Cobram Secondary College
Year 7 to 10 Mathematics Tasks Term Two 2021 Remote Learning

Number and Algebra	Measurement and Geometry	Statistics and probability
Practise your times tables Create Flash cards for the times table you have the **most** trouble with. The multiplication on the front of the card (e.g. 7 x 8) and the answer on the back of the card (56). Use these to practice these timetables. Challenge someone at home to see if they know the answers.	**Making shapes** Using a piece of string, wool or ribbon etc that is 30cm long see how many different types of shapes that you can make and what are the dimensions (length, width etc) are. Draw each of them and label the dimensions of each. Will a longer piece of string let you make more shapes?	**Bar Graph** In each room of your house count the number of right angles that you can see then create a bar graph representing the number of right angles in each room.
Playing card arithmetic Using a deck of cards (Ace is 1, Jack is 11, Queen is 12 and King is 13) flip over two cards and see if you can multiple them together, add them together, subtract them, and finally see if you can divide them.	**Estimating length** Looking around the room find a group of items that add up to exactly five metre in length. E.g. a pencil, a sheet of paper, and a pair of shoes. Draw a diagram of the items, record their individual lengths and the total length.	**Dicey dilemma** Tania and Derek are playing a game with a dice. They roll the dice. If the number is odd, Tania wins that round. If the number is a six, Derek wins. (It doesn't matter who throws the die.) Who is more likely to win the game? Why? How could you make the game fair?
Nice or Nasty? Find a partner and a 6-sided dice (if you don't have one make your own out of paper). Each player draws a set of four boxes like the one at the right. Takes turns to roll the dice and decide which of your four boxes to place that number. Do this until all four boxes full. Whoever has the larger four-digit number is the winner.	**Cook up a storm!** Follow a recipe and cook something delicious for your household. Do you need to change the amounts of each ingredient for the number of people who are going to eat it? Record what the new quantities are.	**Looking at number combinations** How many different ways can the numbers 1, 2, 3, 4, 5 be written? Write down each of the different combinations. What happens if the numbers 1 and 2 have to be placed side by side how many different combinations can you find?
Cryptarithms A **cryptarithm** is a mathematical puzzle where the digits in a sum have been replaced by letters. In each of the puzzles below each letter stands for a different digit None of the numbers start with the number 0 (e.g 035). Can you find a solution to all of these cryptarithms? Can you make your own ones? 	**Repeating Galileo's Experiment: Gravity and Acceleration** What you'll need to get started: One ball, one ramp (smooth piece of cardboard will work just fine), watch/phone/stopwatch, one measuring ruler /tape measure. To begin, roll the ball down your makeshift ramp and determine the amount of time it took for the ball to reach the bottom. Do this over and over again from varying points on the ramp (halfway up, a quarter of the way up, etc.) and change the slope of the ramp. Ensure that you record the results of each trial run. What did you notice happened with the time when you changed the slope and the position?	**Olympic Maths** In 1908 the Olympic Games were held in London. Then, just after World War 2 they were again in London in 1948. The 2012 London Olympics were another 64 years later. Find the results for the 50m freestyle event at each games How did the results differ? Could you have predicted the results? Perhaps more importantly, what's the reason for your answer? What about the results for 2016, what would you predict?
Where can we visit? Choose a number between 1 and 100. Once you have that number you can only times it by 2, divide it by 2, add 5 or minus 5. How many numbers between 1 and 100 can you land on? EXAMPLE: If you started at 42 then you could go to: 42- 5= **37**, 42 + 5 = **47,** 42 x 2 = **84,** 42 / 2 **= 21.** 37, 47, 84, 21…. You can visit a number more than once. Is it possible to visit every number between 1 and 100? What happens if you start at a different number	**Challenge your maths skills!** Participate in activities in the Victorian Maths Challenge http://vmc.global2.vic.edu.au/	**Number combinations challenge** What happens if 3 and 4 have to be placed side by side and also have to be the first two numbers how many combinations can you make? Can you explain the changes to the number of combinations for each scenario?