

The Swot Shop

Maths Talent Program

Year 4,5

Maths Talent C

Sample Lesson with Teacher Instructions

The Swot Shop

This is a sample lesson from the **Maths Talent Program – Maths Talent C suited for Year 4,5 students**. It includes basic teacher instructions. The lesson runs for 90 minutes

All Swot Shop Programs are developed specifically for bright, gifted and motivated learners.

The Maths Talent Program is conducted in ability streamed classes and taught by a qualified and experienced teacher.

The program is developed to enrich, enhance and complement the learning that students experience in school settings.

To learn more please contact us on (02) 9634 2000.

MATHS TALENT C

Sample Lesson

Maths Quiz

Allow students five minutes to complete the quiz (try to minimise copying). Have students swap booklets and mark each other's work with a tick or cross only. The booklets are to be returned to their owners and the questions must be explained with relevant working and/or diagrams on the whiteboard. Students must show, in red pen, the correct answer and working for any quiz answers where they made an error. Ensure that students are given an opportunity to learn from their mistakes and ask for help with questions they did not understand. The results are to be recorded on the Maths Quiz sheet in the back of the roll.

Discuss and correct homework.

Problem Solving

Students, in pairs, use coloured tiles to solve the problems outlined on the worksheet. Following a detailed discussion allow the students time to solve the first problem. Encourage students to share their ideas and answers with the class. Proceed in the same manner to complete the second problem.

Eight Digits

Distribute the cards and numbered counters and explain the task as outlined on the card. Once a student has placed the numbered counters on the card it should be checked by the teacher or another student sitting at the same table.

Tree Diagrams

Provide each table with a tray of coloured teddies or coloured tiles. (Each tray should contain 6 red, 6 yellow and 6 green.) Students are to take turns in placing three different coloured teddies or tiles in a row such that their row is different from those already placed on the table. The final display should look like:

R G Y
R Y G
G R Y
G Y R
Y R G
Y G R

Students should draw up their list in their exercise books.

Ask the class how they can be sure that all possibilities have been found. Use this to introduce the tree diagram as a means of ensuring all possibilities have been found. Assist the students to complete the tree diagram on the worksheet.

Game: Cross Overs

Refer to the enclosed instruction sheet.

Homework

Students complete a tree diagram to solve the problem outlined on the worksheet.

Equipment

- numbered counters 1 - 10
- Coloured tiles
- trays containing 6 red, 6 green and 6 yellow teddies or coloured tiles – class sets
- ten-sided dice – 4 per class



Score:
 / 5

Maths Quiz

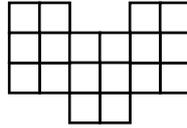
Write the answers to the following questions in the space provided. Where necessary, you should do your working out on this sheet.

1.	On the scales my weight is 80 kg. The doctor has advised me to lose a quarter of my weight. What does the doctor want my scales to read?	
2.	How many square numbers lie between 40 and 60?	
3.	In my latest game of ten-pin bowling, I scored 7, 5, 5, 7, 6 with my first five bowls. What was the average of these scores?	
4.	On a set of scales, there is one eraser and four identical paper clips on the left pan. If the right pan has two of the same erasers, how many paperclips would balance one eraser? 	
5.	On our last holiday up the coast, my mother did some of the driving but my big brother drove four times as far as her as he needed to practise for his licence. If the total trip was 120 km, how far did my brother drive?	

