

# COMPUTING - BIG PICTURE CURRICULUM PLANNING - KEY STAGE 3

## The big aims of KS3

- To enable the scientific and practical study of computation: what can be computed, how to compute it, and how programs can be written to solve problems
- To develop student understanding about how computers and telecommunications equipment work, including storage, retrieval, transmission and manipulation of different forms of data
- To develop in students the ability to be efficient and critical users of technology
- To develop understanding about the risks associated with the use of technology and how to keep themselves/others safe
- To develop and extend students' subject/technical vocabulary
- To develop students' technical understanding and competence so that they are able to create a range of digital artefacts which are fit for audience and purpose. Additionally, to select, use, manipulate and evaluate software and systems.
- To [inspire more girls](#) to study computing at KS4 and consider this as a career route

## Characteristics of a compelling learning experience

- Promotes learner curiosity, enjoyment, creativity, autonomy and resilience
- Provides engagement with 'real-world' audiences and problems
- Harnesses technology to develop collaborative work
- Engages learners with relevant, high-quality competitions, trips and speakers
- Fosters growth-mindset in learners
- Provides opportunities to develop successful habits for learning i.e. 'My FPHS'

## Key concepts

- E-Safety & Online Communications
- Cyber Security
- Computational Thinking
- Programming
- Computer Hardware
- Computer Networks
- Binary

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|               | <ul style="list-style-type: none"> <li>• Graphics</li> </ul>  |
| Key knowledge | <ul style="list-style-type: none"> <li>• Ethics, Law, Reasoning, Blogs, Email, Sense of Awareness, Fake News, digital footprint, evaluating (choices)</li> <li>• Computational thinking, sequence, selection, variables, conditional operators, iteration(count/condition), language, IDE</li> <li>• Purpose of computer hardware, binary (number &amp; purpose), truth tables, gates, Boolean logic, denary, binary images, graphics software, evaluating(use of software)</li> <li>• Networks, communication, Internet, WWW, purpose of hardware</li> </ul> |
| Key skills    | <ul style="list-style-type: none"> <li>• Applying Computational Thinking skills to a range of problems.</li> <li>• Debugging</li> <li>• Programming</li> <li>• Analysing and predicting</li> <li>• Applying boolean logic</li> <li>• Information handling: finding, creating, judging, manipulating data and information</li> <li>• Technical proficiency</li> </ul>  |