

COMPUTING - BIG AIMS CURRICULUM PLANNING - YEAR 8

WHAT ARE THE BIG AIMS OF YEAR 8?

- 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 different forms of data and how these can be manipulated
- 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 (bitmap and vector graphics and HTML) which are fit for audience and purpose. Additionally, to select, use, manipulate and evaluate software.
- To inspire more girls to pursue computing and consider this as a potential future career route

WHAT WILL EXCELLENCE LOOK LIKE IN YEAR 8?

Students will demonstrate:

- secure ability to translate their understanding of programming from graphical to text based
- greater technical proficiency in programming and debugging
- developing understanding and evidence of more advanced programming techniques (different forms of iteration)
- a more proactive approach to working independently to solve problems and find information to self-support
- can explain the relationship between binary and graphics
- secure use of familiar technical language
- greater resilience
- curiosity beyond learning undertaken in the classroom
- ability to support peer learning to address misconceptions

WHAT KNOWLEDGE DO THE PUPILS NEED TO ACQUIRE?

Computational Thinking & Programming: *computational thinking, sequence, selection, iteration, variable, conditional operators*

Binary & Graphics: *binary (number & purpose), truth tables, logic gates, Boolean logic, denary, binary images, Graphics software, Laws, evaluating (use of software)*

Computer Networks: *binary (purpose), networks, communication, Internet, WWW, purpose of hardware*

WHAT SKILLS DO THE PUPILS NEED TO DEVELOP?

- Debugging
- Programming - text based
- Applying computational thinking methods to design algorithms and solve problems

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| | <ul style="list-style-type: none">● Analysing and predicting● Information handling: finding, creating, judging, manipulating data and information● Technical proficiency● Fluent use of technical language |
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WHAT MISCONCEPTIONS MAY THEY HAVE FROM PREVIOUS LEARNING?

- that Computational Thinking means solving problems on a computer
- that updates to social apps don't require actions from them
- that they don't need to read the terms and conditions when registering on apps - not checking permissions
- that spreadsheets are only used for solving mathematical problems
- that there is no relationship between Scratch and text-based programs
- that copy and paste is an acceptable demonstration of learning