PROBLEM SOLVING

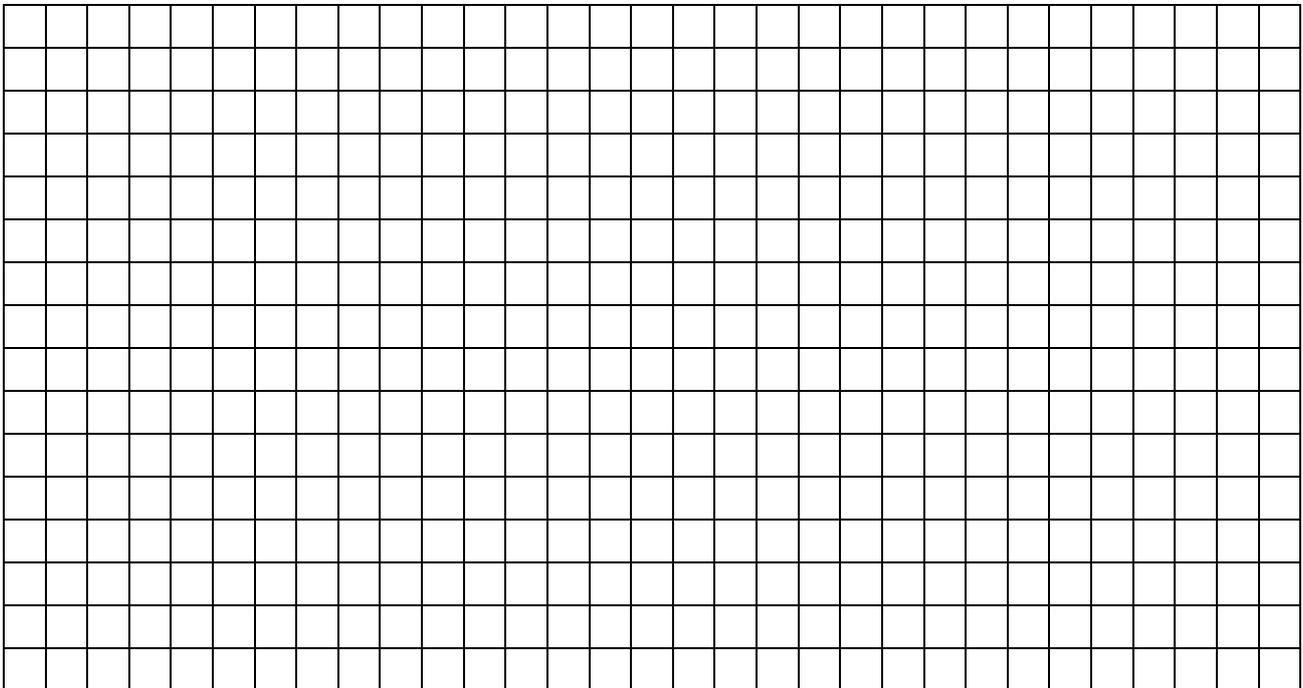
Billy, Susan and Jose bought just enough fencing (22 metres) to fit exactly around their garden. Now, they want more space for planting, but they do not want to buy more fencing. Create a new garden plot that has a larger area without increasing the perimeter.

Use 18 Colour Tiles to model the garden plot. Each square tile represents a square metre of the garden.



Add additional Colour Tiles and rearrange them to form a garden plot with the same perimeter, but a larger area than the original garden plot.

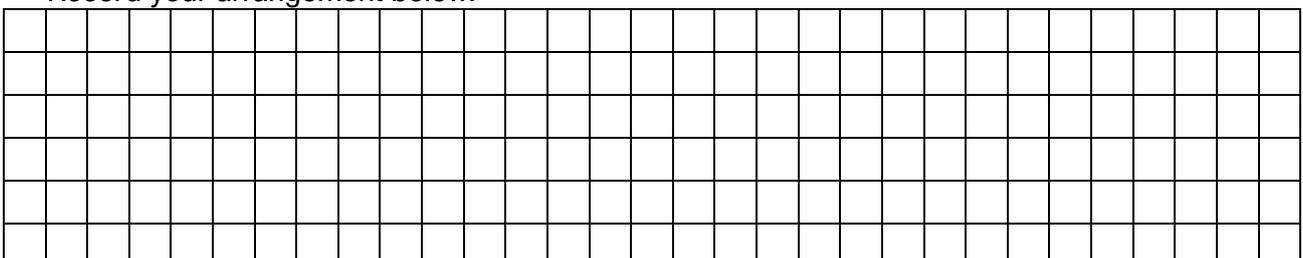
Record your designs below.



