

YEAR 1 - 2

Lesson 6 – Crunch the Numbers

WA Curriculum Links

Main curriculum area: Mathematics

Year 1

- **ACMMG019** Measure and compare the lengths and capacities of pairs of objects using uniform informal units
- **ACMSP263** Represent data with objects and drawings where one object or drawing represents one data value. Describe the displays

Year 2

- **ACMMG037** Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units
- **ACMMG038** Compare masses of objects using balance scales
- **ACMSP050** Create displays of data using lists, table and picture graphs and interpret them

General capabilities

- Literacy
- Numeracy
- Ethical understanding

Resources

- A3 size 'Vegetable graph' (Toolkit p. 15)
- Small dot or star stickers
- Rulers
- Calculators
- Kitchen gloves – 2 pairs
- Kitchen scales
- 1 set of measuring cups
- 1 large Pyrex or clear plastic bowl
- 500g cucumber or celery
- 5 different whole vegetables e.g. carrot, zucchini, celery stick, green bean, capsicum

Preparation

- Print 'Vegetable graph' in A3 size.
- Ask parents to donate (or loan as appropriate) raw vegetables, kitchen gloves, napkins, kitchen scales, set of measuring cups, large Pyrex or clear plastic bowl.
- Roughly chop cucumber/celery and place into sealed container.

LESSON OVERVIEW

In this lesson students learn about the serve sizes of vegetables and the amount of vegetables they should be eating each day. Students conduct an investigation of a range of vegetables, focusing on their weight, length, colour and texture. Students create a graph to show the favourite vegetables of the class.

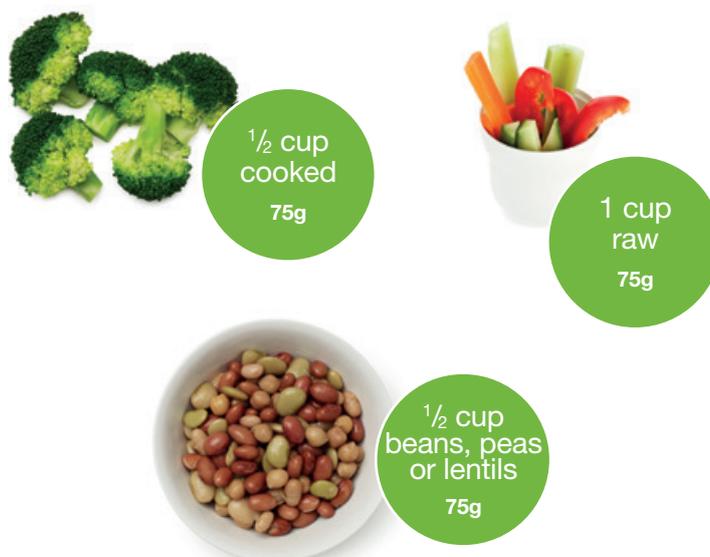
Additional information for teachers

- You can substitute with other vegetables if the vegetables suggested are unavailable or not in season.
- While this lesson teaches children to aim for 5 serves of vegetables, the actual serving recommendations vary across the age groups (shown below), you may use these figures if preferred.

Age	Daily vegetable serves needed
2 – 3	2½
4 – 8	4½
9 – 11	5
12 – 18	5 (girls) – 5½ (boys)

- For further information on serve sizes see <https://www.eatforhealth.gov.au/>.

One serve of vegetables is:



