

# FOODPRINT MELBOURNE

## INQUIRY 1

What are the characteristics of Melbourne's foodbowl?

## WORKSHEET 3a

Investigating where food grows:  
Using GIS maps

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### INTRODUCTION

When large amounts of statistical data are gathered from a land area or region, the use of Geographic Information Systems (GIS) helps to make the data meaningful. This activity involves developing GIS skills to manipulate data and generate a map of the location of fresh food produced across Victoria.

Different types of crops grow in different regions of Victoria. Areas on the fringe of Melbourne are important regions for fruit and vegetable production, particularly for highly perishable fruit and vegetables such as berries and lettuce.

Information about agricultural production in Victoria has been used to create an online GIS map. This type of map is called a choropleth map. It is a way of visually representing different amounts of data – in this case, the quantities of various agricultural products that are produced in different regions of Victoria.

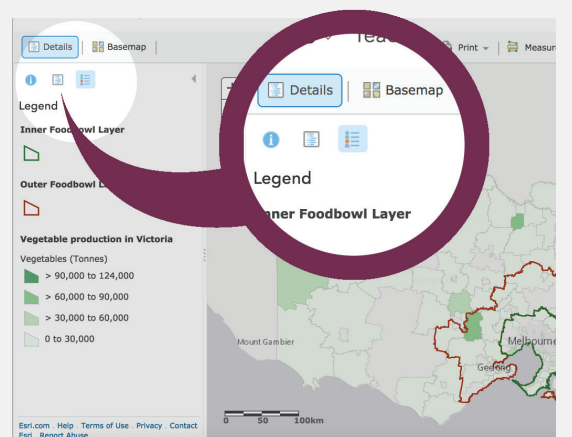
There are different layers that can be switched on and off for different types of crops (e.g. vegetables, grains). Some areas have no colour, because they don't produce that crop. Areas that are darkly coloured indicate that they produce a lot of that crop. The green boundary represents Melbourne's inner foodbowl, and the red boundary represents the outer foodbowl.

### ACTIVITIES

1. This first activity will investigate where broccoli is grown in the inner and outer Melbourne foodbowl.
  - a. Open the Victorian Agriculture Map at <http://arcg.is/1iPGeL> (It may take a moment to load, as the map holds a lot of data)
  - b. Turn off the vegetable layer (by unticking the tick box) and turn on the broccoli layer (scroll down and select the tick box for broccoli). Describe where broccoli is grown in the inner and outer foodbowl regions (you need to zoom in to see the smaller suburbs in the inner foodbowl)

### NAVIGATING THE GIS TEACHING MAP

1. Open the Victorian Agriculture Map at <http://arcg.is/1iPGeL> (It may take a moment to load, as the map holds a lot of data)
2. To choose which crops are displayed you will need to turn layers on and off. Switch to the map Contents view by selecting the icon just underneath the 'Details' box, to the right of the information icon







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Read this article about the best soil for growing potatoes: <https://theconversation.com/the-good-earth-thorpdale-red-ferrosol-and-chip-potatoes-13052>

The article mentions two locations where there is good soil for growing potatoes.

- a. What are the two locations?
  - b. Switch off all other layers, and switch on the potato production layer. Search for the two locations mentioned in the article. Are they significant areas for potato production?
6. Exploring what grows in your local area
- a. Use the map to find your local area. What is produced there? Are the crops perishable, or non-perishable?
  - b. How does food production in your area compare to regions such as Werribee South, Koo-Wee-Rup, Bacchus Marsh, Shepparton and Swan Hill?

### EXTENSION ACTIVITY

#### *How does food production relate to other human-built structures?*

##### *Recycled water*

Recycled water is likely to play an important role in future crop production. It can provide irrigation during times of drought. Recycled water comes from the water used by people and industries, so it makes sense that more recycled water is available from water treatment plants that treat water from larger populations, such as the population of Melbourne.

Turn on the 'Location of water treatment plants' layer in the map (it's at the bottom of the 'Contents' list).

Proportional symbols have been used to show how much recycled water is produced by water treatment plants. This means that larger dots symbolise a water treatment plant that provides a substantial amount of recycled water, whereas smaller dots symbolise smaller plants that produce less recycled water.

1. Where are the largest recycled water plants in Victoria?
2. Are the areas near the recycled water plants important for agriculture? What type of production happens there?
3. Do the Shepparton and Swan Hill areas have access to recycled water?
4. Victoria is likely to experience more frequent and severe droughts in future due to climate change. How should we plan to make sure enough water is available for agriculture in future? What role might recycled water play? Write a short summary statement of what you have found.

##### *Transport*

Change the basemap to the 'Streets' basemap (click 'Basemap' in the top lefthand corner of the screen).

How do regions of production for different types of crops relate to the location of transport routes, such as major roads? Look at the layers for a number of different types of crops. Can you see any patterns in the types of agricultural production that occur close to major transport routes? Write a short summary statement of what you have found.