Suppose you are having a party and want to put small square tables together to make a large rectangular table. Only one person can sit at the edge of each small table. What is the smallest number of tables you need to seat 12 friends?

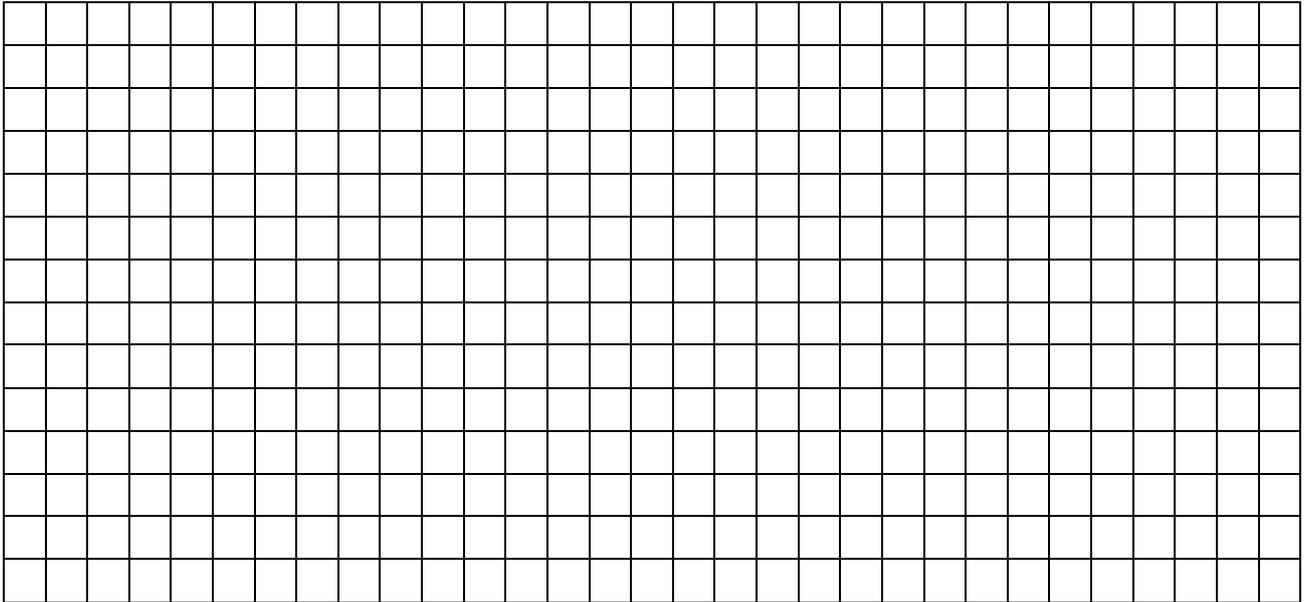
- Use as few Colour Tiles as necessary to model a rectangular table that will seat 12 friends.
- At least one complete edge of each tile must touch on complete edge of another tile.

Record your arrangement below.



What is the smallest number of tables you need to seat 16, 20 and 50 friends?

Draw your table arrangement below.

