



What is a Vegetable?

Teacher Notes

Context: Growing, Pollination

Learning Areas:

Science: Living world

- Life processes
(Level 1-2): Recognise that all living things have certain requirements so they can stay alive.
(Level 3): Recognise that there are life processes common to all living things and that these occur in different ways
- Ecology
(Level 1-2): Recognise that living things are suited to their particular habitat
(Level 3): Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.
- Evolution
(Level 3): Begin to group plants, animals and other living things into science-based classifications.
Explore how the groups of living things we have in the world have changed over long periods of time and appreciate that some living things in New Zealand are quite different from living things in other areas in the world.

Health and Physical Education: Food and Nutrition

- Personal Health and Physical Development
 - A1 Personal growth and development
(Level 2): Describe their stages of growth and their development needs and demonstrate increasing responsibility for self-care.



(Level 3): Identify factors that affect personal, physical, social, and emotional growth and develop skills to manage changes.

■ Healthy Communities and Environments

○ D1 Societal attitudes and values

(Level 2): Explore how people's attitudes, values, and actions contribute to healthy physical and social environments.

(Level 3): Identify how health care and physical activity practices are influenced by community and environmental factors.

■ D2 Community resources

(Level 2): Identify and use local community resources and explain how these contribute to a healthy community.

Key competencies: Thinking, Relating to Others, Participating and Contributing

INTRODUCTION:

We all know what a vegetable is, but have you ever really thought about what makes a vegetable a vegetable? Vegetables aren't always green and they are not always leafy, so let's look more closely at what vegetables actually are.

This lesson is suitable for students with any level of knowledge. Schools new to Garden to Table may find it a useful starting point to engage the children, while schools with a lot of gardening experience may find that being explicit about the parts of plant consolidates the learning they have already done and gives a deeper understanding about plant families.

Suggested prior knowledge:

This particular lesson can be delivered at any point in the programme. The responses of students will be different based on their level of understanding and the lessons can be adapted to accommodate this.

The Task: Notes for Teachers

You might like to start your lesson with a brainstorm about what your class thinks a vegetable is. This should start to open up questions about the variety of vegetables and what features they have in common. Can you agree on a definition for the word vegetable that would explain what it is to an alien species? Can you compare this with a definition from the dictionary?



- Present students with a large leaf of **silverbeet**, or one per group for them to handle and examine. Ask them what it is and to describe it to others using their 5 senses. They should use the word **leaf** and **vegetable** and possibly name it as **silverbeet**. You could play this either in the style of Taboo where you lose points if you use particular words, e.g. green, leaf, vegetable; you get only one point if you have a word that another group has used; and two points if you list a word no one else has used – or in the style of Scattergories where the students have to come up with describing words that begin with particular letters, e.g. S.I.L.V.E.R.B.E.E.T.
- Ask them if they know how to cook it and what parts we eat. Can they find two different parts we eat on one plant?
- Ask students to draw a plant. When they have finished ask them to change to a different colour pen. Ask them to make sure they have included leaves, stem, roots, flowers and fruits, and depending on the skill level of your class, seeds, bulbs, tubers and fungi. After sharing their work, if they haven't included the required plant parts they need to add them to their drawing in a new colour. Using another new colour, ask students to list as many vegetables that are formed from each plant part as they can.
- Present the class with a large variety of vegetables, preferably fresh but packets, tins or pictures or a combination will work. Have a look at each vegetable to work out what plant part students think it might be – some might be very obvious but some might be trickier. Include a few tricky ones like onions, mushrooms, potatoes, leeks and a few vegetables that contain seeds so are technically fruits, e.g. tomatoes, eggplant, cucumber. You could also include some tins of chickpeas, butterbeans, lentils, etc., to make the challenge more difficult and raise more discussion.
- Collate these into a class drawing of a plant with lists of vegetables for each plant part. This could be added to over time, and revisited after a Garden to Table session when new vegetables have been introduced or at the end of a week when students recall what plant parts they have eaten that week. Who has eaten a flower this week? Who has eaten a root?

Some examples of different plant parts include:

Roots: carrots, parsnips, radishes, turnips, beetroot, ginger

Stems: celery, rhubarb, asparagus

Leaves: silverbeet, spinach, cabbage, lettuce

Flowers: broccoli, cauliflower, Romanesco, zucchini flowers, saffron, capers



Fruits: pumpkin, tomatoes, cucumbers, eggplant, zucchini, capsicum

Seeds: nuts, peas, beans, corn, pumpkin seeds

Tubers: potatoes, kūmara, taro, yam, Jerusalem artichoke

Bulbs: onions, garlic,

What would you classify a leek as? What about cress or sprouts like alfalfa? What about a strawberry? How can you find out?

Did you know that the heads of broccoli and cauliflower are made up of tiny flower buds? If they were left to grow they would open into small yellow flowers.

