

Curriculum Intent, Implementation and Impact

Subject: Computer Science

Year group: Year 7 , Year 8 , Year 9

Periods per fortnight: 2

[Computing National Curriculum](#)

Intent:

Our vision in The Buckingham School Computing department is that students are able to build the skills and confidence to understand all aspects of computing, from the impacts of the technology, e-safety to designing programs of their own. Students will develop learnership and independence through use of cooperative learning in the subject.

We aim to ensure that **all** students are able to:

- Understand how to research and present data
- Analyse current affairs and discuss the impact that technology has on society
- Plan and build programs, using a variety of programming languages
- Have a deeper understanding of the internal and external functions of a computer (software and hardware)

[Curriculum Mapping for KS3](#)

IMPLEMENTATION (Year 7):

Term	Topics studied	Extended learning opportunities	How parents could support students
Term 1 and start of Term 2	<p>Cat Testing (benchmark testing)</p> <p>Computer Systems:</p> <ul style="list-style-type: none">• Data• Input and Output Devices• The CPU• Memory• Storage Devices• Software• Operating Systems	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p><u>Effective studying</u> is continuous small amounts over time vs studying the night before. It's testing themselves on the content (practicing questions- recommend flashcards) and doing something with the information vs reading and highlighting.</p> <p>Useful Websites:</p> <p>BBC Bitesize</p> <p>Seneca Learning</p>

Term 6	<p>E-Safety Media Campaign:</p> <ul style="list-style-type: none"> Research and build a full scale (social) campaign about E-Safety. <p>This will involve producing assemblies, workshops and talking to the community.</p>	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p>Useful Websites:</p> <p>Fake News</p> <p>ThinkUKnow (ages 11-13)</p> <p>ThinkKnow (ages 8-10)</p> <p>Seneca Learning</p>
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IMPLEMENTATION (Year 8):

Term	Topics studied	Extended learning opportunities	How parents could support students
Term 1	<p>Internet and Digital Issues:</p> <ul style="list-style-type: none"> Types of networks Network Topologies Network Security Threats Network Security Measures Issues- Censorship and Surveillance Issues- Online Privacy Laws 	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p><u>Effective studying</u> is continuous small amounts over time vs studying the night before. It's testing themselves on the content (practicing questions- recommend flashcards) and doing something with the information vs reading and highlighting.</p> <p>Useful Websites:</p> <p>BBC Bitesize</p> <p>Seneca Learning</p>
Term 2	<p>Advanced JavaScript (Variable)</p> <ul style="list-style-type: none"> Recap of JavaScript programming Concepts of variables Applying variables Using variables to produce an animation 	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p>Parents/Guardians can also support students by practising coding with them at home.</p> <p>Useful Websites:</p> <p>BBC Bitesize</p> <p>Seneca Learning</p>

Term 3	<p>Understanding Sound and Images:</p> <ul style="list-style-type: none"> • How Images are produced • Bitmap creation • How Sound is produced • Compression 	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Khan Academy</p> <p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p>Useful Websites: BBC Bitesize Seneca Learning</p>
Term 4	<p>Number Systems (Binary)</p> <ul style="list-style-type: none"> • Reading Binary (binary to decimal) • Decimal to Binary • Binary Addition 	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p>Useful Websites: BBC Bitesize Seneca Learning Seneca Learning (Advanced)</p>
Term 5	<p>Functions in JavaScript</p> <ul style="list-style-type: none"> • Simple functions (step by step) • Logic behind why we use functions • Complex functions (return values) 	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p>Parents/Guardians can also support students by practising coding with them at home</p> <p>Useful Websites: Khan Academy BBC Bitesize Seneca Learning Seneca Learning (Advanced)</p>
Term 6	<p>Fake News Digital Campaign</p> <ul style="list-style-type: none"> • Research and build a full scale (social) campaign about Fake News and how to spot it. <p>This will involve producing assemblies, workshops and talking to the community.</p>	<p>Flipped Learning via Google Forms:</p> <p>Set 1- Content videos and research websites</p> <p>Set 2: Exam based questions (preparation for assessment)</p>	<p>Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment.</p> <p>Useful Websites: Fake News ThinkUKnow (ages 11-13) ThinkKnow (ages 8-10)</p>

IMPLEMENTATION (Year 9):

Term	Topics studied	Extended learning opportunities	How parents could support students
Term 1	Searching and Sorting Algorithms:4 <ul style="list-style-type: none"> • Linear Search • Binary Search • Bubble Sort • Insertion Sort 	Flipped Learning via Google Forms: Set 1- Content videos and research websites Set 2: Exam based questions (preparation for assessment)	Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment. <u>Effective studying</u> is continuous small amounts over time vs studying the night before. It's testing themselves on the content (practicing questions- recommend flashcards) and doing something with the information vs reading and highlighting. Useful Websites: BBC Bitesize Seneca Learning Seneca Learning (Advanced)
Term 2/	Introduction to Python: <ul style="list-style-type: none"> • Print and input • Arrays and Libraries • If Statements • While Loops 	Flipped Learning via Google Forms: Set 1- Content videos and research websites Set 2: Exam based questions (preparation for assessment)	Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment. Parents/Guardians can also support students by practising coding with them at home. Useful Websites: BBC Bitesize Seneca Learning (Advanced) Seneca Learning (Python)
Term 3	Logic Circuits: <ul style="list-style-type: none"> • Logic Gates • Truth Tables • Building Circuits 	Flipped Learning via Google Forms: Set 1- Content videos and research websites Set 2: Exam based questions (preparation for assessment)	Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment. Useful Websites: BBC Bitesize Seneca Learning (Advanced) Logicly (Circuit building website)

Term 4	Microbit Game Design and Robotics Unit: <ul style="list-style-type: none"> • Microbit Basics • Snap the dot • Space invaders • Catch the dot • Robot basics • Remote controlled cars 	Flipped Learning via Google Forms: Set 1- Content videos and research websites Set 2: Exam based questions (preparation for assessment)	Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment. Useful Websites: Tutorials
Term 5	Website Design: <ul style="list-style-type: none"> • CSS • HTML • Google Sites 	Flipped Learning via Google Forms: Set 1- Content videos and research websites	Parents can support their child by checking extended learning progress at home and help guide students into creating an effective revision timetable prior to assessment. Useful Websites: Khan Academy

IMPACT:

Students will be assessed to prove that they have understood and can apply what has been taught at the end of each unit. Students will be tested using GCSE exam style assessments, with flipped learning exam support in place to prepare students for higher level questioning.

Each student will be graded as Emerging/Developing/Secure/Mastered/Mastery*, with each unit being weighted equally (with the exception of the Media Campaigns the students run).

This approach enables students to confidently complete the Computing National Curriculum and be GCSE ready when they reach the end of KS3.