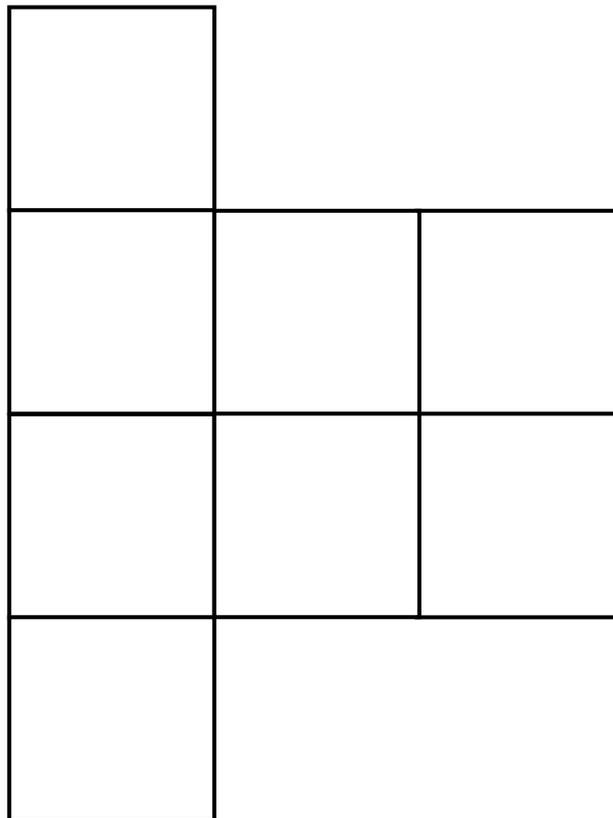


Can you explain a way to determine how many tables you would need for any number of friends? You may draw pictures to explain your thinking.

EIGHT DIGITS

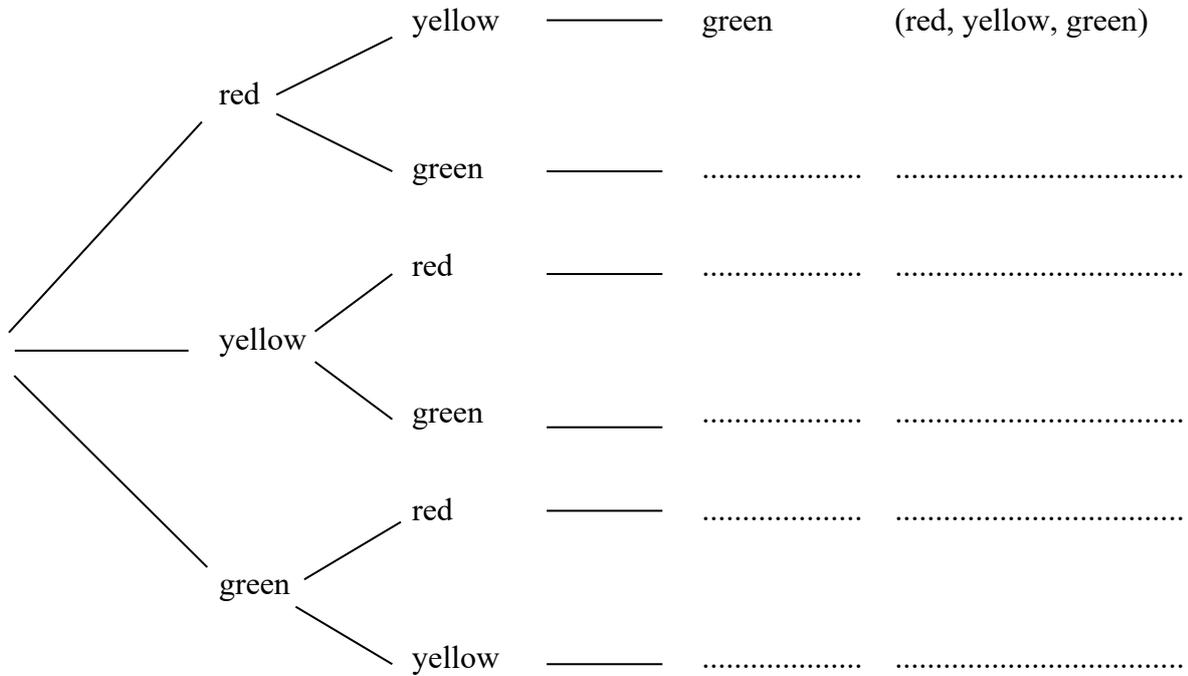
Equipment: Counters numbered 1, 2, 3, 4, 5, 6, 7, 8.

Task: Place the counters on the pattern below so that two consecutive numbers are never adjacent (either vertically, horizontally or diagonally).



