

# ICT

## Preparing students for tomorrow, bit by bit

The ICT department will help to create, share, and apply knowledge in all branches of Computer Science and ICT. We will educate students to be successful, ethical, and effective problem-solvers with a passion to innovate and create, rather than just passive consumers and users of technology. We will develop an understanding and appreciation of all aspects of digital products, from how they work to how they look. We will foster curiosity and encourage exploration to create students who can contribute positively to the well-being of our society and who are prepared to tackle the complex 21st Century challenges facing the world.

Summary focus areas:

- Innovate, create, develop
- Solving 21st Century problems
- Active developers not passive consumers

Autumn		Spring		Summer
Methods of data collection, handling, processing and representation	Component 2 assessment project	Component 2 assessment project	Component 3 revision	

Homework for ICT is set weekly to support and extend the students' studies from their lessons. Work may be a mixture of practical, computer-based tasks and paper-based written work or design tasks. Activities set as homework may be:

- Preparatory work or research ahead of a new topic or concept being discussed in lessons.
- Extension work that allows the student to explore a topic in more depth or in other contexts.
- Application work that allows students to practise skills or demonstrate abilities.

Students are expected to spend around an hour on a homework activity each week and work is marked promptly to help students to identify and understand their weaknesses to make incremental improvements over the course of the year.

Unit	Duration (lessons)	Learning Objectives/Outcomes
Methods of data collection, handling, processing and representation	12	<ul style="list-style-type: none"> <li>• Understand different data processing methods and their uses</li> <li>• Use spreadsheet and database software to manipulate and process data using common tools</li> <li>• Produce digital dashboards to collate and present data in user-friendly ways</li> <li>• Use principals of project planning to design and implement a system to collect, store, manipulate and present data according to a given brief</li> <li>• Test and evaluate a system</li> </ul>
Component 2 assessment project	14	<ul style="list-style-type: none"> <li>• Investigate data supplied by the examination board for the project and produce a word-processed report</li> </ul>
Component 2 assessment project	24	<ul style="list-style-type: none"> <li>• Use data manipulation tools to represent and summarise data and information</li> <li>• Produce a document/report containing evidence of having satisfied the brief.</li> <li>• Draw conclusions and review data presentation methods, producing a document that identifies trends and patterns in the data and supports the conclusions made.</li> </ul>
Component 3 revision	10	<ul style="list-style-type: none"> <li>• Understand how and why modern technologies are used by organisations to access and manipulate data, and to provide access to systems and tools in order to complete tasks</li> <li>• Understand how modern technologies impact on the way organisations perform tasks</li> <li>• Explain changes to modern teams facilitated and managed by modern technologies</li> <li>• Understand how modern technologies aid inclusivity and accessibility</li> <li>• Understand why systems are attacked, the nature of attacks and how they occur, and the potential impact of breaches in security on the organisation and stakeholders</li> <li>• Understand how different measures can be implemented to protect digital systems</li> <li>• Understand the need for and nature of security policies in organisations</li> <li>• Understand the content that constitutes a good security policy and how it is communicated to individuals in an organisation</li> <li>• Consider the responsible use of digital systems, including how</li> </ul>

		<p>systems and services share and exchange data as well as the environmental considerations of increased use</p> <ul style="list-style-type: none"> <li>• Understand the scope and purpose of legislation that governs the use of digital systems and data, and how it has an impact on the ways in which organisations use and implement digital systems</li> <li>• Understand data protection principles</li> <li>• Understand how individuals in the digital sector plan solutions and communicate</li> <li>• meaning and intention</li> <li>• Understand how different forms of written and diagrammatical communication can be used to express understanding and demonstrate the flow of data and information</li> <li>• Interpret and use standard conventions to combine diagrammatical and written information to express an understanding of concepts</li> </ul>
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