

Primary School Teaching Resource

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- Aligned to the New Zealand Curriculum
- Key focus on Horticulture: where our fruit and vegetables come from
- Promotes awareness, critical thinking and action





New Zealand Curriculum Links

Key Competencies

Managing self: acquiring the basic skills of shopping and making plans to support healthy food choices.

Relating to others: to achieve goals, share learning and celebrate diversity.

Participating and contributing: collectively with peers in activities or taking action to sustain healthy food environments.

Thinking: about the factors that impact and influence the selection and growth of particular fruit and vegetables.

Use language, symbols and texts: to access and interpret new knowledge.

Interdependent Concepts

Hauora: develop understanding of the relationship between growing healthy fruit and vegetables and their physical needs for growth and development.

Socio ecological: explore factors that influence the production of fruit and vegetables in planting, harvesting, packaging and transportation.

Attitudes and Values: practical experiences designed to help children develop health enhancing attitudes to fruit and vegetables.

Health promotion: develop knowledge about and implement plans by trialing gardening strategies for health enhancing outcomes.

Prospective Cross Curricular Links

English: making meaning of listening, reading, viewing and engage in speaking, writing, presenting.

Mathematics: use of symbols, charts, diagrams to find and communicate patterns and relationships.

Technology: apply available intellectual and practical resources.

Science: carry out investigation to make sense of the natural, physical world.

Social Science: consider social and environmental factors that influence choice.

Learning languages: identify links to social and cultural contexts.

Why should our school be a 5+ A Day school?

The school environment has an important part to play in providing students with consistent, positive messages about healthy eating. A school environment that says 'we value 5+ A Day' through food service, good teacher role models and healthy food at celebrations can enhance the classroom learning and students' willingness to eat 5+ A Day.

Teaching the children what a serving is?

It couldn't be easier. A serving is about a handful and everyone uses their own hand so a child's serving will be smaller than an adult's.





Essential Learning Areas: Health and Physical Education

Key Area of Learning: Food and Nutrition

Strand	Level	Achievement Objective	Learning Outcome We are learning to:	Independent Concept
A. Personal Growth and Development	Level 1/2	Safety Management	Identify and manage potential risks when growing fruit and vegetables for optimal nutritional value	Hauora
	Level 3/4	Safety Management	Access and use information to identify and minimise risks when growing and transporting fruit and vegetables	Hauora
C. Relationships to Others	Level 1/2	Interpersonal Skills	Work with others and understand how people working together is important in the production of quality fruit and vegetables	Socio-ecological Perspective
	Level 3/4	Societal Attitudes and Values	Understand the factors that influence the production of fruit and vegetables and the availability of these foods for the consumer	Socio-ecological Perspective
D. Healthy Communities and Environments	Level 1/2	Rights, Responsibilities and Laws; People and the environment	Take individual action within a group to contribute to an environment that encourages healthy growth and safe transportation of fruit or vegetables	Health Promotion
	Level 3/4	People and the Environment	Plan and implement activities to enhance the availability of fruit and/or vegetables in different environments	Health Promotion

How many servings should I eat?

At LEAST five handfuls a day. This is why we have the hand in our logo so the children can count the number of servings on their fingers and measure a serving in the hand too.

Why should I 'eat my colours'?

By eating your colours every day you will stay fit and healthy. Colourful fruit and vegetables contain many of the nutrients, minerals and phytochemicals (fight-o-chemicals) your body needs to maintain good health and energy. They also protect against the effects of ageing and can help reduce the risk of some of the major lifestyle diseases. Many of the phytochemicals and other compounds that make fruit and vegetables such healthy foods also give them their colour. There are many different phytochemicals and compounds associated with the colour – so to ensure you get a wide range of them you need to try and eat fruit and vegetables from each of the colour groups every day. For good health it is essential to eat at least five servings each day and ideal if you can eat from each colour group. That is why we say eat 5+ A Day and try to eat the colour way!