ACTIVITIES

1. Before starting the lesson each student must wash and dry their hands.
2. Ask students how many serves of vegetables you need each day (5 serves) and if they know the amount of vegetables in one serve.
3. Demonstrate the serving size for raw and cooked vegetables using measuring cups ($\frac{1}{2}$ cup for cooked vegetables, 1 cup for raw vegetables).
4. Choose 2 students to come to the front of the class. Students will put on kitchen gloves and measure out one cup of chopped raw vegetable and then 5 cups of chopped raw vegetables into the bowl and show the rest of the class what these amounts look like.
5. Remind students that it is important to eat a rainbow of different vegetables and that eating 5 cups of carrots will not be as good for you as eating 5 cups of different vegetables. It is also healthy to eat a mix of raw and cooked vegetables.
6. Show students the whole vegetables and ask them to comment on their
 - ▶ Colour and texture
 - ▶ Length and weight
7. Ask students to arrange the vegetables in order from:
 - ▶ Lightest to heaviest
 - ▶ Shortest to longest
8. Discussion questions:
 - ▶ Which vegetable was the heaviest and which was the lightest
 - ▶ Which vegetable was the longest and which was the shortest?
 - ▶ How did the vegetables differ in colour and texture?
9. Put up the A3 size 'Vegetable graph' in the classroom.
10. Ask students to think about which is their favourite vegetable from the options on the graph.
11. Give each student one of the coloured dot stickers. Each student will put a dot in the square above their favourite vegetable.
12. Discussion questions:
 - ▶ Which is the most liked vegetable in this class?
 - ▶ Which is the second most liked vegetable?
 - ▶ Which is the least liked vegetable?
13. Remind students that it is important to reduce food wastage and rather than throwing the vegetables in the bin a use could be found for them. Some ideas for using the leftover vegetables are:
 - ▶ Cut up whole vegetables and share these and the chopped cucumber/celery as a class for Crunch&Sip®
 - ▶ Donate whole vegetables to the school Canteen
 - ▶ Use vegetables to make a vegetable packed frittata, savoury muffins or pikelets
14. Now is a good time for a Crunch&Sip® break!

Vegetable graph

Favourite vegetables in our class

Vegetable images from Go for 2&5® © State of Western Australia, 2016, reproduced with permission

Vegetable record



Name: _____

Date: _____

Time	Vegetable(s) eaten	Raw or cooked?	Amount of vegetable in cups	Number of vegetable serves
Total serves:				

Remember that one serve of vegetables is equal to ½ cup for cooked vegetables and 1 cup for raw vegetables

YEAR 3 - 4

Lesson 6 – Crunch the Numbers

WA Curriculum Links

Main curriculum area: Mathematics

Year 3

- **ACMNA057** Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies
- **ACMSP069** 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

Year 4

- **ACMNA076** Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder
- **ACMSP096** Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values

General capabilities

- Numeracy
- ICT

Resources

- Worksheet 1 – 1 per student
- Worksheet 2 – 1 per student
- Plickers app and class set of Plickers cards (optional)
- Calculators
- Kitchen gloves – 2 pairs
- 1 set of measuring cups
- 1 large Pyrex or clear plastic bowl
- 500g cucumber or carrot (or other inexpensive vegetable)

Preparation

- Print worksheets
- Prior to the lesson ask students to keep a vegetable record using Worksheet 1. Over a 24 hour period students will record each time they eat vegetables and estimate how many cups they have each time.
- Enter the questions and answers for activity 8 and 11 into your Plickers library (alternatively, ask the questions verbally).
 - ▶ Question 8a answers – 1, 5, 17.5, 35
 - ▶ Question 8b answers – 0.5, 5, 17.5, 35
 - ▶ Question 11 answers – 2 or less, 3, 4, 5 or more
- Ask parents to donate (or loan as appropriate) raw vegetables, kitchen gloves, set of measuring cups, bowl.
- Roughly chop cucumber/carrot and place into sealed container.

LESSON OVERVIEW

In this lesson students learn about the serve sizes of vegetables and the amount of vegetables they should be eating each day. Students calculate the number of serves of vegetables they eat each day, and display this data for the class in a table and column graph.

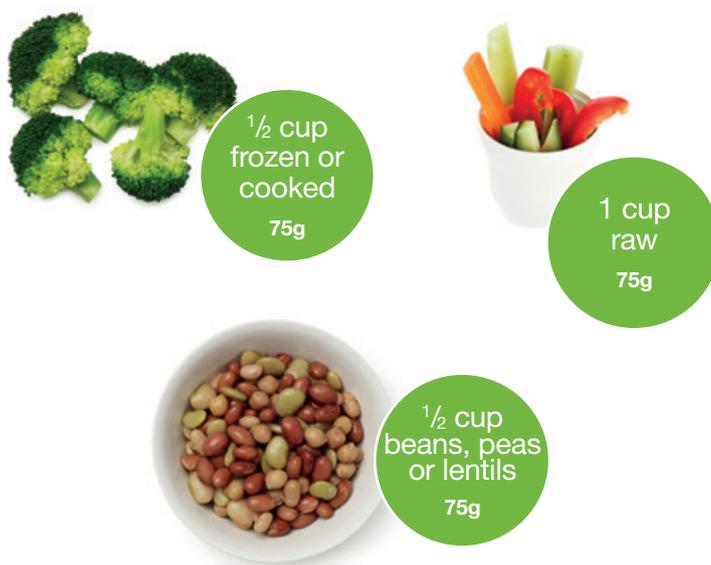
Additional information for teachers

- Plickers is a free application for teachers that can be downloaded from plickers.com. It allows you to collect instant feedback from your students to check their understanding of content and allow students to answer honestly without worrying what other classmates think about their answers. Setup involves downloading the app onto your smartphone or tablet, printing a class set of Plickers cards, and entering questions into the app.
- While this lesson teaches children to aim for 5 serves of vegetables, the actual serving recommendations vary across the age groups (shown below).

