students if they think yoghurt is fresh or processed? Discuss.
- d) Continue asking students about a range of foods from your bag/trolley. For instance: fresh beetroot, tinned beetroot, dehydrated pineapple with nothing added, tinned tuna, fresh ginger, pasta, tomato sauce, canola oil, frozen chips or fruit or bacon.
- e) Jeans, t shirts are an interesting item to have in your bag, as students are often confused about the farm to fashion journey of their clothing and have no idea denim is from a cotton plant.*
- During discussions it is useful to have students not only consider if the food is a plant or animal but also where it grows, (if it is local or imported), how it grows (on a tree, underground), and if it is a seasonal food or not.



note*

As a reflection exercise you could have a small number of students conduct/lead the same questions with items from their lunch box.

Activity 3: Degrees of food processing



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Setting the scene: Discussion

- i. Ask students why they think foods are processed?

Preservation, food safety, variety and convenience are appropriate answers to explore.

- ii. Discuss that increasingly 'processed food' is being perceived as unhealthy, while fresh food is ideal not all processed food is bad for one's health.
- iii. Why might this be so? In this activity students can consider the strength of this observation while also appreciating that nearly all our food is processed in some way.
- iv. Have students line up horizontally in the classroom, they are to be a human continuum. The front of the line is minimally processed food and the end of the line is highly processed food. Explain that not all foods undergo the same degree of processing.

Invite students one at a time to place some of the items from the 'shopping bag' and lunch box activity along the continuum.

- Dried, pasteurized, washed, sliced and frozen food are usually minimally processed. Ask students about milk and juice, they are minimally processed.
- Milled, crushed or refined foods such as flour, oil and sugar are usually in the middle of the continuum.
- Artificial flavours, artificial colours, baked, fried, smoked etc are examples of highly processed food.

- Discuss – which foods are the least healthy, minimally processed or highly processed?



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Activity 4: Discussion about what students might know in relation to the way technology has changed their food – from a historical perspective

- a) Brainstorm with students how Australia's First People obtained their food? Discuss the concepts of Indigenous agriculture, hunting and gathering and their use of technology – flints as cutting tools.

How do students think their food was prepared and eaten?

- b) Have students write their answers on post-it notes and stick on the front wall/board. This should lead to a discussion to reinforce that food has always needed to be cleaned, prepared, and even cooked.

What changes has technology meant to the way we obtain our food?

- c) Ask students to consider: do you think our First People knew about their food and where it came from?

Why/why not? What about contemporary Australian Society, do we know where our food comes from? Why/why not?



discuss

After Activities – students reflect on their learning by:

1. Creating a food time line

On your classroom wall create a food time line students can place a picture of food/s they have recently eaten on the continuum. It could be fresh, minimally processed through to highly processed. Students could also write if the food item is from a plant or animal and where they think the food came from – how it is grown, when it is grown and where it is grown.

2. The food continuum as a source of data

Use the processed food continuum as a source of data - have students note down the categories of minimally processed, moderately processed and highly processed, and then record how many minimally processed foods are in the classes' lunch boxes and repeating the exercise for moderately processed and highly processed.

Students then should construct a simple column graph or picture graph. Implications for health and nutrition could be explored using the results.

3. Food Facts

Students should read in class or at home the [Food Fact sheets](#) for oranges, grains, dairy, sugar and eggs. These sheets explore the journey of food in greater detail.

4. Reflection and discussion – what is agriculture*? What does agriculture have to do with our food and our fibre?

Farming is agriculture but so too is processing, distribution and supply of our food and fibre.

*Agriculture is cultivating the soil, producing crops and raising livestock to produce food, fibre and other products. Agriculture is the food we eat, the clothing we wear, the material of our homes, the gardens around us, and many of our traditions and values. Importantly, the term also includes, for instance, the financing, processing, marketing, and distribution of agricultural products and nutrition and food consumption.



work task

Assessment Opportunities:

1. Create a class food journey blog or wiki, students are to write 2 posts:

- Students should detail what food they had for dinner or breakfast – fresh, processed and animal/plant/artificial. Also explain briefly where they think the main/key ingredients came from and what changes occurred to the food, for instance, washed, chopped or cooked.
- Suggest what the healthiest foods were in their meal and why.

2. Students in pairs or groups should research some of the concerns over processed foods and prepare for the class a persuasive spoken report (face-to-face or video) that presents two sides to the debate. One side could be 'Positives of processed food' and the other side could be 'Fresh Facts'.

