BTEC National Extended Certificate in Computing: Computer Games Development & Cyber Security

This course provides you with an opportunity to study in the field of Computer Science focussing on *Games Development & Cyber Security*. Cyber Security is often in the news and there is a recognised need for specialists to be trained to enter this industry. Games Development is an exciting area of Computer Science.

This qualification is a two-year vocational course and is equivalent to one A Level (e.g. the Distinction* is worth the same UCAS tariff points as the A* grade at A Level).

There are four units studied over two years, which include *Games Development, IT Systems Security and Encryption, Computer Science Principles* and *Computer Systems Fundamentals.*

‣ 42% of the work is assessed through internal assessment involving both written and practical tasks.
‣ 58% is assessed through external assessment involving two written examinations.
‣ Final grades of Pass, Merit, Distinction or Distinction* are awarded.

Preparing for written assessment

Task 1: In your assessments, you will be asked to **describe, explain, justify, evaluate** (among others)**.** These are referred to as **Command Verbs** and it is **essential** that you have a very clear understanding of the differences to maximise your grade potential.

1. Research BTEC assessment verbs and give definitions of the 4 verbs listed above.
2. Do the same for another assessment verb (from the BTEC list) of your own choosing

Principles of Computer Science – Unit 1 (assessed by external exam)

Task 2: One of the most important skills for you to develop is that of Computational Thinking.

As an exercise, please look up the following link

https://teachinglondoncomputing.org/cut-hive-puzzles/

Computational Thinking: Cut Hive Logic Puzzles

It's an interesting description of solving logic puzzles. Please work through the pages and tackle the Harder Puzzle on page 13.

Learning to program

Task 3: I don't expect you to have programmed before, but any experience helps. We are going to start with Python 3 before moving onto C# (C sharp).

If you have time, there are lots of free tutorials on **Python** available.

I suggest you listen to the first hour or so of https://www.youtube.com/watch?v=rfscVS0vtbw

Don't be put off; I'll start from the beginning when we meet. You'll enjoy it 😊

(We will be using Python 3, and the IDLE environment but again…. that can wait!)

Fundamentals of Computer Systems– Unit 2 (assessed by external exam)

Task 4: We'll be covering a lot about computer security. As a starter, please work through the 10 Worst Computer Viruses of all time.

https://tinyurl.com/y88q8u3x **10 Worst Computer Viruses of All Time**

Make brief notes on these (a paragraph on each) to demonstrate to your teacher your ability at note taking.

Games Development – Unit 14 (assessed by coursework)

Task 5: If you want to get a flavour for this, then take a look at Construct 3
https://www.construct.net/en

Try playing some of their games; that's what we will be doing next summer.

In case you need to know, the textbook that supports the course is:

'BTEC National Computing Student Book - 2016 specification' Pearson ISBN 978-1-292-16692-6

A class set will be available for you to use in the classroom and the College library have a number that you can take out on loan. I'll also give you access to the online version once you start at College.