Planting and Harvesting

Awareness: Level 1/2

- Cut the 5 + A Day resource cards into separate fruit and vegetable cards and mix up. Children to classify cards into colour groups.
- Talk about each card and find out what they know about each one.
- Establish what the children know about where these plants are grown.
- Create labels: vine, plant, tree, tuber/underground. Children place the cards under the labels they think are correct.
- Have children collect a whole range of seeds, pips, stones, etc. from a range of fruit and vegetables shown in the resource cards, e.g. pumpkin, melons, sweetcorn, beans, avocado, etc.
- Together examine and classify the seeds according to colour, size and texture. Enjoy a game of matching seeds to resource card pictures.

Level 3/4

- Just like people, each fruit or vegetable has its own story. Children explore this concept and write biographies of a selected fruit or vegetable. Use the Fruit and Vegetable facts on www.5aday.co.nz to help you.

Suggestions below may support research:

- Where did your plant originate?
- What environmental conditions does it need to grow?
- Are there any interesting or unusual stories about this plant?
- When is this plant grown and harvested?
- What may threaten the crop?
- What is the scientific name?
- Find a “signature” dish to show off your chosen fruit or vegetable.
- A variation is for children to explore the horticultural practices and traditional crops of a particular culture, (perhaps their own) or research early crops grown in New Zealand e.g. Māori Potato (check out www.tepapa.govt.nz).

Critical Thinking: Level 1/2

- Discuss the importance of drinking water to keep hydrated throughout the day. Discuss how, when drinking water it goes *down* into our body. Have children consider how a plant drinks water.

“Bottoms Up” Experiment

You will need:

- A glass, water, red food colouring, a stalk of silverbeet. You could try various food colourings and other vegetables to see if you get the same effect, e.g. spring onion.

Method:

- Mix a good amount of food colouring and a little water (ensure it is brightly coloured).
- Place the stalk into the glass.
- The next day, you’ll be able to detect the ‘veins’ the coloured water has travelled.
- How do plants indicate when they need more or less water? What are the similarities and differences between a plant needing water and people needing water?





Planting and Harvesting

Twinkling in the winter sky just before dawn in early June, Matariki (the star cluster Pleiades or Seven Sisters) signals the beginning of the Māori New Year. Crops have been harvested and the ground is prepared for spring. Traditionally it is a time for remembering the dead and celebrating new life. For all Māori the importance of Matariki has been captured in proverbs and waiata.

Level 3/4

- Discuss Matariki. Have children use local iwi and websites to research information on traditional fruit/vegetables grown by Māori (e.g. www.taitokerau.co.nz or www.teara.govt.nz).

In groups, children may choose one of the following:- karengo, piko piko, kamo kamo, kūmara, pūhā, kānga pirau, kawakawa leaves, watercress, horopito leaves. Investigate Māori protocols for planting, harvesting, food preparation, serving and eating. Traditional stories of certain foods may be sourced and shared.

- Photocopy the map on page 10. Download the list of key produce growing regions and icons for reference from www.5aday.co.nz

Have the children investigate and plot where fruit/vegetables are primarily commercially grown. In groups select one main crop and hypothesise reasons for the growing location, investigate and share findings with others.

Health Promotion: Level 1/2

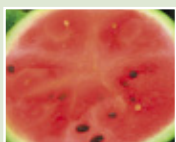
- Plan and plant an edible rainbow garden, e.g. cherry tomatoes, snow peas, yellow capsicum, cauliflower, beetroot.
- Discuss potential threats to healthy growth, design and make a scarecrow, or another protective device.

Level 3/4

- Discuss ways that we can be environmentally friendly and create healthy soil for planting. Discuss how healthy soil can influence the growth of fruit/vegetables. Brainstorm different uses for compost with the school and community. Create a compost and implement suggestions. Information is available on www.tki.org.nz.

