**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. | |
|  | **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  Abstraction  Decomposition  Algorithmic thinking  Problem solving  Coding (Scratch & Python)  Spreadsheet Modelling  Mathematical Concepts  Communication | Computational thinking  Abstraction  Decomposition  Algorithmic thinking  Problem solving  Coding (Scratch & Python)  Spreadsheet Modelling  Mathematical Concepts  Communication | Computational thinking  Abstraction  Decomposition  Algorithmic thinking  Problem solving  Coding (Scratch & Python)  Spreadsheet Modelling  Mathematical Concepts  Communication  Investigation and practical application  Analysis and evaluative skills  Design and implementation | Essay writing Communication Computational thinking Problem Solving Abstraction Decomposition Algorithmic Thinking Coding (Python & SQL)  Database Theory  Mathematical Concepts | Essay writing Exam skills Communication Computational thinking Problem Solving Abstraction Decomposition Algorithmic Thinking Coding (Python & SQL)  Database Theory  Mathematical Concepts | Report writing Research Referencing Communication Project management Computational thinking Problem Solving Abstraction Decomposition Algorithmic Thinking  Database planning  Mathematical Concepts  Self-management | Report writing Research Referencing Communication Project management Computational thinking Problem Solving Abstraction Decomposition Algorithmic Thinking Coding (Python)  Mathematical Concepts  Self-management |
| **Knowledge & Understanding**  **Key Topics per half Term** | T1 – Introduction to IT facilities, rules & rituals, expectations  E-safety  T2 – Introduction to Computer Science (PEL lessons)  T3 – Computer Networks  T4 – Spreadsheet Modelling  T5 – Scratch Programming  T6 – Scratch Programming | T1 – Introduction to IT facilities, rules & rituals, expectations  E-safety  T2 – Computer Systems  T3 – Spreadsheet Modelling  T4 – Spreadsheet Modelling  T5 – Python Programming  T6 – Python Programming | T1 – Introduction to IT facilities, rules & rituals, expectations  E-safety  T2 – Cybersecurity  T3 – Data Science  T4 – Data Science  T5 – 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 Representation  T2 – Data Representation  T3 – 3.4 Computer Systems  T4 – Computer Networks  T5 – 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 Representation  T2 – 3.4 Computer Systems & 3.5 Computer Networks  T3 – 3.7 Relational databases & query language (SQL)  3.6 Cyber Security &  3.8 Ethical, Legal, environmental impacts of digital tech  T4 – Revision Paper 1 & Paper 2  T5 – Revision & Exam | T1 - Data types, data structures and algorithms  T2 - Boolean Algebra/ Database/Compression Test  T3 - Networks / Algorithms  T4 - Problem solving/Programming and Computational methods  T5 - Programming project  T6 - Programming project | T1 - Characteristics of contemporary processors, inputs, outputs a development  T2 - Software and software development  T3 - Programming project  T4 - Programming project  T5 - 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 Grids  Topic Tests  Termly Paper Assessments covering the topics covered so far – one at Christmas, Easter and Summer | Knowledge Organisers/Retrieval Grids  Topic Tests  Termly Paper 1 & 2 Assessments – at Christmas and Easter | Knowledge Organisers/Retrieval Grids  Topic Tests  Termly Paper 1 & 2 Assessments – at Christmas and Easter | Knowledge Organisers/Retrieval Grids  Topic Tests  Termly 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 |
| **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