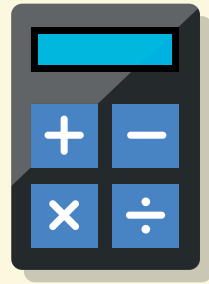# Graphing and analysing superannuation data

This sequence is intended as a framework to be modified and adapted by teachers to suit the needs of a class group.

Resources needed

- Superannuation – Explainer

- Superannuation – Investigation

- Investigation super – Data sheet

- Computer with spreadsheet software for each student

Suggested activity sequence

Part A: Exploring superannuation

- Use a *grouping strategy* to organise students in groups of 3 or 4.

- Students read the *Explainer* and groups decide on a definition of superannuation and write their definition on the board.

- When all definitions are displayed, discuss the concept of superannuation and develop a simple class definition.

Part B: Calculating super

1. Explicitly teach students how to calculate the superannuation guarantee using a gradual release of responsibility model.

   To calculate the money your employer puts into your super account for you:

   $$\text{Super} = 11.5\% \times \text{salary}$$

   For example: You're a third year apprentice plumber and your weekly wage is $669.53 per week. How much super should your employer pay into your super account?

   $$\text{Super} = 11.5\% \times \text{salary}$$
   $$= 0.115 \times \$669.53$$
   $$= \$76$$

2. Ask students to do 5 simple calculations and a sixth one which is a bit more challenging – perhaps a 'working backwards' question, for example, if your employer pays $72.30 into your super account, what's your salary?

   $$\text{Super} = \text{Percentage} \times \text{Salary}$$

   Dividing both sides of the equation by the

   $$\frac{\text{Super}}{\text{Percentage}} = \frac{\cancel{\text{Percentage}} \times \text{Salary}}{\cancel{\text{Percentage}}}$$
   $$\frac{\text{Super}}{\text{Percentage}} = \text{Salary}$$

   $$\text{Salary} = \frac{\text{Super}}{\text{Percentage}}$$
   $$= \frac{72.30}{0.115}$$

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Substitute in known values:

Part C: Exploring super data

1 Discuss with students some of the key concepts around super:

- Why do we need super – what about the age pension?

- How much might you need to retire comfortably?

- How long does retirement last?

- Why do we need to start so young?

- How else can you increase your super?

- What happens if you're out of the workforce for a while?

- Do they think women and men are likely to have the same amount of super? Why, why not?

2 Model the task students will do by doing a simple example as a whole class. If you're all working together on this, everyone will need access to a computer with spreadsheet software.

This is the weekly wage of 5 people in a netball team. Two people in the team didn't want to share their information.

$1,845 $1,529 $2,135 $1,150 $986

	A	B	C	D
1		Weekly pay	Employers super contributions	Total cost to employer
2				
3				
4				
5				
6				
7	Average (mean)			
8	Median			

- Set up a spreadsheet and put the weekly pay data in excel.

- Sort from lowest to highest.

- Put in a formula to calculate super (=0.115*B2).

- Put in formulas to calculate average and median and total cost to employer (for example, = AVERAGE (C2:C6) and = MEDIAN (C2:C6) and = B2 + C2).

- Discuss with students about the average and the median being the same.

3 The rest of the team have decided they will

Category	Number of people in this category
0-999	
1000-1999	
2000 +	
Total	*Put in a sum formula here*

share what they get paid too. One gets $950 and the other gets $3,428.

- Add rows, sort, check the formulas then examine the mean and median. Again, discuss what's happened to these 2 measures of central tendency.

- Set up this table on your spreadsheet.

- Tally the number of people with wages within each category.

- Add the formula to calculate total people – discuss with students what they expect the figure to be and what should they do if it's not.

- Add a chart. Try both a line graph and a column graph, change the colours and add titles.

4 Students complete the *Investigation*. To do so, they will need copies of the *Data sheet.*

5 Walk the students through the instructions, reminding them of the similarities to the problem you modelled.

6 Students may benefit from working individually and/or in small discussion groups.

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