

Computer Science and Careers

Most units of work have the opportunity to discuss careers and this is shared with pupils. This allows pupils to see how the subject they are covering relates to the real world and how these skills can be applied. It gives the topic a purpose rather than just a task to complete. By pupils understanding the purpose of what they are doing will allow them to make further progress as it will give them something to potentially aim for in the future.

Examples of Curriculum Links to Futures - Covered

| | Curriculum Theme/Topic | How Do You Link This Theme/Topic to Careers? | What Careers Related Extra-Curricular Opportunities Are Offered? | What Employer/Employee Encounters Are Offered? |
|---------------|--------------------------------|---|--|---|
| Year 7 | 1. Systems Architecture | An understanding of computer components can underpin their knowledge in becoming a Computer Systems Architect. | UK Bebras Challenge offered | Employee encounters being organised. Tasks being organised around the visits. |
| | 2. Systems Software | This topic introduces different types of software such as operating systems and utility which can lead to a career in Software Developer. | | |
| | 3. Wired and wireless networks | This topic introduces different networks and how networks are created which can lead to a career in Network Technicians. | | |
| | 4. Security threats | Links to the Cyber Security industry. | | |
| | 5. Programming | Links to careers related to autonomous technology such as traffic light systems. | | |

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| | 6. Careers lesson 1 – Using skills in the workplace – Problem Solving | Links to how problem solving will apply to careers within Computer Science and jobs that use problem solving. | | |
| | 7. Careers lesson 2 – Using skills in the workplace – Mathematic skills | Links to how mathematic skills apply to careers within Computer Science and jobs that use mathematic skills. | | |
| Year 8 | | | | |
| | 1. Computational thinking - Flow Charts | Problem solving skills which are needed in a different careers. | UK Bebras Challenge offered | Employee encounters being organised. Tasks being organised around the visits. |
| | 2. Systems Architecture | An understanding of computer components can underpin their knowledge in becoming Systems Analyst. | | |
| | 3. Systems Software | This topic introduces different types of software such as operating systems and utility which can lead to a career in Application Analyst. | | |
| | 4. Systems Security | Links to the Cyber Security industry such as Cyber Security Analyst. | | |
| | 8. Wired and wireless networks | This topic introduces different networks and how networks are created which can lead to a career such as Information Systems Managers. | | |

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| | 5. Programming | This topic introduces different programming techniques which can lead to a career in Games Design and Games Development. | | |
| | 6. Careers lesson 1 – Using skills in the workplace – Creativity | Links to how creativity applies to careers within Computer Science and jobs that use creativity. | | |
| | 7. Careers lesson 2 – Using skills in the workplace – Data analysis | Links to how analysing data applies to careers within Computer Science and IT jobs that use data analysis. | | |
| Year 9 | 1. Systems Architecture | An understanding of computer components can underpin their knowledge in becoming Implementation Specialist. | UK Bebras Challenge offered | Employee encounters being organised. Tasks being organised around the visits. |
| | 2. Systems Software | This topic introduces different types of software such as operating systems and utility which can lead to a career in Systems Software Engineer. | | |
| | 3. Systems Security | Links to the Cyber Security industry such as Forensic Computer Scientists. | | |
| | 4. Wired and wireless networks | This topic introduces different networks and how networks are created which can lead to a career in Network Engineer. | | |

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| | 5. Legal, ethical and cultural issues - Computer legislation | Links to career in law or commercial business e.g. Data Scientist, Legal for Facebook. | | |
| | 6. Algorithms | Links to careers that will use algorithms to solve problems such as a Software Algorithm Engineer. | | |
| | 7. Programming | This topic introduces different programming techniques which can lead to a career in Web design. | | |
| | 8. Data Representation | Links to how binary and hexadecimal are used to represent data and used to understand jobs such as Application Developers. | | |
| | 8. Careers lesson 1 – Knowledge in the workplace | Links to how understand how the different skills we have previously discussed are used within jobs. | | |
| | 9. Careers lesson 2 – Using skills in the workplace – Logical Thinking | Links to how logical thinking skills apply to careers within Computer Science and jobs that use logical thinking skills. | | |
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| Year 10 and 11 - CS | 1. Components of a Computer System | An understanding of computer components and the software that is run on different devices can underpin their knowledge in | UK Bebras Challenge offered | Employee encounters being organised. tasks being organised |

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| | | becoming Systems analyst and software developers. | | |
| | 2. Data Representation | Links to how binary and hexadecimal are used to represent data and used to understand jobs such as Application Developers. | | |
| | 3. Networks | This topic introduces different networks and how networks are created which can lead to a career in Network Technicians. | | |
| | 4. Issues | Links to career in law or commercial business e.g. IT Consultant. | | |
| | 5. Algorithms | Links to careers that will use algorithms to solve problems such as a Software Algorithm Engineer. | | |
| | 6. Programming | Develop software for the games industry or for commercial and organisations. E.g. Games Developer, Ethical Hacker. | | |
| | 7. Design, Testing and IDE's | Links to careers in games development. E.g. Games Tester. | | |
| | 8. Careers lesson 1 – Knowledge in the workplace - data | Links to how understand how the different skills we have previously discussed are used within jobs specifically data. | | |

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| | 9. Careers lesson 2 – Knowledge in the workplace - networks | Links to how understand how the different skills we have previously discussed are used within jobs specifically networking. | | |
| | 10. Careers lesson 1 – Knowledge in the workplace - Ethics | Links to how understand how the different skills we have previously discussed are used within jobs specifically ethical issues. | | |
| | 11. Careers lesson 2 – Knowledge in the workplace - Systems | Links to how understand how the different skills we have previously discussed are used within jobs specifically different computer systems. | | |

Applying Computer Science Knowledge to The Workplace

Our pupils will apply the knowledge they are gaining from studying Compute Science to a variety of workplace scenarios in the following ways.

| Knowledge Lesson Title | Year Group | Within Which Unit (SoW) |
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| Knowledge in Computer Science - Programming (careers in computer science) | Year 9 | After all units of work have been completed so pupils can see how everything they have covered applies to careers, especially programming. |
| Computer Science - Exploration and inspiration career skills and how they relate to the workplace. | Year 10 | At the start of KS4 to set pupils a goal as to what they could achieve, aim for. It will give pupils the motivation to work hard to achieve potential goals. |
| Computer Science - Careers in computer science (visit) | Years 10/11 | This will be placed at any point in the KS4 curriculum depending on the time available from outside visitors. |

Using Computer Science Skills in the Workplace

Our pupils will see the correlation between the skills they use in (subject) lessons and the skills that are used in the workplace, by looking in detail at 7 skills and trying school-based and workplace-based tasks for each skill.

| Skills Lesson Title | Year Group | Within Which Unit (SoW) |
|--|-------------------|--|
| Skills in computer science – Problem Solving (careers in computer science) | Year 7 | After covering E-safety before starting Computational thinking setting a focus for the year. |
| Skills in computer science – Mathematical equations (careers in computer science) | Year 7 | Before pupils learn about algorithms and programming to prepare them for the following units of work. |
| Skills in computer science – Data analysis (careers in computer science) | Year 8 | Before pupils learn about algorithms and programming to prepare them for the following units of work and applying how programs can aid the analysis of data. |
| Skills in computer science – Creativity (careers in computer science) | Year 8 | After all units of work have been completed so pupils can apply their learning and how creativity fits in. |
| Skills in computer science – Logical thinking (careers in computer science) | Year 9 | After covering E-safety before starting Computational thinking setting a focus for the year and how logical thinking is key to Computer Science. |