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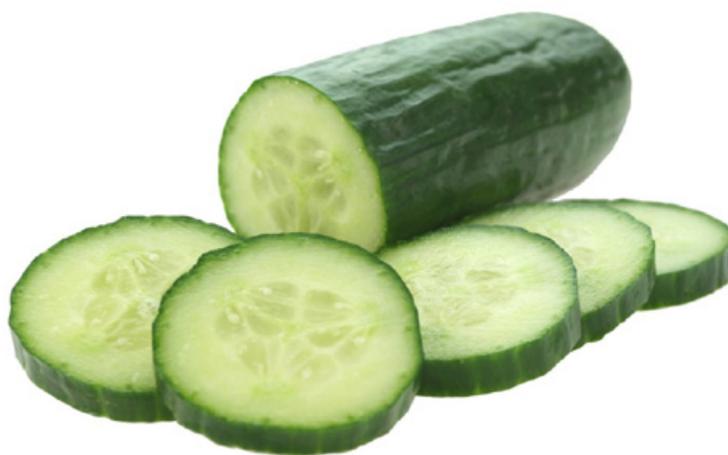
- For further information on serve sizes see www.eatforhealth.gov.au

One serve of vegetables is:



ACTIVITIES

1. Explain that although we know vegetables are good for you, we also need to know how many serves you should be eating to stay healthy.
2. Demonstrate the serving size for raw and cooked vegetables using measuring cups ($\frac{1}{2}$ cup for cooked vegetables, 1 cup for raw vegetables).
3. Ask students if they know how many serves of veg they should eat each day (5 serves).
4. Choose 2 students to come to the front of the class. Ask students to wash and dry their hands and put on a pair of kitchen gloves before measuring out:
 - ▶ 1 cup of raw chopped vegetables
 - ▶ 5 cups of raw chopped vegetables
5. Discussion questions:
 - ▶ What does the 5 servings of raw vegetables represent? (the amount that most children should be eating every day)
 - ▶ Are you surprised that you should be eating this amount of vegetables?
6. Remind students that it is important to eat a rainbow of different vegetables and that eating 5 cups of carrots will not be as good for you as eating 5 cups of different vegetables. It is also healthy to eat a mix of raw and cooked vegetables.
7. Hand out Plickers cards to each student.
8. In pairs students will calculate the following and use the Plickers cards to share their answers (or ask students to share their answers verbally):
 - ▶ How many cups of vegetables would you need to eat **each week** if you only ate **raw** veg
(1 cup x 5 serves/day x 7 days = 35 cups)
 - ▶ How many cups of vegetables would you need to eat **each week** if you only ate **cooked** veg
($\frac{1}{2}$ cup x 5 serves/day x 7 days = 17.5 cups)
9. Ask students to take out their 'Vegetable record' (Worksheet 1).
10. Students will add up the total number of vegetables serves they ate over 24 hours.
11. Using the Plickers app (or take a tally on the whiteboard), see how many serves of vegetables the class ate over the 24 hours (2 or less, 3, 4, 5 or more).
12. Ask students to record the aggregated data in the table on Worksheet 2.
13. Students will then create a column graph to present this data using Worksheet 2. This can be completed individually or in pairs.
14. Share the cut up vegetables for your Crunch&Sip® break!



Vegetable record



Name: _____

Date: _____

Time	Vegetable(s) eaten	Raw or cooked?	Amount of vegetable in cups	Number of vegetable serves
Total serves:				

Remember that one serve of vegetables is equal to ½ cup for cooked vegetables and 1 cup for raw vegetables



Crunch the numbers

Activity 1.

Fill the table below.

Number of vegetable serves	Number of students
2 or less	
3	
4	
5 or more	



Activity 2.

Display your data in a **column graph** on the graph paper below. Make sure to label your x-axis and y-axis and give your graph a title.

Title:

