

“Don’t be a slave to technology, become a master of it.”

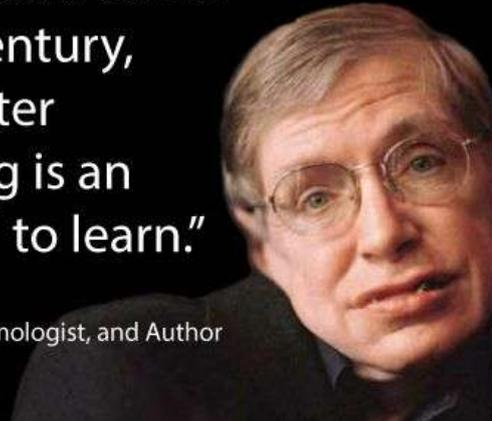
Code, Create and Succeed.

- **Wymondham High Sixth Form -**

Guide to A Level Computing

“Whether you want to uncover the secrets of the universe, or you want to pursue a career in the 21st century, basic computer programming is an essential skill to learn.”

Stephen Hawking
Theoretical Physicist, Cosmologist, and Author



- **What will I study?**
- **How can I prepare for studying Computing at Wymondham High?**

Computing is not about computers any more. It is about living.

Nicholas Negroponte

meetwlla.com

**FIND WHAT YOU'RE GOOD AT,
BECOME EXCELLENT AT IT,
AND PURSUE OPPORTUNITIES
WHERE THOSE SKILLS ARE
IN DEMAND.**

Eric Smeadow, author of Howard's Gift

Computing, where there are more jobs available than people skilled enough to fill them.

The Course Structure

A Level Computing

Content Overview	Assessment Overview	
<ul style="list-style-type: none">• The characteristics of contemporary processors, input, output and storage devices• Software and software development• Exchanging data• Data types, data structures and algorithms• Legal, moral, cultural and ethical issues• Elements of computational thinking• Problem solving and programming• Algorithms to solve problems and standard algorithms <p><i>The learner will choose a computing problem to work through according to the guidance in the specification.</i></p> <ul style="list-style-type: none">• Analysis of the problem• Design of the solution• Developing the solution• Evaluation	Computer systems (01) 140 marks 2 hours and 30 minutes written paper	40% of total A level
	Algorithms and programming (02*) 140 marks 2 hours and 30 minutes written paper	40% of total A level
	Programming project (03* or 04**) 70 marks Non-exam assessment	20% of total A level

Get ready for learning

- Read up on the bullet points above. The more you learn over the summer, the better prepared you will be to take your knowledge to the next level.
- Practice your coding, install python 3.4 and practice, and aim for 10-15 minutes a day. The best way to learn to code is to code. Don't be afraid to get it wrong, error correcting your code is a fantastic way to learn vital logical problem solving skills.

Assessment

Two 2.5 hour exams:

Computer systems

- The characteristics of contemporary processors, input, output and storage devices
- software and software development
- exchanging data
- data types, data structures and algorithms
- legal, moral, cultural and ethical issues

Algorithms and programming

- Elements of computational thinking
- Problem solving and programming
- Algorithms to solve problems and standard algorithms

Programming project:

You will choose a computing problem to work through according to the guidance in the specification.

- Analysis of the problem
- Design of the solution
- Developing the solution
- Evaluation

You will be expected to be *highly organised* and to keep your work in good order. Your notes should be presented to a very high standard (to ensure they are useful revision resources!)

Homework:

You will receive homework every week from your Computing teachers. This could be practical or research based.

Be prepared for A level Computing at Wymondham High!

Before you arrive get yourself ready for studying Computing by doing the following:

- Install python 3.4 on your laptop/computer/raspberry pi.
- You can find the install package here: <https://www.python.org/downloads/>
- Buy a USB stick for backing up code/creating databases.
- Get a few pens/pencils and a ruler (yes you will occasionally have to write/draw system diagrams)

Reading around the subject:

From September you'll be expected to complete at least one hour of independent learning each week in addition to any homework that is set.

Summer preparation

You are expected to:

- Get a head start on coding, use YouTube to watch Python video tutorials.
- Thenewboston has an excellent channel on python 3.4 coding.
- Another good channel is:
<https://www.youtube.com/playlist?list=PLQVvvaa0QuDe8XSftW-RAxdo6OmaeL85M>
- Read around the subject, find out about data types and data structures.
- Set yourself a personal coding challenge, something you will enjoy, the best way to learn coding is to start coding!
- Look up the OCR computing syllabus online and make yourself a list of topics to read up on.
- **You need to bring a project coded in python to your first lesson** after the summer, this will be graded.
- This will be expected to demonstrate your skills, so should include a GUI and way of data being saved after the code is closed. For example, this could be a game (using pygame) or a database application like a contacts program (saving names, e mails, phone numbers etc.) The code MUST be fully commented.
- A prize will be given to the student that hands in the best project.

Tasks for the 'free' periods in your first two weeks:

- Read up on software development principles.
- Read up on the registers contained within the CPU.