3. Many food processing techniques are not new, in-fact food has been processed since ancient times. Drying, roasting, pickling, fermenting, preserving with salt and evening crude forms of milling have been used by many ancient civilizations. Allocate students one ancient food technique and use computers to research the topic. A poster or PowerPoint/Prezi should be created and presented to the class for discussion.



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Extension Activities

To further explore the food in our shopping bag and its journey, students could investigate some other issues related to changing food and food processing, in particular food packaging.

Students can view at home or at school an interactive clip on food packaging.

http://www.bbc.co.uk/schools/gcsebitesize/design/foodtech/packaginglabelling_act.shtml

What is the relationship between food processing and packaging?



web

- Food Planet is another interactive game that explores the paddock to plate journey of food.
<http://www.coolfoodplanet.org/>
- Students could view and collaboratively discuss what they learnt from this game.
- As a class discuss the waste that is created by packaging, even though, as students have learnt, it is often necessary to preserve and protect food.
 - Create a list of packaging that students observe in supermarkets and what purpose it serves- a tin can serves a different purpose to strawberries in a plastic tub or bread in a bag.
 - Ask students to choose an item of food packaging, ie) breakfast cereal box, fruit packaging, bread bags, yoghurt tubs etc.
 - Have students create a more sustainable way of packaging that still protects the food and keeps it fresh. Share their creations with the class and explain.
- The new German concept supermarket, that has no packaging, may be of interest to students after completing this activity
<http://www.theguardian.com/sustainable-business/2014/sep/16/berlin-duo-supermarket-no-packaging-food-waste>
- Explore food labelling with students as another way of categorising whether foods are minimally processed or highly processed. This task will also lead to an exploration of good nutritional choices.
- **Supporting materials for Changes: Fresh and Processed Food**
 - [Food Facts handout](#)
 - [Does my food need to change? PowerPoint](#)
 - [Does my food need to change? Word Version](#)

Food groups and definition Examples

- 1 Fresh/ Non-processed
 - Foods consumed raw without any further processing, preparation, except washing, cutting, squeezing
 - Raw fruits; non-processed nuts; fresh raw vegetables; fresh grated vegetables; raw crustaceans/ mollusks; fresh juices; fresh and not enriched farmer's milk; whole fresh cream; raw meat; raw egg white; honey.
- 2 Modestly or moderately processed
 - Industrial and commercial foods involving relatively modest processing and consumed with no further cooking
 - Dried or semi-dried fruits; nuts and seeds; raw, vacuum packed or controlled atmosphere foods (e.g. salads); frozen or vacuum-packed raw meat; extra virgin olive oil; fruits, vegetables canned in water, brine, own juice; green and chamomile tea.
 - Foods processed at home and prepared/cooked from raw foods or moderately processed foods
 - Fresh vacuum-packed or frozen cooked potato (including homemade French fries); fresh fruit, compote, boiled; cooked fruit; fresh or frozen cooked vegetables; dried boiled legumes, boiled grain; whole-meal boiled rice; fresh or vacuum-packed cooked meat, fish, offal; whole cooked egg.
- 3 Processed
 - Foods industrially prepared involving high degree of processing such as drying, flaking, hydrogenation, heat treatment, use of industrial ingredients and industrial deep frying. It also includes foods from bakeries and catering outlets requiring no or minimal domestic preparation apart from heating and cooking. This category is subdivided into processed staple/basic foods and highly processed foods, with examples given.

Processed staple/basic

 - Bread; pasta; rice; milk; butter; vegetable oils.

Highly processed

 - Cakes; biscuits; breakfast cereals; crisp bread; confectionery; processed meat; fish; yoghurt; cheese; cream.

(Source: Moubarac, J.C., Parra D, Cannon, G. & Monteiro, A. (2014) Food Classification Systems Based on Food Processing: Significance and Implications for Policies and Actions: A Systematic Literature Review and Assessment. Springer Science+Business Media: New York. Published online February 24, 2014.

Source: http://download.springer.com/static/pdf/63/art%253A10.1007%252Fs13679-014-0092-0.pdf?auth66=1413891151_0acadf54baf7e98527ec2df272263c58&ext=.pdf (accessed October 5, 2014)

Produced by



AgriFood Skills Australia

General inquiries:

Phone: 02 6163 7200

Fax: 02 6162 0610

Email: reception@agrifoodskills.net.au

Web: www.agrifoodskills.net.au

Location

Level 3, 10-12 Brisbane Avenue

Barton

ACT 2600

Postal address

PO Box 5450

Kingston

ACT 2604

Developed by Tathia Shield Wells and Geraldine Piper.

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