Which plant part do we eat most?

It is important that students gain an understanding that every vegetable grows as a whole plant but that usually the edible part of that plant is exaggerated. This does not mean that we can eat all plants, or all parts of vegetable plants. For example, the leaves of rhubarb are not edible; they are poisonous. There are some vegetables, e.g. potatoes, that we can only eat when they are cooked.

At some point in this unit you may have to address the idea of fruits vs vegetables and some vegetables that are “fruits in disguise” e.g. tomatoes, cucumber (because they contain the seeds of the plant). How many “fruits in disguise” can you list?

EXPLORING FURTHER:

Plant parts relay:

Print off two sets of the pictures from <http://www.vegetables.co.nz/vegetables-a-z/> and cut into separate cards taking care to cut off or fold over the plant part under each vegetable name so it cannot be seen. Print off two sets of the list of plant parts as labels.

Split the class into two groups and have each group stand in a single line with the leaders facing each other. Place one set of **plant part labels** of each line.

Give the leader of each group a stack of **vegetable picture cards**



The first student looks at the top picture to decide which plant part we eat and places the card in the right category. They then pass the stack of cards to the next student and move to the back of the line. That student must either place the next card in a category or move a card already placed, and pass on the stack. The game continues until all cards are placed.

Compare categories and discuss differences.

Challenge your students to link this lesson and their new level of understanding to their learning in their Garden to Table kitchen and garden sessions. Ask them to share the plant parts with the Garden Specialist and Kitchen Specialist and relate them to the vegetables they are growing and eating each session.

Links to school journals:

- From Garden to Plate *Junior Journal* 52, 2016
- Kūmara Treats, *School Journal*, Part 1, Number 4, 2007
- Tons of Tomatoes, *School Journal*, Level 2, November 2014
- Garden with Science, *Connected* 2014, Level 2
- Picking Peas, *School Journal*, Part 1, Number 4, 2010
- What's for Lunch? *Connected* 1, 2006
- Sweet Peas, *School Journal*, Part 1, Number 3, 2002
- The Cabbage Patch Trick *School Journal* Part 1, Number 1, 1991
- Carrot Counting *School Journal* Part 2, Number 3, 1993
- Growing My Name and Eating It *School Journal* Part 1, Number 3, 1990
- Finding Breakfast *School Journal* Part 1, Number 2, 1994
- Nine Lemons *School Journal* Part 2, Number 4, 1990
- The Truth About Brussels Sprouts *School Journal* Part 1, Number 3, 1997
- One Potato, Two Potatoes – Heaps of Potatoes *Junior Journal* 1998
- That's the Idea, *Junior Journal* 44, 2012

WEBLINKS:

Definition of a vegetable: <https://en.wikipedia.org/wiki/Vegetable>



<http://www.vegetables.co.nz/vegetables-a-z/> - a list of vegetables with photos for each one organised into each plant part

Basic information about silverbeet: <http://smartyplants.com.au/2012/09/rainbow-chard/>

Downloads from Garden to Table Resources Portal:

[Plant parts labels](#)

Links to other GTT lesson plans:

[Observational drawing](#)

[Parts of a flower](#)

[Flowers in the garden](#)

[Garden with Science](#)

[Bean Plant](#)

EXTENDING THE TASK:

- Make links to the purpose of various plant parts, e.g. flowers for pollination, roots for water and nutrient transport and anchoring to the soil, leaves for photosynthesis and respiration, at a level appropriate to your class. See the GTT lesson links above.
- There are some beautiful paintings of silverbeet that could be replicated in the classroom. Many are watercolours and highlight the incredible veins of the plant, especially the red-veined varieties – Google or Pinterest search **Swiss chard paintings** for images.



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<https://s-media-cache-ak0.pinimg.com/236x/45/57/26/45572618519a70e7dd28aa68796508d3.jpg>



This painting *Jardin Tropical* by Miriam Brugmann also lends itself to some monochrome art of silverbeet.



The Pop Art Leaf Prints on <http://www.kidscraftroom.com> could be another way to explore print making and silverbeet further.

- Map the origins of different vegetables on a world map. Are there patterns about certain types of vegetables growing in particular places?



- Game: Throw a big dice with a different colour on every face. Each child gets a turn to throw the die. When it lands on a colour they need to name a vegetable or fruit that comes in that colour. No repeats allowed so students need to listen carefully.
- Discuss which vegetables or fruit could be added to each meal of the day.

HOMEWORK TASK:

Students might like to use the vegetables they have at home to make a whole plant. They will need to find an example of a vegetable to represent each part of the plant and lay them together in the image of a plant. They might need reminding that vegetables come in the freezer and in tins. They could take a photo or draw the different elements that made up the parts of a plant.

They could keep a vegetable-eating diary for a week and record every plant and its part they have eaten.