**Curriculum Mapping 2022-23**  **Subject:** **Computer Science** **Curriculum Leader (s)**  **PEL**

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|  | **KS3 Curriculum**1. Teaching crucial knowledge.
2. Exposing to key vocabulary.
3. Developing cultural capital.
4. Enabling the development of knowledge.
5. Challenging misconceptions.
6. Emphasising inter-connectedness.
7. Teaching and development of skills.
 | **KS4 Curriculum**1. Transition to education after KS4
2. Developing further on the attitudes and attributes for success.
3. Building on all areas from KS3 and Accelerated Curriculum.
4. Guidance for next stage of education
 | **KS5 Curriculum**1. Transition to HE/FE/Employment (including apprenticeship).
2. Developing further on the attitudes and attributes for success.
3. Building on all areas from KS3 and KS4.
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|  | **Year 7** | **Year 8** | **Year 9** | **Year 10** | **Year 11** | **Year 12** | **Year 13** |
| **Spiral****Curriculum** | **Vertically integrated across Key Stages – Each KS** |
| **Skills** | Computational thinking AbstractionDecompositionAlgorithmic thinking Problem solving Coding (Scratch & Python) Spreadsheet Modelling Mathematical ConceptsCommunication | Computational thinking AbstractionDecompositionAlgorithmic thinking Problem solving Coding (Scratch & Python) Spreadsheet Modelling Mathematical ConceptsCommunication | Computational thinking AbstractionDecompositionAlgorithmic thinking Problem solving Coding (Scratch & Python) Spreadsheet Modelling Mathematical ConceptsCommunicationInvestigation and practical applicationAnalysis and evaluative skillsDesign and implementation | Essay writingCommunicationComputational thinkingProblem SolvingAbstractionDecompositionAlgorithmic ThinkingCoding (Python & SQL)Database TheoryMathematical Concepts | Essay writingExam skillsCommunicationComputational thinkingProblem SolvingAbstractionDecompositionAlgorithmic ThinkingCoding (Python & SQL)Database TheoryMathematical Concepts | Report writingResearchReferencingCommunicationProject managementComputational thinkingProblem SolvingAbstractionDecompositionAlgorithmic ThinkingDatabase planningMathematical ConceptsSelf-management | Report writingResearchReferencingCommunicationProject managementComputational thinkingProblem SolvingAbstractionDecompositionAlgorithmic ThinkingCoding (Python)Mathematical ConceptsSelf-management |
| **Knowledge & Understanding** **Key Topics per half Term**  | T1 – Introduction to IT facilities, rules & rituals, expectationsE-safety T2 – Introduction to Computer Science (PEL lessons)T3 – Computer NetworksT4 – Spreadsheet ModellingT5 – Scratch ProgrammingT6 – Scratch Programming | T1 – Introduction to IT facilities, rules & rituals, expectationsE-safetyT2 – Computer Systems T3 – Spreadsheet ModellingT4 – Spreadsheet ModellingT5 – Python ProgrammingT6 – Python Programming | T1 – Introduction to IT facilities, rules & rituals, expectationsE-safetyT2 – CybersecurityT3 – Data ScienceT4 – Data ScienceT5 – Physical Computing (micro:bit) T6 – Physical Computing (micro:bit) | \*3.2 Programming to run throughout the academic year.\*T1 – 3.1 Algorithms & 3.3 Data RepresentationT2 – Data RepresentationT3 – 3.4 Computer SystemsT4 – Computer NetworksT5 – 3.7 Relational databases & query language (SQL)T6 – 3.6 Cyber Security & 3.8 Ethical, Legal, environmental impacts of digital tech | \*3.2 Programming to run throughout the academic year.\*T1 – 3.1 Algorithms & 3.3 Data RepresentationT2 – 3.4 Computer Systems & 3.5 Computer NetworksT3 – 3.7 Relational databases & query language (SQL)3.6 Cyber Security & 3.8 Ethical, Legal, environmental impacts of digital techT4 – Revision Paper 1 & Paper 2T5 – Revision & Exam  | T1 - Data types, data structures and algorithmsT2 - Boolean Algebra/ Database/Compression TestT3 - Networks / AlgorithmsT4 - Problem solving/Programming and Computational methodsT5 - Programming projectT6 - Programming project | T1 - Characteristics of contemporary processors, inputs, outputs a development T2 - Software and software developmentT3 - Programming projectT4 - Programming projectT5 - Revision session |
| **Common Assessment of Progress and Performance** **(CAPP)**  | Use of MCQs One formal assessment per half term.  | Use of MCQs One formal assessment per half term. | Use of MCQs One formal assessment per half term. | Knowledge Organisers/Retrieval GridsTopic TestsTermly Paper Assessments covering the topics covered so far – one at Christmas, Easter and Summer | Knowledge Organisers/Retrieval GridsTopic TestsTermly Paper 1 & 2 Assessments – at Christmas and Easter  | Knowledge Organisers/Retrieval GridsTopic TestsTermly Paper 1 & 2 Assessments – at Christmas and Easter | Knowledge Organisers/Retrieval GridsTopic TestsTermly Paper 1 & 2 Assessments – at Christmas and Easter |
| **Wider Curriculum including extracurricular opportunities** **e.g SMSC ,Careers and Employability , Literacy and Numeracy**  | * Careers showcasing CS via code.org
* STEM Ambassadors'’ visits/talks either in person or virtually
 | * Careers showcasing CS via code.org
* STEM Ambassadors'’ visits/talks either in person or virtually
 | * Careers showcasing CS via code.org
* Amazon Future Engineer Virtual FC Tour
* STEM Ambassadors'’ visits/talks either in person or virtually
 | * BIMA day November
* Ethic, Environmental, Legal Issues topic
* Careers Talks
* Amazon Future Engineer Virtual FC Tour
* STEM Ambassadors'’ visits/talks either in person or virtually
 | * Ethic, Environmental, Legal Issues topic
* STEM Ambassadors'’ visits/talks either in person or virtually
 | * Computer Science in Action Conference
* Careers Talks
* Ethic, Moral, Legal Issues topic
 | * Computer Science in Action Conference
* Careers Talks
* Ethic, Moral, Legal Issues topic
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| **Attitudes & Attributes****Growth Mindset,****Independent Learning**  | * T2 Topic – problem solving
* T5&6 – programming unit, creativity, resilience, problem solving
 | * T5&6 – programming unit, creativity, resilience, problem solving
 | * T5&6 – programming unit, creativity, resilience, problem solving
 | * Personalised Learning Checklist
* Progress Tracker with formal & informal assessments dates on
 | * Personalised Learning Checklist
* Progress Tracker with formal & informal assessments dates on
 | * Use of study periods
* Personalised Learning Checklist
* Progress Tracker with formal & informal assessments dates on
 | * Use of study periods
* Personalised Learning Checklist
* Progress Tracker with formal & informal assessments dates on
 |

**Intent –** Implementation – Impact

Intent - The ambitions and plans that are in place up to the point of delivery

Implementation – the means for how these are delivered and assessed

Impact – the achievements of students as evidence by work produced, attitudes to learning, participation in extra curricular, summative assessment and final outcomes

Our definitions

**Spiral Curriculum**

How the building blocks of our curriculum are constructed and built upon through students’ journey through school