**Name: Cade Leeming Teacher: Ms Torrance**



**Year 8 Mathematics**

**Statistics Investigation**

* Investigate techniques for collecting [data,](https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/mathematics-v8/overview/glossary/data) including [census,](https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/mathematics-v8/overview/glossary/census) sampling and observation [(ACMSP284)](https://k10outline.scsa.wa.edu.au/home/teaching/codes/mathematics/year-8/acmsp284)
* Explore the practicalities and implications of obtaining [data](https://k10outline.scsa.wa.edu.au/home/teaching/curriculum-browser/mathematics-v8/overview/glossary/data) through sampling using a variety of investigative processes [(ACMSP206)](https://k10outline.scsa.wa.edu.au/home/teaching/codes/mathematics/year-8/acmsp206)
* **WRITE YOUR ANSWERS USING CALIBRI FONT.**



**Problem: You are a project planner for a suburb/town. You need to make a proposal for additional facilities in your suburb/town using Census data. You will need to decide how you will collect feedback on your proposal by describing the method you will use to select people to give you feedback. You will need to complete a report to summarise your findings and process.**

Your teacher will be randomly allocating you a suburb or town within WA.

**Part 1 – restate the problem in your own words.**

1. Using your own words, summarise what you have been asked to do.

I need to make a proposal for ideas about additional facilities in my suburb/town using data from the Census. I also need to choose how I will collect feedback from my idea by describing what method I’ll use to choose who I’ll ask feedback from. While completing a report to summarise everything.

1. Give a definition for a census in your own words:

A census is investigating the entire population group.

1. Give a definition for a survey in your own words:

A survey is a method of collecting information using questions.

1. Give a definition for a sample in your own words:

A sample is an investigation on a part of a group; it has multiple types.

# Part 2 – Census data

What suburb/town have you been allocated?

Yanchep

Find this suburb/town on <https://www.abs.gov.au/census>

1. You need to screenshot/snip tool five pieces of data from the 2021 Census that you will use to profile your suburb.

Write one sentence under each screenshot explaining what the data shows.

eg. High number of 1-5 year olds in my suburb.

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| ***Data 1*** |
| High number of 0-14 year olds(young people) in my suburb. |
| ***Data 2*** |
| High number of Families with Children in my suburb. |
| ***Data 3*** |
| High number of people with Mental health conditions in my suburb. |
| ***Data 4*** |
| High number of Primary school students in my suburb. |
| ***Data 5*** |
| High number of Households with Families in my suburb. |

2B) Write a brief summary of the profile of your suburb based on the data you have collected.

**In my suburb they are a high number of people that are in the age group of 0-14, it also has a high number of primary school students in this suburb. And most households have families with most are couples with children. High number of people also have Mental health conditions in my suburb.**

# Part 3 – Recommendations

What facility are you going to recommend for your suburb? How did the data you selected inform you that the suburb needed it?

**I am suggesting a movie theatre, there are a high number of younger people and they don’t have access to a movie theatre. The closest theatre is in Currambine which is a 30 minute drive.**

# Part 4 – Sample or census

1. What are the different types of sample methods that you could use? What are the pros and cons of each method? Give an example of how you could apply this sample method.

## Samples – Less time taken, less accurate, costs are low

Random Samples: Surveying a random number – pros = simplicity and not being bias, cons = time needed to gather the full list of a specific population. E.g. Teams for a game are chosen by putting everyone's name into a hat, and then choosing the names at random for each teams.

Systematic Samples: Selecting an individual at fired intervals – pros = Simplicity, cons = Biased sampling. E.g. Surveying every 10th person walking in front of Coles.

Stratified Samples: Dividing the population into categories and taking a random sample – pros = collects key population traits, cons = selecting the appropriate sections for a sample can be difficult. E.g. Dividing a populations in age groups and surveying a specific age group.

1. Will you conduct a census or sample to get feedback? Explain.

**I am going to use a sample to get feedback. Because my idea is coming from the fact that they are many young people in Yanchep, I am going to use a sample to get feedback from young people.**

1. Who is your target population for sampling?

**Primary – High school students**

1. Which method will you use to get feedback on your facilities proposal? Explain

**I will use a Stratified sample to get feedback on the proposal. I have chosen this so that I can survey my target population for sampling well.**

# Part 5 – Report

Write a report summarising your findings and recommendations of the census data and explain your strategy for getting community feedback on your proposal.

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| **Paragraph 1**  *Briefly explain what you have been asked to do* | I am creating a proposal for additional facilities in my suburb/town using data from the Census. I also choose how I will collect feedback from my idea by explaining what methods I will be using and from whom I will be asking feedback. |
| **Paragraph 2**  *Write a summary of the profile of your suburb using census data* | My Suburb is a larger suburb with 11,000 people living there. More then 46% of families in the suburb is a couple family with children, and there is a high number of 0-14 year olds(young people) in my suburb. Most people in my suburb are young and are Primary school students. There is also a high number of people with Mental health conditions in my suburb. |
| **Paragraph 3**  *Write a paragraph explaining what facility the*  *suburb needs and why* | I am suggesting a movie theatre, because there is a high number of younger people in my suburb, and they don’t have access to a movie theatre. The closest theatre is in Currambine which is a 30-minute drive which is not practical in anyway.  Young people should have the ability to enjoy watching films at a place where they can also socialize. |
| **Paragraph 4**  *Summarise the*  *strategy you will use to get feedback on your proposal* | My strategy is to use a Stratified sample to get feedback on the proposal. This is because I can survey the Primary ~ High school student population sampling good. This is also my target population which is who I want to target to get feedback on. |