Above and Beyond – Computer Science (Year 9)

1

Title: Staying safe online

Details: Safe use of social media. Choose your preferred social media, and make a poster explaining the dangers of using it and how you would stay safe online.

Curriculum link: Unit 9.1 – iMedia

House Points: 25

5

Title: Cat Years

Details: Write Pseudocode and a Python program for the following problem: A cat is a certain age, how old is she in human years? The rules are

- First two years of a cats' life is equivalent to 13 human years
- Each additional year is equivalent to 4 human years

Ask for the cat's age then output it in human years.

Curriculum link: Unit 9.2 – Pseudocode and Problem Solving

House Points: 25

2

Title: Programming Constructs

Details: Write Pseudocode and a Python program for the following problem: You have found a summer job in a local farm picking apples. You are paid in two ways, by weight and by time. You are paid either £1.50 for every kilogram picked or £9.50 for every hour worked; whichever is the higher earnings. Enter the weight and hours worked along with a calculation for each wage. Display both earnings and declare the actual earnings.

Curriculum link: Unit 9.2 – Pseudocode and Problem Solving

House Points: 25

6

Title: Any Times Tables - WHILE

Details: Write Pseudocode and a Python program that prints the times table for the number that the user enters (like the example on page 23 of the programming booklet) Hint: you will need to use 2 variables and one of these will be the user input (the times table wanted).

Curriculum link: Unit 9.2 – Pseudocode and Problem Solving

House Points: 25

3

Title: Apple Picking

Details: Make a poster for the three Programming Constructs; Sequence, Selection and Iteration. You should include definitions of each, an example of each and an image to describe each. You can do this on paper or you can use PowerPoint. All content must be your own except the images.

Curriculum link: Unit 9.2 – Pseudocode and Problem Solving

House Points: 50

7

Title: Largest and Smallest

Details: Write Pseudocode and a Python program for the following problem: Accept 10 different numbers and display the largest and smallest.

Curriculum link: Unit 9.2 – Pseudocode and Problem Solving

House Points: 50

4

Title: Most Expensive Coach Hire Ever

Details: Write Pseudocode and a Python program for the following problem: A coach hire firm charges £2 per person per mile for the first 100 miles, and an extra £1 per mile per person after that. However, if there are fewer than twenty people, an additional charge of £5 per person is included. Ask for journey miles and the number of people and display the total cost, in a neat format.

Curriculum link: Unit 9.2 – Pseudocode and Problem Solving

House Points: 25

8

Title: Running Mean Average

Details: Write Pseudocode and a Python program for the following problem: Calculate a running average of any number of different positive numbers. A user will enter numbers that will be added to the sum and when a negative number is encountered, stop adding numbers and write out the average.

Curriculum link: Unit 9.2 – Pseudocode and Problem Solving

House Points: 50