TREE DIAGRAMS

This tree diagram shows all the different ways three teddies (red, yellow and green) can be placed in a straight line.



Game: Cross Overs

Divide the class into table groups. Each group will need one ten-sided die and each student will need a gameboard and pencil.

The goal of the game is to equal the total of 20 in either direction on the gameboard. One player from each group is selected to roll the die for the round. The die is rolled and each player records that number somewhere on the cross. Four more rolls are taken to fill the cross for a total of five rolls. Once a number has been recorded into a particular space, it cannot be erased.

Using either addition or subtraction, each row is calculated and compared to the other player's totals.

Players can earn 5 points for any row that equals 20 exactly, 2 points if their total is two less or greater than 20, and 1 point for being closer to twenty than any other player for that row.

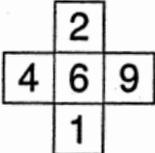
Play continues for a set period of time. The player with the most points wins.

Example:

Rolls: 4, 6, 9, 2, 1

Row 1: $4 + 6 + 9 = 19$

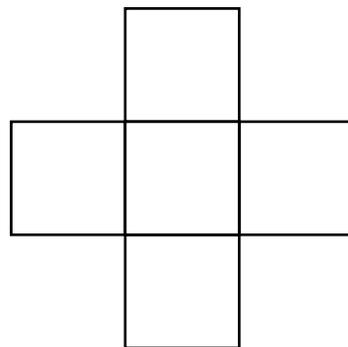
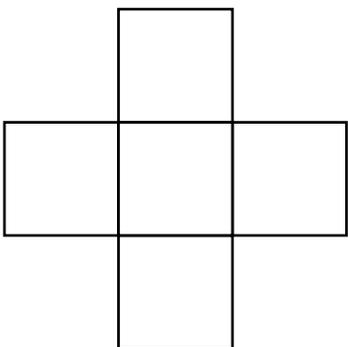
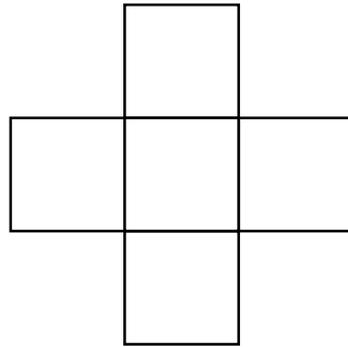
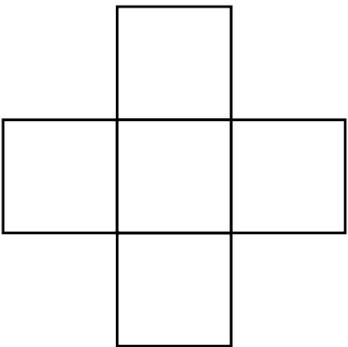
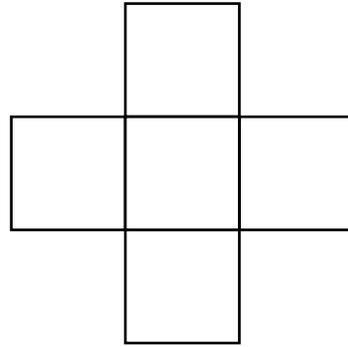
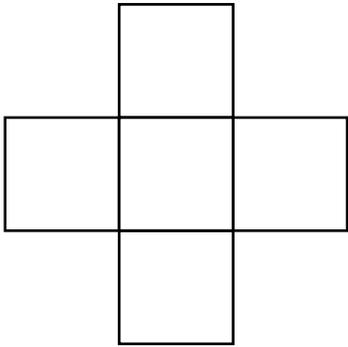
Row 2: $2 + 6 + 1 = 9$



	2	
4	6	9
	1	

To determine if Player One earns more points on Rows 1 and 2, they must compare it with the other players' gameboards.

CROSS OVERS



Homework

Draw a tree diagram to show the ways that four teddies (red, yellow, blue, green) can be placed in a straight line.

