

Subject: Computing

Head of Department: Mr L Williams

Curriculum Intent

Hornchurch Highs KS3 computing curriculum is designed to prepare students for an ever-changing technological world. By equipping learners with an understanding of a wide range of threshold concepts, students are able to thrive in a range of KS4 curricula, whatever their aspirations may be for further education and later life. The curriculum is centred around developing core technical skills, whilst meticulously planned to ensure that pupils meet the key strands outlined in the national computing curriculum, in a manner that supports understanding and retention.

By key stage 4, learners are able to choose from a range of vocational or academic routes, regardless of their starting points. Learners are equipped with a technological skillset which supports them in their wider curricula, as Hornchurch High works to ensure that all subjects offered are up to date with the digital world.

Year 7 Topics

- Autumn Term 1 – Transition, E-safety and cyberbullying
- Autumn Term 2 – System architecture
- Spring Term 1 – Networks
- Spring Term 2 – Binary
- Summer Term 1 – Computational thinking
- Summer Term 2 – AI and spreadsheets

Year 8 Topics

- Autumn Term 1 – Cyber-security
- Autumn Term 2 – Websites
- Spring Term 1 – Media animation
- Spring Term 2 – App development
- Summer Term 1 – Block-based programming
- Summer Term 2 – Data visualisation

Year 9 Topics

- Autumn Term 1 – Marketing principles
- Autumn Term 2 – Promotional design and spreadsheets
- Spring Term 1 – Python programming
- Spring Term 2 – Python programming
- Summer Term 1 – 3D Graphics



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- Summer Term 2 – AI

Year 10 Topics

- Autumn Term 1 – Computer systems
- Autumn Term 2 – Programming: Selection/Iteration/Subroutines
- Spring Term 1 – Algorithms, strings and lists
- Spring Term 2 – Data representation
- Summer Term 1 – Programming: Searching and sorting algorithms

Year 11 Topics

- Autumn Term 1 – Dictionaries and data files, impacts of technology
- Autumn Term 2 – Networks and security, Databases
- Spring Term 1 – Databases and SQL, HTML
- Spring Term 2 – Exam practise and revision
- Summer Term 1 – Revision

GCSE Specification Details and Assessment:

OCR Computer Science (J277)

<https://www.ocr.org.uk/Images/558027-specification-gcse-computer-science-j277.pdf>

Spiritual, moral, social and cultural development (SMSC)

Examples: We teach e-safety throughout KS3, developing pupil's ability to communicate digitally, whilst supporting them in navigating the digital world.

We have recently introduced units surrounding AI into year 7 and year 9, as this topic becomes more relevant in every-day life.



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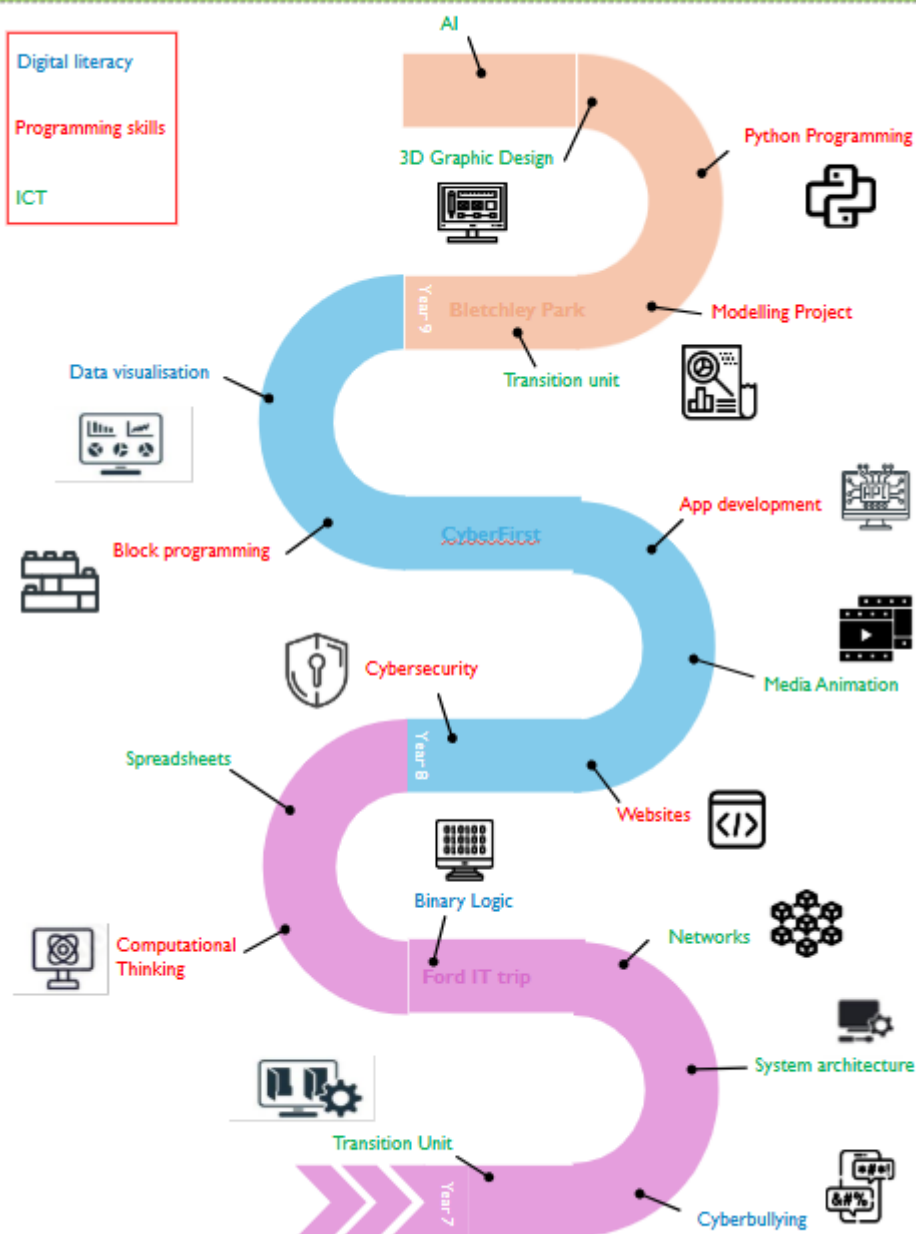
Computing KS3 Learning Journey



