

Name: .....

## Summer Work Computer Science

At St Dominic's, we follow the **OCR A Level Computer Science** course.

This is '**Linear**' which means that the exams which count towards your final mark at A2 Level are as follows:

**Paper 1: 40%**

**Paper 2: 40%**

**Coursework: 20%**

We use Python almost exclusively at St. Dom's - though I'm reviewing that situation.

### Task 1: To help me, please answer the following questions;

1. What computing language did you use at school? .....
  
2. Circle the appropriate phrase to show how confident you are in the following things:  
(Feel free to mark 'not at all' as you like - you'll learn most of them in Year 1 anyway)

Programming in general	Not at all	OK	Amazing
Using Python	Not at all	OK	Amazing
Using Variables	Not at all	OK	Amazing
Using Loops (for x in range, while etc.)	Not at all	OK	Amazing
Using Functions / Procedures	Not at all	OK	Amazing
Using Simple Lists / Arrays	Not at all	OK	Amazing
Using 2-D Lists / Arrays	Not at all	OK	Amazing
Manipulating Strings	Not at all	OK	Amazing
OOP	Not at all	OK	Amazing
Using Files	Not at all	OK	Amazing
HTML	Not at all	OK	Amazing
CSS	Not at all	OK	Amazing
JavaScript	Not at all	OK	Amazing
Networks	Not at all	OK	Amazing

Are your Word processing skills good enough to email me a copy of this sheet with the survey on the previous page completed?

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### Task 2: Unfortunately, at A Level, we have to do a few essay questions - I would like to see how comfortable you are with this:

'Howard says that Artificial Intelligence is a bad thing. Is he right?

Discuss this statement in a half to one-page essay - no longer!

Please do not stress with this - I'm expecting something succinct

### Task 3: Programming

Using your best programming skills (trying to do these using good programming practice i.e. modules/functions where you can) and preferably in Python, write:

1. A program which takes in 2 numbers from a user and outputs their sum neatly  
(e.g. Please enter your 1<sup>st</sup> Number: 3  
Please enter your 2nd Number: 4  
Your numbers total: 7)
2. A program which prints out the 3 times table  
(I don't need to explain this, do I?)
3. A program which prints out the times table of a number entered by the user  
(e.g. Please enter a number to see its times table: 4  
The times table for your number is:  
4, 8, 12, 16, 20, 2, 28, 32, 36, 40)
4. A program which allows a user to enter her 1<sup>st</sup> and 2<sup>nd</sup> names and then prints out her full name:  
(e.g.: Please Enter your First Name: Howard  
Please Enter your Second Name: Bennett  
Your full Name is: Howard Bennett)
5. A program which allows the user to enter her weight in Kg and converts it to Stones and Pounds. Your program must round the weight to the nearest pound  
(e.g.: Please enter your weight in Kg: 76  
Your weight is: 11 Stones and 13 pounds)

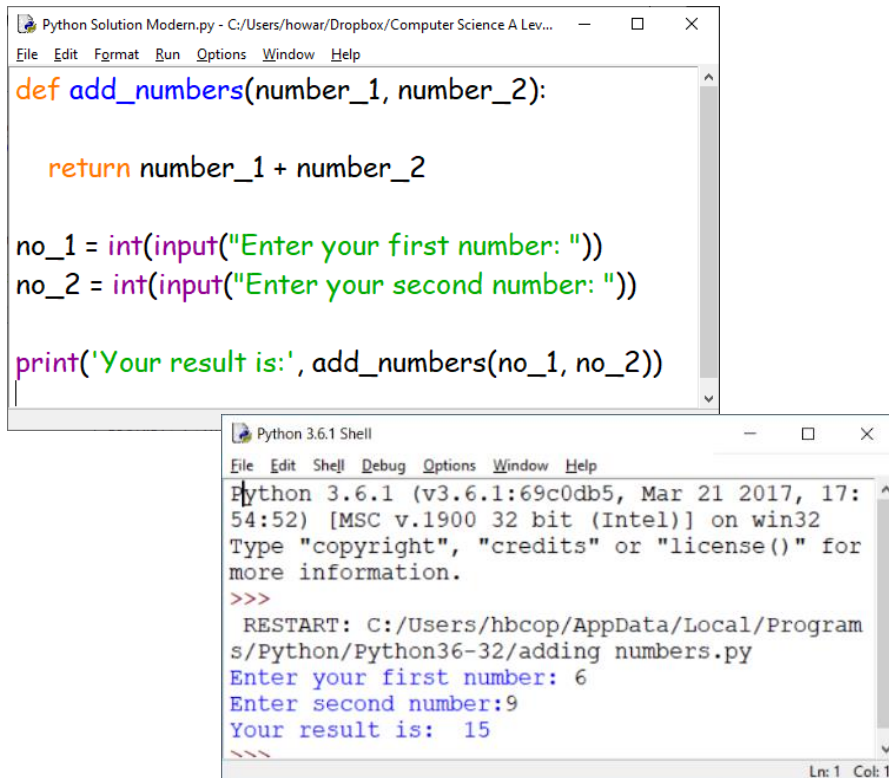
I consider these to be REALLY SIMPLE tasks and I am interested in the way you do them - are your solutions structured, reusable, easy to follow?

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### Task 4: Presenting Programming Work

I need a listing of your code and a sample run e.g.:

#### Qu.1



The image shows two overlapping windows. The top window is a Python IDE titled 'Python Solution Modern.py' with a menu bar (File, Edit, Format, Run, Options, Window, Help). The code in the editor is as follows:

```
def add_numbers(number_1, number_2):  
  
    return number_1 + number_2  
  
no_1 = int(input("Enter your first number: "))  
no_2 = int(input("Enter your second number: "))  
  
print('Your result is:', add_numbers(no_1, no_2))
```

The bottom window is a 'Python 3.6.1 Shell' with a menu bar (File, Edit, Shell, Debug, Options, Window, Help). It shows the execution of the code:

```
Python 3.6.1 (v3.6.1:69c0db5, Mar 21 2017, 17:  
54:52) [MSC v.1900 32 bit (Intel)] on win32  
Type "copyright", "credits" or "license()" for  
more information.  
>>>  
RESTART: C:/Users/hbcop/AppData/Local/Program  
s/Python/Python36-32/adding numbers.py  
Enter your first number: 6  
Enter second number:9  
Your result is: 15  
>>>
```

The status bar at the bottom right of the shell window shows 'Ln: 1 Col: 1'.

Note: the above code is a reusable function that uses parameters

**If the above questions are too easy, do them anyway and show me something you have done that you are proud of!**

My email address is: [hmb@stdoms.ac.uk](mailto:hmb@stdoms.ac.uk) - any questions - just ask me

Please email me on a non-private email address: e.g.: gmail, hotmail - not your personal one

**Recommended Online Course:** the best online course I have seen (by far!) that prepares you for A Level Python programming is:

'Program Arcade Games With Python And Pygame':

<http://programarcadegames.com/index.php?lang=en>