

# The Swot Shop

## Maths Talent Program

### Year 3,4

### Maths Talent D

### Sample Lesson with Teacher Instructions

# The Swot Shop

This is a sample lesson from the **Maths Talent Program – Maths Talent D suited for Year 3,4 students**. It includes basic teacher instructions. This lesson runs for 60 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 D

## 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.

The solution to last week's homework is in the students' booklets. Discuss the solution with the students and answer any queries they may have.

### Pentominoes

Work through the activities with the students.

### Game: Dice Combo

Refer to the enclosed instruction sheet.

### Homework: Target Practice

Discuss the first puzzle with the students to ensure all students understand the homework task.

### Equipment

- coloured tiles
- plastic pentominoes
- two ordinary dice per pair of players

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## Maths Quiz

Score:

/ 5

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

1.	If yesterday was Wednesday, what day will tomorrow be?	
2.	On an ordinary six-sided die, three of the faces represent odd numbers. What would be the sum of these odd numbers?	
3.	A net of a solid shape consists of a square and four triangles. What solid will this make?	
4.	The scales indicate that I weigh 42 kg. My brother weighs twice as much. If we both stood on the scales together, what would the reading indicate?	
5.	The Vet advised that I give each of my two cats three tablets each day. If the bottle contained 60 tablets, after how many days would it be empty?	

## PENTOMINOES

Make this shape with five coloured tiles. This shape is called a Pentomino.



It is possible to make 12 different pentominoes by joining five squares edge to edge. Two pentominoes are the same if they can be exactly matched by turning or flipping.

Use coloured tiles to make a pentomino and then record it on the lined paper provided. Continue until you have made and recorded all 12 pentominoes.

### *Area and Perimeter*

Each pentomino has an area of five square units.

This pentomino has a perimeter of 12 units.



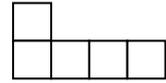
- Find the perimeter of each pentomino. Do they all have the same perimeter?
- If two geometric shapes have the same area, do they all have the same perimeter?

### *Open Boxes*

Predict which pentominoes will fold up into an open box. Mark an X in the square you think will be at the bottom of the box.

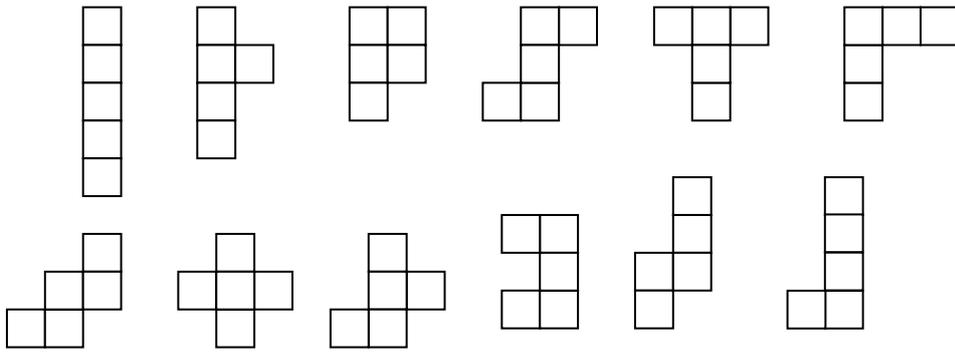
## PENTOMINOES – Teacher’s Sheet

Make this shape with five coloured tiles. This shape is called a Pentomino.



It is possible to make 12 different pentominoes by joining five squares edge to edge. Two pentominoes are the same if they can be exactly matched by turning or flipping.

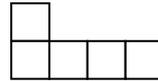
Use coloured tiles to make a pentomino and then record it on the lined paper provided. Continue until you have made and recorded all 12 pentominoes.



### Area and Perimeter

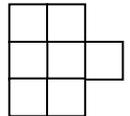
Each pentomino has an area of five square units.

This pentomino has a perimeter of 12 units.



- Find the perimeter of each pentomino. Do they all have the same perimeter?
- If two geometric shapes have the same area, do they all have the same perimeter?

*This pentomino has a perimeter of 10 units. All the other pentominoes have a perimeter of 12 units.*

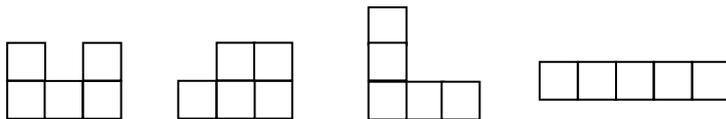


### Open Boxes

Predict which pentominoes will fold up into an open box. Mark an X in the square you think will be at the bottom of the box.

