



Marshalls Park Academy - Curriculum Overview



Subject: Computing and ICT

Year Group: 8

In Year 8, students will undertake a curriculum geared to ready learners for advanced Computer Science the following year. Students will be learning about the internal make-up of computers, advanced modelling using spreadsheet software. Student will also get considerable exposure to programming using different languages and interfaces.

| TERM 1 | TERM 2 | TERM 3 |
|---|--|--|
| <p style="text-align: center;">KNOWLEDGE/SKILLS</p> <p>Understanding Computers</p> <ul style="list-style-type: none"> Distinguish between hardware and software Identify input, output and storage devices Understand the differences between primary and secondary storage CPU/ Fetch Execute Cycle Understand the difference between RAM and ROM and what ROM is used for <p>Computational Thinking & Logic</p> <ul style="list-style-type: none"> Get mind-set ready for logical thinking Understand and use logic gates Algorithmic Thinking Understanding Abstraction Decomposition | <p style="text-align: center;">KNOWLEDGE/SKILLS</p> <p>Developing for the Web</p> <ul style="list-style-type: none"> Learn what HTML is and what it is used for Type basic HTML tags using a text editor Edit HTML code and view in a browser Write CSS code to set styles Create a responsive web page Understand the main principles of website design Learn how to create a web form <p>Python Programming</p> <ul style="list-style-type: none"> Explore Python 3 programming language Learn how to use IDLE to write and organise programs Get Python to do some maths Learn how to combine maths and text Learn about variables Use if, elif and else statements (including loops) | <p style="text-align: center;">KNOWLEDGE/SKILLS</p> <p>Cyber Security</p> <ul style="list-style-type: none"> Cybercrime and email scams Health and safety and hacking Protecting online identity Legal issues, Copyright <p>Microbits</p> <ul style="list-style-type: none"> Identify components of the microbit Output text/designs on the display Trigger events based on button presses Use selection and forever loops Adjust LEDs on the microbit Program the “gestures” function to use the accelerometer |
| KEY ASSESSMENTS | KEY ASSESSMENTS | KEY ASSESSMENTS |
| <p>HALF TERM 1 End of unit test (Understanding Computers)</p> <p>HALF TERM 2 End of unit test (Computational Thinking and Logic)</p> | <p>HALF TERM 3 End of unit test (Developing for the Web)</p> <p>HALF TERM 4 End of unit test (Python Programming)</p> | <p>HALF TERM 5 End of unit test (Cyber Security)</p> <p>HALF TERM 6 End of unit test (Microbits)</p> |

Extended reading suggestions and links to external resources:

Teach-ICT - <http://www.teach-ict.com/>

Theory components of the course are covered in great-depth to accompany all of the computer Science Course

Codecademy - <https://www.codecademy.com/>

Online programming tutorials with easy-to-follow instructions, and immediate feedback to determine if code is correct. Excellent resource to self-learn

BBC micro:bit - <https://makecode.microbit.org/>