The Great Gardening Challenge

- In groups children visit local gardens or websites and design a school fruit/vegetable garden. Construct and present a model using materials that are recycled.
- Using criteria to fit the children's learning needs, e.g. creativity, sustainability, variety, colour, etc, the class selects favoured ideas from group work and create a class "master garden plan".
- Children to measure and cost out their plans and find out where to source materials.
- Consider any traditional cultural practices that could be employed when preparing, planting or harvesting the garden.
- When the final class design is decided upon, get together to find a space in the school yard and action the plan.





Packaging and Transportation

In New Zealand produce does not have to travel far to get to us around the country. Some fruit and vegetables grow better in certain regions/climates, e.g. stone fruit in Central Otago and citrus in Northland. This produce is transported efficiently around New Zealand in refrigerated trucks.

Awareness: Level 1/2

- Children to discuss packaging of fruit and vegetables.
- Using magazines, fliers/mailers, newspapers and personal experiences, children to brainstorm or collect pictures and make a collage of all the different ways fruit/vegetables are packaged.

Levels 3/4

- Using the fruit/vegetables on the 5+ A Day resource cards, identify those grown in New Zealand for export to other countries. Name other fruit/vegetables NZ grows for export. (Information available on www.hortresearch.co.nz).
- Discuss how foods are protected from: moisture, heat, UV light, contamination, pests, etc. What environmentally friendly measures are considered when deciding on packaging materials? How does the weight/cost/availability of materials influence packaging choices? What security issues are considered when packaging produce for export, etc.?

Critical Thinking: Levels 1/2

- Using the 5 + A Day resource cards place fruit/vegetables into two groups: those with an outer layer that we eat and those with an outer layer we don't eat.
- Ask questions to evoke thinking on how nature often provides "natural packaging", e.g. what other fruit and vegetables do or don't have skins that we eat?
- What would happen to a banana without its skin?
- What would happen to a coconut without its husk?
- What is the purpose of these outer layers? (to encase the flesh and juice, prevent dehydration, protect flesh from spoiling from weather, pests, birds, etc.)
- Does this impact on how these fruit and vegetables are looked after as they are transported from one place to another?





Packaging and Transportation

Level 3/4

- Plot to Plate: Using the scale on the map exercise in the Planting and Harvesting critical thinking section, create a chart similar to the chart below, and estimate distances produce travels to get to you (see page 10).

Fruit or Vegetable	Where it is grown in bulk in New Zealand?	Kilometres to destination (your town e.g. New Plymouth)
Apricots	Central Otago	1,150km
Kiwifruit	Bay of Plenty	
Apples	Hawkes Bay	
Citrus	Northland	
Carrots	Ohakune	
Avocado	Bay of Plenty/Far North	
Asparagus	Waikato	
Potatoes	Pukekohe	
Squash	Gisborne/Hawkes Bay	
	TOTAL	km

Health Promotion: Levels 1/2

- Use environmentally friendly materials to design and construct a new packaging idea for a chosen fresh fruit or vegetable. Remind children to include the 5 + A Day on the packet.

Levels 3/4

- What information is included on the packaging?
- Why is this information important?
- The staff of Scott Base in Antarctica, are celebrating the achievements of Sir Edmund Hillary, with a festive banquet and have ordered from New Zealand a large variety of fruit and vegetables. In pairs children select a fruit or vegetable of their choice to send to Antarctica. Their challenge is to create and label an environmentally friendly package that ensures safe delivery of their product to its destination. (Children may research how food is delivered to Antarctica, e.g. dropped from helicopter etc, what fresh foods are grown in the Antarctica greenhouse and how they might promote 5+ A Day).

