# Landau Learner Curriculum Overview

**Subject: Computer Science**     **Director of Learning: IA  Year: 11**

| Curriculum organisation | | | | |
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| Students are taught in mixed ability for the equivalent of six single lessons per fortnight. These sessions are split between 2 staff 3:2 split between SDC and IA | | | | |
| **What topics will students be studying this year? Includes links to National Curriculum, Curriculum Intent and Prior Related Learning\*** | | | | |
| Term 1: | Term 2: | Term 3: | Term 4: | Term 5: |
| <ul><li>System Architecture</li><li>Memory & Storage</li><li>System Software</li><li>Controlled Assessment</li></ul> | <ul><li>System Life Cycle</li><li>Networks</li><li>Controlled Assessment</li></ul> | <ul><li>Ethical and Legal Implications of Computer Science</li><li>System Architecture</li><li>Programming Techniques</li><li>Producing Robust Programs</li></ul> | <ul><li>Memory & Storage</li><li>Computational Thinking Logic</li><li>System Security</li><li>Translators & Facilities of Language</li><li>Binary and Hexadecimal</li></ul> | EXAMS |
| **Prior learning**: Programming Y7 T1, T3, Y8 T1, Y9 T1, 2, 3, 4 Y10 T1. Computational thinking Y7 T5. Y9 T1,2,3,4,5 Y10 T1, 3, 4, 5 Memory Y10 T3, 4 **National Curriculum:** develop their capability, creativity and knowledge in computer science, digital media and information technology develop and apply their analytic, problem-solving, design, and computational thinking skills understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns **Curriculum Intent:** This enables students develop their programming understanding and application to program and game development process that would be used in industry. This develops their digital literacy and starts them on the mind-set of a computer scientist. | **Prior learning**: Programming Y7 T1, T3, Y8 T1, Y9 T1, 2, 3, 4 Y10 T1. Computational thinking Y7 T5. Y9 T1,2,3,4,5 Y10 T1, 3, 4, 5 **National Curriculum:** develop their capability, creativity and knowledge in computer science, digital media and information technology develop and apply their analytic, problem-solving, design, and computational thinking skills understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns **Curriculum Intent:** This enables students develop their programming understanding and application to program and game development process that would be used in industry. This develops their digital literacy and starts them on the mind-set of a computer scientist. Additionally, this allows them to understand at greater depth how the computer works as a whole system when storing the data items. | **Prior learning**: Programming Y7 T1, T3, Y8 T1, Y9 T1, 2, 3, 4 Y10 T1. Computational thinking Y7 T5. Y9 T1,2,3,4,5 Y10 T1, 3, 4, 5 Memory Y10 T3, 4, Y11 T1 **National Curriculum:** develop their capability, creativity and knowledge in computer science, digital media and information technology develop and apply their analytic, problem-solving, design, and computational thinking skills understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns **Curriculum Intent:** This enables students develop their programming understanding and application to program and game development process that would be used in industry. This develops their digital literacy and starts them on the mind-set of a computer scientist. Additionally, this allows them to understand at greater depth how the computer works as a whole system developing the knowledge of what happens when processing instructions. | **Prior learning**: Programming Y7 T1, T3, Y8 T1, Y9 T1, 2, 3, 4 Y10 T1. Computational thinking Y7 T5. Y9 T1,2,3,4,5 Y10 T1, 3, 4, 5 **National Curriculum:** develop their capability, creativity and knowledge in computer science, digital media and information technology develop and apply their analytic, problem-solving, design, and computational thinking skills understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns **Curriculum Intent:** This enables students develop their programming understanding and application to program and game development process that would be used in industry. This develops their digital literacy and starts them on the mind-set of a computer scientist. Additionally, this allows them to understand at greater depth how the computer works as a whole system developing the knowledge of what happens when processing instructions. | **Prior learning:** All previous terms in Year 9, Year 10, Year 11. **National Curriculum:** develop their capability, creativity and knowledge in computer science, digital media and information technology develop and apply their analytic, problem-solving, design, and computational thinking skills understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns **Curriculum Intent:** This enables students to develop a holistic application of how computing impacts on their wider life. In the largest growing sector computing is applied to a number of now ethical and moral dilemmas in the real world. This enables students to develop a breadth of understanding of the digital world and how this contributed to a digital society. |

| Equipment needed for sessions: | What can you do to support your child? |
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| <ul><li>Cambridge Elevate Textbook (Provided by College)</li><li>Computer Science Exercise book (IA/SDC)</li><li>Computer and internet access (provided by College)</li><li>Lesson resources (Digital and physical provided by the learning tutor)</li></ul> | <ul><li>Encourage your student to engage with their homework and complete it on time and to a high standard, asking them to show you the finished work.</li><li>Take an interest in what you child is learning and talk to them about Computing in the real world</li><li>Encourage them to watch television shows, documentaries and films that include computer science and developing technology.</li></ul> |
| **How will learning be assessed and progress measured?** | **Extension and enrichment activities:** |
| <ul><li>End of Topic assessment</li><li>Marking of written and practical work is carried out on a regular basis in line with the College policy</li><li>End of year summative assessment.</li></ul> | <ul><li>Robotics and Coding Club (Thursday with IA)</li><li>The National Museum of Computing/Bletchley Park/ Manchester's Museum of Science & industry</li><li>At-Bristol Science Centre / National Space Centre</li></ul> |

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| • Regular peer and self-marking. | • The Science Museum / National Media Museum/ Jodrell Bank<br>• Leicester Retro Computer Museum |