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| Name: | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | Date:\_\_\_\_\_\_\_\_\_ |
|  | **Year 12 Essentials 2021 – Statistical Investigation 2**  **Probability Simulations**  **Conditions:** 2 lessons where students will utilise class time to write a report to answer the question. The report will be collected after each lesson and after the second (final) lesson the work in class will be handed in and graded.  **Weighting 12 %**  **In-class Date 1: \_\_\_\_\_\_\_\_\_\_\_ In-class Date 2 (this is the due date): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Mark \_\_\_\_\_ /\_\_\_\_\_\_** | |

In March 2020, coronavirus was declared a global pandemic, causing anxiety and uncertainty across Australia. Three in ten Australians are now experiencing food insecurity had not gone hungry before the pandemic. Young people are being hardest hit by the impact of COVID-19 restriction on food supply change.

Danielle is a student leader and wants our school to run a lunch program for students who are hungry, but do not know how many are at risk. Rather than survey students, she decides to run a simulation for all six Year 12 General Mathematics classes, to determine whether offering a foodbank lunch food is necessary.

Knowing the expected probability is one in five (1 in 5), **create and run a simulation of the probability**, t*o find out how many students would require a meal at lunch*?

Following the statistical investigation process, you will need to write a report that briefly outlines the process. Then conduct the simulation and make recommendations to answer the question. Be sure to discuss if there are any biases, and why we should run a simulation instead of another type of data collection.

Lastly, you will need to state if the school should run a foodbank, and how many meals should be supplied each day for the school. Our school has approximately 2000 students with an average class size of 23.

**Your report will need to be handwritten and collected after each of the two lessons.**

The steps in the statistical investigation process:

• clarify the problem and pose one or more questions that can be answered with data

• Design and implement a plan to collect or obtain appropriate data

• select and apply appropriate graphical or numerical techniques to analyse the data

• interpret the results of this analysis and relate the interpretation to the original question

• communicate findings in a systematic and concise manner.