For information on handling and storage of produce, go to





Homework task

- Discuss with children what their family uses to bring fruit and vegetables home from their local store. Are there other options? E.g. kete, cardboard box, recyclable bags.
- Describe what you notice in the care and placement of fruit/vegetables during the packing process. Why is handling and packing important?
- Which fruit/vegetables need more care and attention when being packed?
- On the homework sheet, 'Let's get Packing' (opposite), get the children to make a list of the fruit/vegetables purchased.
- Encourage children to either draw and/or name each list item in the appropriate section of the "shopping kete/bag" template, as if they were packing the fruit and vegetables to take home from the shop or market themselves. What fruit/vegetables would you put on the bottom/raro, in the middle/waenganui or on the top/runga of the kete?
- On the reverse of the homework sheet, provide shopper's tips indicating reasons for the placement of different fruit/vegetables, e.g. a pumpkin is bulky with hard skin and firm flesh. This can be placed at the bottom of the bag because it is not easily damaged.
- Share findings and compare and contrast fruit/vegetables from each section.



Let's get packing!

List the fruit/vegetables bought by your family:

Fruit	Vegetables
-	-
-	-
-	-
-	-
-	-

Decide how you would pack these fruit/vegetables in the shopping kete/bag to bring home.

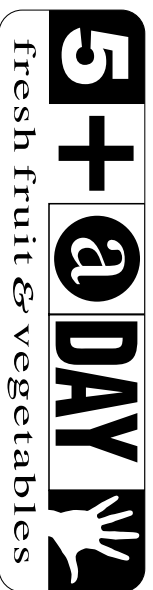
Draw and label each item into the bottom/raro, middle/waenganui or top/runga of the kete as you think appropriate.

Write some "shopper's tips" giving reasons for your placement of the different fruit and vegetables.



5+ A Day Growing Regions





November 2008

Dear Parents/Whānau

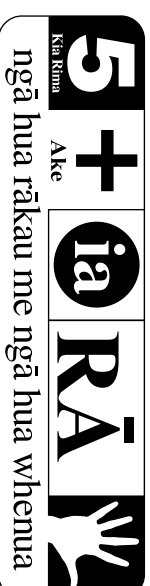
Your child's class is learning about fruit and vegetables using the 5+ A Day resource. This resource aims to encourage children to enjoy five or more servings of fresh fruit and vegetables every day for better health, taste and variety.

This year the theme of the resource is Horticulture – where our fruit and vegetables come from. The class will learn about horticulture, from planting and harvesting through to when you enjoy eating fruit and vegetables.

Check out the ideas opposite for some practical tips for the whole family/whānau to enjoy 5+ A Day everyday.

Kind regards

The 5+ A Day Team



Ideas for the whole whānau to get 5+ A Day every day

Breakfast

- Grate an apple, pear, or mash a banana into porridge.
- Slice bananas onto cereal. Try adding peaches, berries and kiwifruit when in season.

Lunch

- Load sandwiches up with grated butternut pumpkin and beetroot for variety and colour. Keep a sliced tomato separate and add to sandwiches just before eating to avoid a soggy sandwich.
- Mix chopped fruit such as kiwifruit, apples, pears and oranges with low fat yoghurt in a container. Remember to pack a spoon.
- Add sliced carrots, corn, silverbeet, onions and tomatoes to chop suey for a colourful lunch.

Dinner

- Heat leftover vegetables and serve as a topping for toast or pizza.
- Stuff baked potatoes or kumara with diced tomato, corn, courgette or almost any vegetable, and heat.
- Add extra vegetables to favourite meals – just grate and mix them in to spaghetti bolognaise, lasagna or cottage pie.

Dessert

- Bake apples, pears or bananas for a healthy dessert.
- Thread chopped fruit onto skewers for a colourful kebab.

