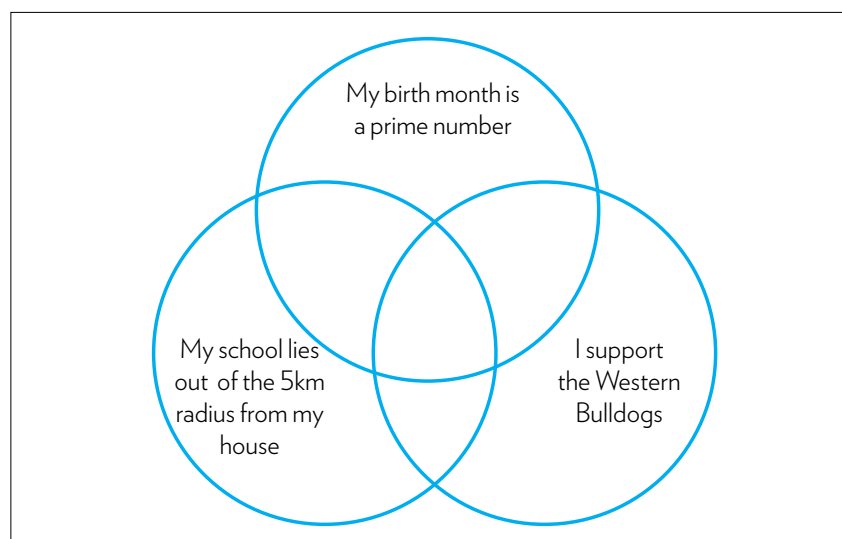# 7-9: REMOTE MATHS
EDITION 13

PROBABILITY AND STATISTICS - WARM UPS

Mathematical language: Venn diagram, probability, mean, average, chance.

TASK 1: VENN ROLL CALL

Using the Venn Diagram below, place your name in the appropriate space.

To help you locate 5km from your home place your address in the search section of this interactive site:
www.theage.com.au/national/victoria/what-do-victoria-s-stage-four-lockdown-restrictions-mean-for-you-20200802-p55hqx.html

- What is the probability of students in your class that fall in each section?
- **Extending prompt:** Allocate a student to design a Venn diagram sign-in roll for the class. Then calculate the probabilities of students falling in each section.

TASK 2: MONEY, MONEY, MONEY

Ellen has a $5, a $10, a $20 and a $50 note in her wallet. She closes her eyes and removes one of the 4 notes from her wallet.

- What is the probability that the total of the three notes remaining in her wallet is greater than $70?

TASK 3: MARBLES

There are red, green and blue marbles in a container.

The chance of picking a red marble is 4 out of 10, $\left(\frac{4}{10}\right)$.
Some marbles are taken out of the container.

Now the chance of picking a red marble is 4 out of 8, $\left(\frac{4}{8}\right)$.

- Which marbles were taken out?

TASK 4: BASKETBALL

After having played three basketball games, Kate had scored an average of 18 points per game. After her fourth game, her scoring average had dropped to 17 points per game.

- How many points did Kate score in her fourth game?

TASK 5: ALWAYS, SOMETIMES, NEVER

Below are some statistical statements. Can you decide whether each is always, sometimes, or never true?

- In a school, it will be someone's birthday every day.
- The mean, median and mode of a set of numbers can't all be the same.
- If I roll a die 100 times, I will get about the same number of 1s as 6s.
- If I flip a fair coin 20 times, I will get 10 heads.
- The mean cannot be less than both the median and the mode.
- Half a class of students that sat a test, scored less than the average mark.

If they are sometimes true, give examples or conditions are which they are true and under which they are false.

If they are always true or never true, explain your reasoning in each case.

Extending prompt: Can you adapt any of the statements that are sometimes true to make them always or never true?

Look out for more tasks next week!