



**Ormiston
DENES
Academy**

Information Communication Technology & Computing

Key Stage 3 & 4 Curriculum Information

Subject Contact: Mr James Kerry

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Key Stage 3

Students in KS3 will learn computer science and information technology.

The focus of the new programme of study moves towards programming and other aspects of computer science. Programming has been part of the ICT national curriculum for some time but has frequently been overlooked or treated superficially. However, there is more to computer science than programming. Computer science incorporates techniques and methods for solving problems and advancing knowledge, and includes a distinct way of thinking and working that sets it apart from other disciplines. The role of programming in computer science is similar to that of practical work in other sciences - it provides motivation and a context within which ideas are brought to life.

Computational thinking is core to the programme of study. It is the process of recognising aspects of computation in the world that surrounds us, and applying tools and techniques from computing to understand and reason about both natural and artificial systems and processes. Computational thinking provides a powerful framework for studying computing, with wide application beyond computing itself. It allows pupils to tackle problems, to break them down into solvable chunks and to devise algorithms to solve them.

In summary, computational thinking involves:

- decomposition
- pattern recognition
- abstraction
- pattern generalisation
- algorithm design.

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Key Stage 4

GCSE IT

TLM Ingot L2 IT

Progression:

This qualification supports progress onto further study including A Levels and higher education courses. IT skills are essential and sought after and valued by employers, with careers including analyst, technician, web developing, etc.

The Level 2 qualification assessment has two components.

Component 1

Coursework assessed in terms of competence in using technology to support learning.

Component 2

An externally set and externally marked examination to assess knowledge and understanding that underpins user competence.

TLM Ingot GCSE Exam

To complete this course you will need to gain 17 credits. This will comprise of the following units

Units

Unit 1 Improving Productivity Using IT	(4 Credits)
Unit 15 Imaging Software	(4 Credits)
Unit 10 Presentation Software	(4 Credits)
Unit 6 Specialist Software	(3 Credits)
Unit 17 Video Software	(3 Credits)
Total	18 credits

You will then take an online exam

You need to gain 50/70 marks to gain a Grade C. Your coursework will make up 30 marks.

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Key Stage 4

OCR GCSE Computer Science

WHY STUDY COMPUTING?

This exciting course gives you an excellent opportunity to investigate how computers work and how they're used, and to develop computer programming and problem-solving skills. It is a challenging and worthwhile course which is currently highly sort after by employers.

Course structure.

Unit 1 - Exam 40% Computer Systems.

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

Unit 2 - Exam 40% Computational thinking, algorithms and programming

Algorithms • Programming techniques • Producing robust programs • Computational logic • Translators and facilities of languages • Data representation

Controlled assessment - 20% , 20 hours' programming project

Programming techniques • Analysis • Design • Development • Testing and evaluation and conclusions

Course assessment

Unit 1 and Unit 2 and assessed through two exams.

Programming project is a 20 hours controlled assessment based on Python