Computer Science Curriculum Map - KS3-KS4

1972 50 YEARS 2022

Next Steps

Sixth Form / Further Study: Computer Science • Cyber-security • Games Development and design • Scripting and programming • Web design and software development

Careers: Programme analyst • Data scientist • Database developer • Games developer • Front-end developer • Project manager Network security engineer • Software developer • Software engineer • Systems analyst • UX designer

Skills: Analysis • Attention to Detail • Communication • Problem solving • Patience • Logical Thinking

Super-curricular links: Programming is the key to the future. Further learning below: Hour of Code • Isaac computer science • Code.org

National Museum of computing

Exams

Mock Exams, Revision and targeted support

Revision and targeted support

YEAR 11

Computers
- Hardware
- Software
- Programming languages

Academic Reflection

Networks
- Networks
- Protocols
- Topologies
- TCP/IP
- Network security

Academic Reflection

Exam Preparation
- Mock Exams
- Intervention
- Support
- Walkthroughs

Python programming
- Input/output
- Operators
- Subprograms

Paper 2

Academic Reflection

Specification

End of Year Assessment

Issues and Impact
- Environmental
- Ethical and legal
- Cybersecurity

Academic Reflection

Python Programming
- Develop code
- Constructs
- Data types and structures

Paper 2

Academic Reflection

DEBATE

Using different programs and media to create a cohesive project

YEAR 10

Data Representation and Logic
- Conversions between binary and denary
- Conversions between hexadecimal and denary
- Conversions between binary and hexadecimal
- Binary addition

Academic Reflection

Python Programming Project
- Advanced programming concepts
- Python programming
- Handling errors
- Functions
- Casting Data types

Academic Reflection

Text based language

Coding

Database Development
- Microsoft access
- Table creation
- Creating a query
- Create and formatting a report

Academic Reflection

Advertising Project
- Graphic design
- Video editing
- Audio editing
- Exploring media processes

Academic Reflection

End of Year Assessment

Careers

Computational Thinking
- Algorithms
- Decomposition & abstraction
- Truth tables

Academic Reflection

Data
- Binary and hexadecimal number systems
- Data representation
- Data storage and compression

Academic Reflection

Managing Data

YEAR 9

Understanding Computers
- Hardware and software
- How is data processed (binary)
- What is a CPU
- Ram and ROM

Academic Reflection

How do computers work?

End of Year Assessment

Animation in Blender
- Create and join shapes
- Add material and colours
- Animate an image

Academic Reflection

AI and Machine Learning
- What is Artificial intelligence
- What is Machine learning
- Algorithmic Bias
- Ethical concerns

Spreadsheet Modelling
- Formatting cells
- Data entry
- Formulas
- Charts
- Conditional formatting

Academic Reflection

Computer Programming

Programming in Python
- Basic programming concepts
- Python programming
- Handling errors
- Sequence, selection and iteration
- Data types

Text based language

Academic Reflection

Knowledge Organisers and Revision

YEAR 8

Spreadsheet Skills
- Formatting cells
- Data entry
- Formulas
- Charts
- Conditional formatting

Academic Reflection

Modelling

App Development in App Lab
- Design an app
- Create an app
- Test out the app

Academic Reflection

Block based language

End of Year Assessment

Computational Thinking and Logic
- Algorithms
- Decomposition and abstraction
- Problem solving
- Pattern recognition
- Logic gates AND, OR, NOT

Academic Reflection

Problem Solving

YEAR 7

Programming in Small Basic
- Basic programming concepts
- Small basic programming
- Handling errors
- Sequence, selection and iteration
- Data types

Text based language

Academic Reflection

Computational Thinking and Problem Solving
- Algorithms
- Decomposition and abstraction
- Problem solving
- Pattern recognition

Academic Reflection

Using Technology Safely
- Staying safe online
- Cyberbullying awareness
- Computing room rules
- Using Google Drive
- Files

Academic Reflection

Baseline Skills & Online Safety

Primary School Curriculum

Taster Sessions

Transition Days

We work with our primary school partners to make sure we get to know you and you get to know us and what we teach you links up and follows on from what you have learnt already