Digital literacy

Programming skills

ICT



Aspire

Believe

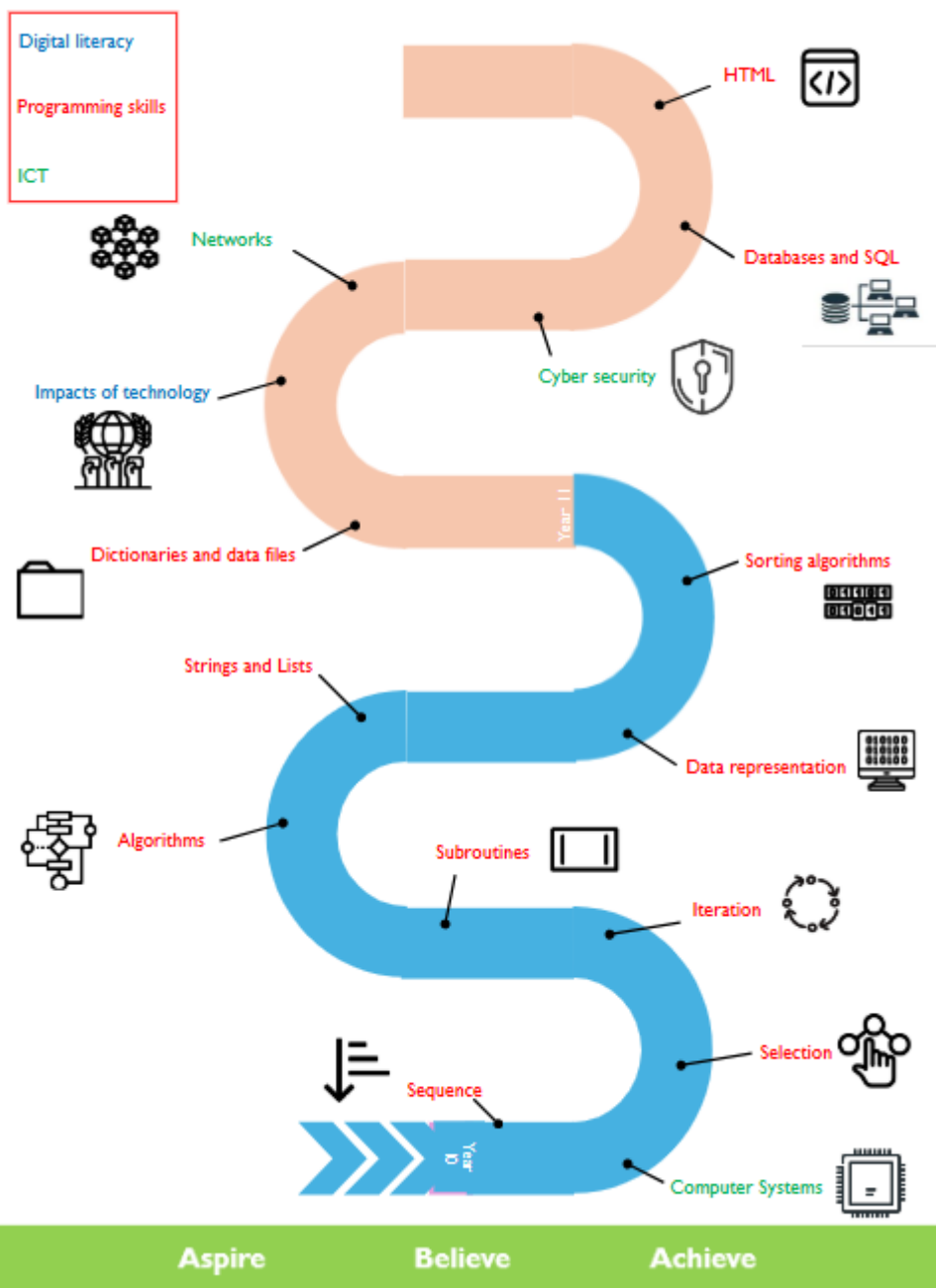
Achieve



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Computer Science KS4 Learning Journey



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