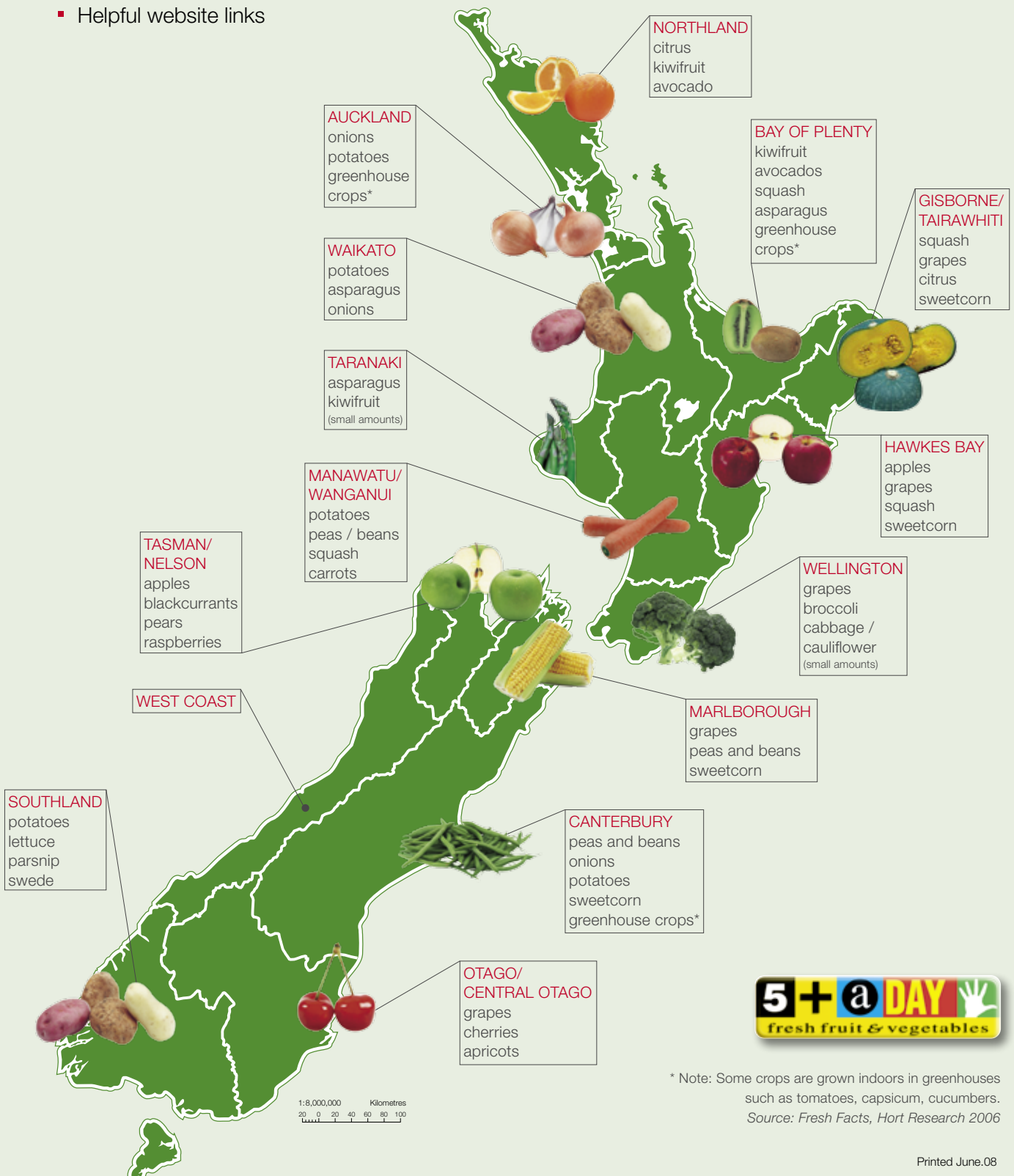
Snacks

- Prepare “grab and go” snacks in small plastic bags in the refrigerator. Use cut up carrots, celery, cucumber, peppers, orange segments and grapes. Store at eye level.



Visit www.5aday.co.nz for downloads and information

- Map of New Zealand and fruit and vegetable icons for the Planting and Harvesting exercise
- Homework handout
- Fruit and vegetable facts
- Helpful website links



* Note: Some crops are grown indoors in greenhouses such as tomatoes, capsicum, cucumbers.
Source: Fresh Facts, Hort Research 2006