Above and Beyond – Mathematics (Year 9)

1

Title: Graph Theory Introduction

Details: See slide for image.
I figured we would ease you into extra tasks in year 8, so here is a nice little task.
The drawing below was made with a single line. In other words, the pencil was placed on the paper, it never left the paper until the drawing was complete, and at no time did the pencil go back over any line that had previously been drawn. Can you recreate this and explain the following:
How did you go about solving the problem?
What problems did you face?

Curriculum link: Problem Solving

House Points: 25

2

Title: The Graceful Tree

Details: It's graceful tree kind of day…
Fill in the circles with consecutive odd numbers so 1,3,5,7,9 in this example. You win the game if the differences between each node is different!
Make a different arrangement using 7 nodes and put in the consecutive odd numbers (1,3,5,7,9,11,13). You cannot have loops.
See slide for image.

Curriculum link:

House Points:

3

Title: Perimeter and Area

Details: Se slide for details and images.

Curriculum link: Perimeter and Area

House Points: 25

4

Title: Mathemagic

Details: Follow this process with two or three different starting numbers:
Think of a number -> Add 3 ⯈ Multiply by 2 -> Add 4 -> Divide by 2 -> Take away your starting number.
What do you notice?
Can you show why this happens?

Curriculum link: Algebra

House Points: 25

5

Title: Practice makes Permanent

Details: This is a chance to hone your skills from lesson.
Find your class teacher and ask them to find a worksheet that focusses on a topic you have been working on in lesson.
Complete this and present as your homework

Curriculum link: Recall

House Points: 10-25

6

Title: Problem Solving

Details: See slide.

Curriculum link: Problem Solving

House Points: 25

7

Title: Problem Solving

Details: The numbers 2, 3, 4, 5, 6, 7 and 8 are placed in the squares in this diagram.
The four numbers in the horizontal row add up to 21, and the four numbers in the vertical column also add up to 21.
Which number should replace x?
See slide for image.

Curriculum link: Problem Solving

House Points: 25

8

Title: Perimeter

Details: See slide.

Curriculum link: Perimeter

House Points: 25