Distribute the class set of pentominoes on coloured paper – one each to twelve different students. Ask the selected students to fold the pentominoes to show which ones can be folded into an open box. The pentominoes with squares are to be folded so that the square is at the bottom of the box. Students can then correct their own worksheets.

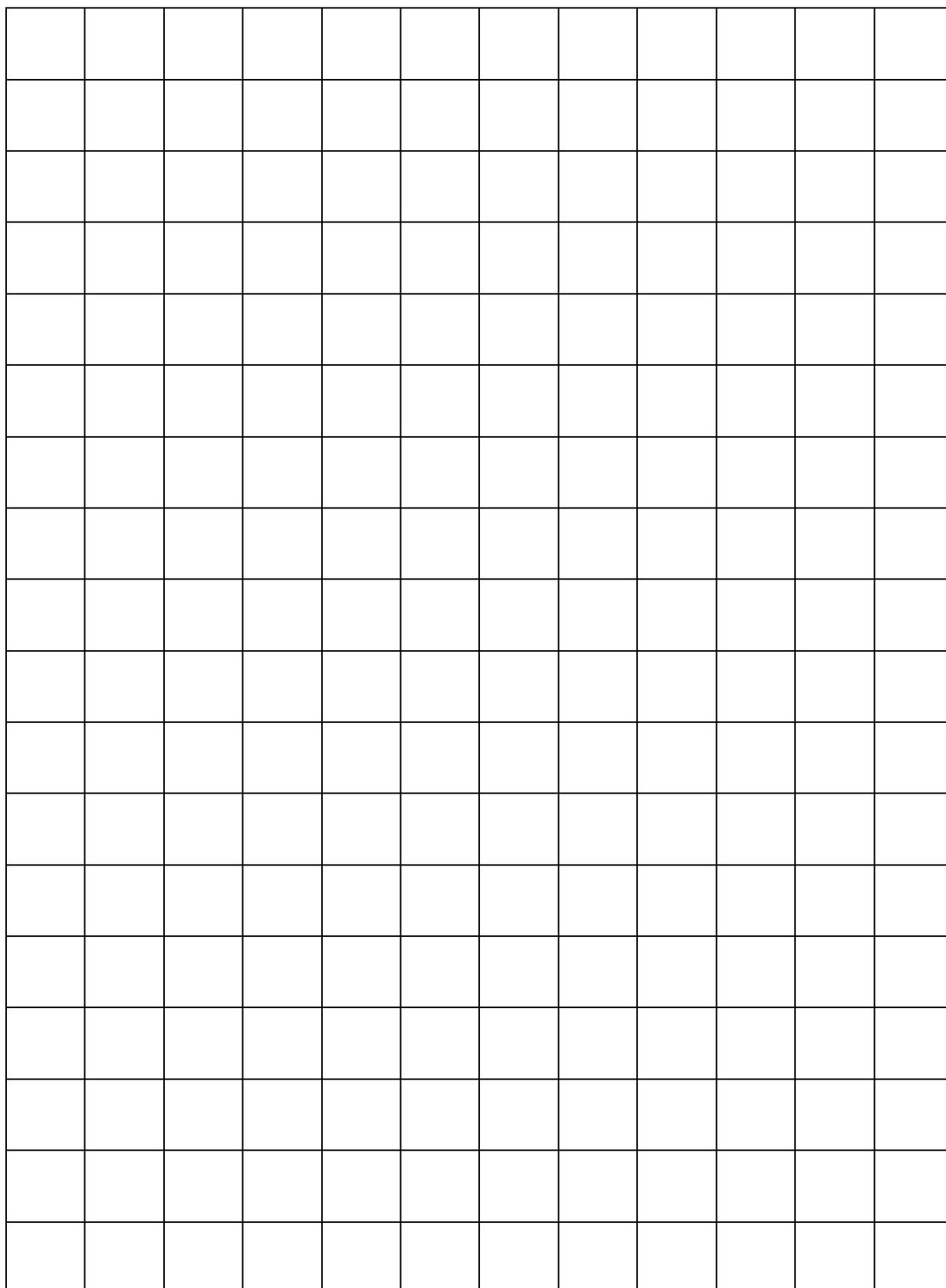
*These pentominoes will not fold into an open box.*



### Extension Activity – only if time permits.

Using the plastic pentomino sets, find ways to put different pentominoes together to form rectangles.

