### Curriculum Delivery KS3

Each topic is delivered through lesson time with extended learning to reinforce learning, and blended learning to cultivate deeper, richer learning experiences.

Typically the classes are taught as part of a rotation. Each rotation is typically 24 weeks, split into two units of work. Each unit culminates in a summative assessment.

### Curriculum aims Year 7

We aim to build on the knowledge and skills gained at our feeder primary schools.
Computing comprises of:
- **ICT** – Information Communication Technology, and
- **Computer Science** – computational thinking and an understanding of how computer systems work.

We aim to make students confident users of IT, and effective in basics of coding. The students will develop skills for analysis and research.

We aim to ensure students understand the dangers and implications of using different technologies.

### Curriculum Content Year 7

- **E-safety** – studying how to reduce personal safety and security risks to private information and property associated with using the internet, and self-protection from computer crime.
- **Binary** – at the lowest levels of a computer everything is represented by a binary electrical signal that registers in one of two states: one or off.
- **Algorithms** – steps to solving problems logically.
- **Programming** – designing and building an executable computer program for accomplishing a specific computing task using Small Basic.
- **Data Representation** – how computers represent images and text.
- **Sorting** – the process of organising data in a particular order allowing for information to be found easier.
- **Publisher** – a desktop publishing application in which the emphasis is placed on page layout and design.
- **Hardware** – the physical, tangible components of a computer.
### Curriculum aims

**Year 8**

The curriculum in Year 8 will deepen the students’ understanding of how computers work and strengthen knowledge of concepts from Year 7. Teaching will begin to integrate more sophisticated transferable computational thinking skills and independent learning.

**Year 9**

The curriculum in Year 9 will deepen the students’ understanding of how computers work and strengthen knowledge of concepts from Years 7 and 8. Develop transferable problem solving skills and allow students to develop their ability to learn new software quickly and efficiently.

### Curriculum Content

#### Year 8

- **E-safety** – studying how to reduce personal safety and security risks to private information and property associated with using the internet, and self-protection from computer crime.
- **Binary** – at the lowest levels of a computer everything is represented by a binary electrical signal that registers in one of two states: one or off.
- **Algorithms** – steps to solving problems logically.
- **Programming** – designing and building an executable computer program for accomplishing a specific computing task using Python.
- **Searching** – the computer process of finding data.
- **Operating Systems** – low-level software that supports a computer’s basic functions.

#### Year 9

- **E-safety** – studying how to reduce personal safety and security risks to private information and property associated with using the internet, and self-protection from computer crime.
- **Algorithms** – steps to solving problems logically.
- **Programming** – designing and building an executable computer program for accomplishing a specific computing task using Small Basic.
- **Logic Gates** – the fundamental building blocks of digital integrated circuits, which input and output binary values.
- **Networks** – a set of computers connected together for the purpose of sharing resources.
- **Web Design** – planning and creating a website using the software Dreamweaver.
# Computing

**Creative iMedia**

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<tr>
<th>Curriculum Aims Year 10</th>
<th>Curriculum Aims Year 11</th>
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<tbody>
<tr>
<td>To fully understand and develop knowledge of preproduction’s procedures for any digital product. Students will aim to have a working knowledge of how to produce high quality digital products and what factors to consider when undertaking project work. Learner will cover topics for Units R082 and R092 from the OCR Creative iMedia Cambridge Nationals Level 1 / 2 course.</td>
<td>Using the foundation knowledge gained in the previous two years, students are to broaden their skill set and working knowledge of specific digital products and be able to give students the maturity to evaluate and review multiple digital projects.</td>
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<td>Students will have 5 lessons a fortnight.</td>
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<td>Each unit has a formal assessment at the end, where staff have guidance and rules from the exam board OCR and JCQ.</td>
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| - Autumn – To learn the necessary skills for R082 and R092 and to complete activities in preparation for the controlled assessment tasks.  
- Spring – Complete controlled assessments on R082 and R092. Begin learning the content for R081 exam module.  
- Summer – Complete learning the content on R081 and sit the exam in May. Opportunity to revisit controlled assessments in R082 and R092. | - Autumn – Complete R085. To learn the necessary skills for R082 and R092 and to complete activities in preparation for the controlled assessment tasks.  
- Spring – Complete controlled assessments on R082 and R092. Revisit the content for R081 exam module.  
- Summer – Continue on R081 for those students who can re-sit the exam in May. Opportunity to revisit controlled assessments in R082 and R092. |

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| This includes:  
- Understand the purpose and content of pre-production.  
- Planning a pre-production and producing documentation.  
- Reviewing preproduction materials.  
- Understanding the purpose and properties of digital graphics.  
- Planning the creation of a digital graphics.  
- Creating a digital graphic.  
- Reviewing digital graphics.  
- Understanding the purpose and properties of digital games.  
- Planning the creation of a digital games.  
- Creating a digital game.  
- Reviewing digital game. | In Year 11 student will complete and finish the remaining two units of the OCR Creative iMedia course and re-sit any controlled assessments necessary. |
### OCR GCSE Computer Science

**Curriculum Aims Year 10**

The GCSE Computer Science course is an engaging and practical subject which focuses on both hardware and software.

The subject aims to encourage students to develop their understanding and application of the core concepts within a computer system.

The course aims to develop students understanding of system architecture and how the components that make up a system operate and communicate with one another.

Students will comprehend and apply the essential principles and concepts of computational thinking including abstraction, decomposition, logic, algorithms, and data representation.

Students also analyse problems in computational terms and plan inventive solutions by designing, writing, debugging and evaluating programs using the python programming language.

The curriculum aims to embed a love for learning in students and grow their passion toward technology.

**Curriculum Delivery Year 10**

Students will have 5 lessons a fortnight.

Lessons will be delivered through theory and practical based tasks.

Typically students will be assessed formatively during lessons and receive summative assessment throughout the GCSE course.

Past papers and GCSE style questions are used to assess students understanding of both components 1 & 2 in preparation for their GCSE exams.

Practical tasks will be assessed visually and with the assistance of online tools.

**Curriculum Content Year 10**

**Computer systems – COMP01 (50% of GCSE 1.5 hour exam)**

- Systems Architecture
- Memory
- Storage
- Wired and wireless networks
- Network topologies, protocols and layers
- System security
- System software
- Ethical, legal, cultural and environmental concerns

**Computational thinking, algorithms and programming - COMP2 (50% of GCSE 1.5 hour exam)**

- Algorithms
- Programming techniques
- Producing robust programs
- Computational logic
- Translators and facilities of languages
- Data representation
### Curriculum Aims Year 11

Develop previous knowledge gained and cover pinnacle topics and concepts within the course in preparation for the students GCSE exams.

### Curriculum Delivery Year 11

- Students will have 5 lessons a fortnight.
- Students will start their Non-Assessed 20-Hour controlled assessment. This is a requirement to pass the course. This task involves programming & documenting a solution to a problem.
- Once complete, select topics will be recovered and content revised up until the GCSE exams.
- GCSE EXAM in COMP01 Computer systems (50% of final grade)
- GCSE EXAM in COMP02 Computational thinking, algorithms and programming (50% of the final grade)

### Curriculum Content Year 11

**Programming Project**
- Programming techniques
- Analysis
- Design
- Development
- Testing and evaluation and conclusions

**Revision/complete**
- COMP01 – all chapters
- COMP02 – all chapters