# Pentominoes and Open Boxes



## DICE COMBO



A game to play with a partner. Each pair will need two dice and their exercise books.

The first player throws the dice and decides whether to combine the two numbers using addition, subtraction, multiplication or division (only if the answer is a whole number). The answer to the chosen combination is then written in the player's exercise book.

For example:

If the dice thrown shows a 4 and a 5, then the score could be

9 (addition)

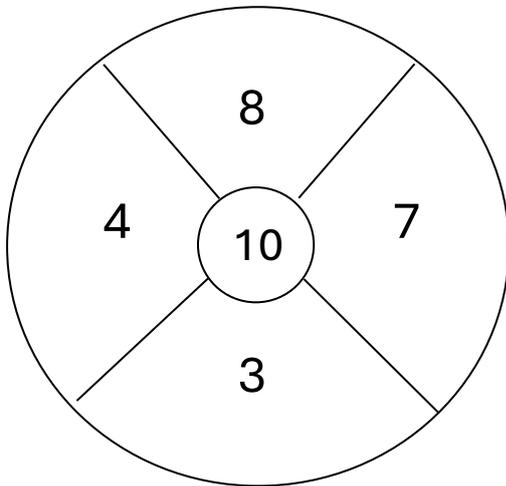
1 (subtraction)

20 (multiplication)

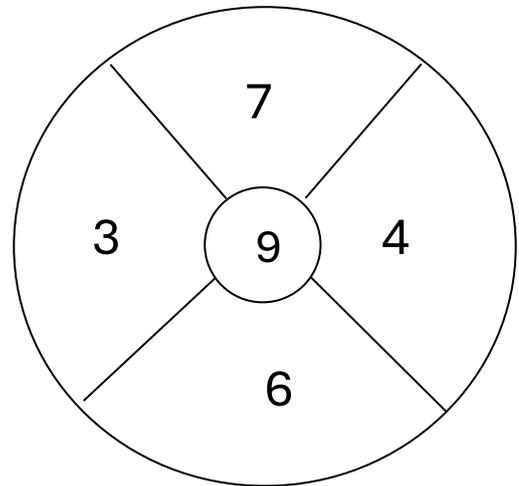
The players alternate turns with an aim to be the first to have a score which exactly totals 50 (and cannot go over 50). If time, swap partners for a second game.

# TARGET PRACTICE

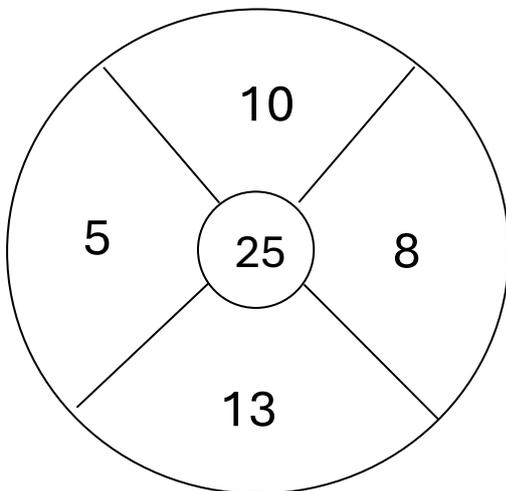
In each puzzle five arrows have landed on the target. Place a cross to show where the arrows must have landed in order to score the total shown.



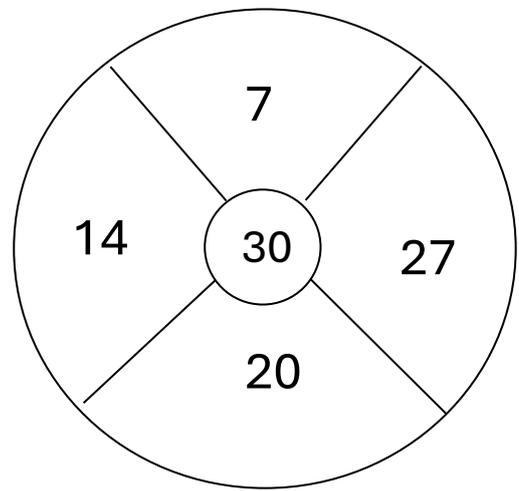
Total score of 47



Total score of 32



Total score of 65



Total score of 81