



# THE COLESHILL SCHOOL

## CURRICULUM OVERVIEW

### COMPUTER SCIENCE

## CURRICULUM

Our provision is a coherent and carefully sequenced “knowledge-engaged” curriculum based on the principles of cognitive science. There is a focus on development of literacy and the application of acquired knowledge to ensure children access the curriculum at a depth to ensure a deep and enduring understanding in discrete subject areas. The curriculum framework of cognitive education is planned to enable children to think independently and contribute positively to society and the wider world.

## CURRICULUM HOURS

Key Stage	Hours per fortnight
3	2
4	3/5
5	8/9

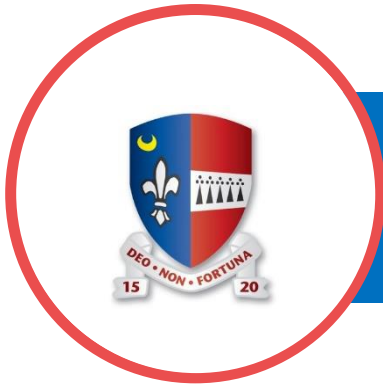
## HOW DO WE ASSESS?

At TCS, all subjects follow the ‘Assessment Cycle’ when completing key significant marked pieces. Each assessment cycle has a block of initial teaching, a revision lesson, an assessment lesson and a review lesson (Nb. Dept. are free to flex when assessments take place around the term to fit best with curriculum schemes of work and subject demands).

These serve several purposes:

- To highlight the importance of all formal assessments.
- To ensure all assessments are preceded by thorough revision.
- To ensure all assessments are followed-up with detailed feedback and subsequent intervention or support
- To ensure parents are kept informed of their child’s progress to Age Related Criteria

ALL students will complete a minimum of 3 Key Assessments during the Academic Year, one per Term. It is expected that subjects follow the TCS Assessment Cycle when designing and implementing their assessments:



# THE COLESHILL SCHOOL

## KS3 CURRICULUM PLAN

### COMPUTER SCIENCE

## CURRICULUM INTENT

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Computers are widely used in all aspects of business, industry, government, education, leisure and the home. In this technological age, a study of computer science, and particularly how computers are used in the solution of a variety of problems, is essential to learners.

Computer science demands both logical discipline and imaginative creativity in the selection and design of algorithms and the writing, testing and debugging of programs; it relies on an understanding of the rules of language at a fundamental level; it encourages an awareness of the management and organisation of computer systems; it extends learners' horizons beyond the school or college environment in the appreciation of the effects of computer science on society and individuals.

## TERM 1

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### YEAR 7:

E-SAFETY AND HARDWARE

### YEAR 8:

ALGORITHMS AND PYTHON PROGRAMMING

### YEAR 9:

HARDWARE AND PYTHON PROGRAMMING

## TERM 2

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### YEAR 7:

PROGRAMMING USING SCRATCH

### YEAR 8:

NETWORKS AND PYTHON PROGRAMMING

### YEAR 9:

ALGORITHMS & PYTHON PROGRAMMING USING ITERATION

## TERM 3

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### YEAR 7:

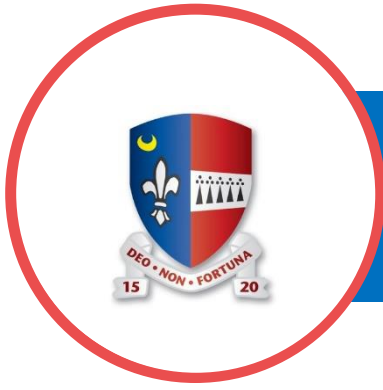
COMPUTER LOGIC AND CYBER-SECURITY

### YEAR 8:

HTML AND DATA ON A COMPUTER SYSTEM

### YEAR 9:

PYTHON GRAPHICS AND NETWORKS



# THE COLESHILL SCHOOL

## KS4 CURRICULUM PLAN

### COMPUTER SCIENCE

## EXAMINATION BOARD

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GCSE: EDUQAS  
CODE: 601/8291/X

## PAPER

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PAPER 1: C1  
Understanding Computer  
Science  
Written exam: 1 hour 45  
minutes  
100 marks  
50% of GCSE

PAPER 2: C2  
Computer Programming  
On-screen examination: 2 hours  
80 marks  
50% of GCSE

## PAPER 1

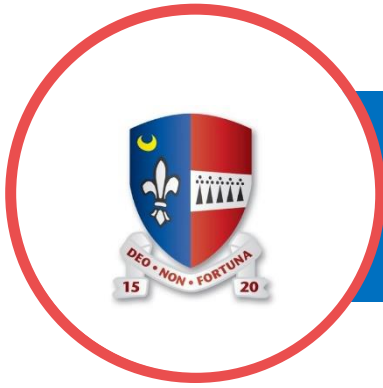
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THIS COMPONENT INVESTIGATES HARDWARE, LOGICAL OPERATIONS, COMMUNICATION, DATA REPRESENTATION AND DATA TYPES, OPERATING SYSTEMS, PRINCIPLES OF PROGRAMMING, SOFTWARE ENGINEERING, PROGRAM CONSTRUCTION, SECURITY, AUTHENTICATION AND DATA MANAGEMENT AND THE IMPACTS OF DIGITAL TECHNOLOGY ON WIDER SOCIETY AS WELL AS ALGORITHMS AND PROGRAMMING CONSTRUCTS.

## PAPER 2

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THIS COMPONENT INVESTIGATES PROBLEM SOLVING, PROGRAMMING LANGUAGES, DATA STRUCTURES AND DATA TYPES, PROGRAM DESIGN, IMPLEMENTATION AND TESTING. LEARNERS ARE REQUIRED TO PRODUCE A PROGRAMMED SOLUTION TO A SET TASK WHICH WILL THEN BE THE BASIS FOR EXAMINATION.



# THE COLESHILL SCHOOL

## KS5 CURRICULUM PLAN

APPLIED IT

### EXAMINATION BOARD

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OCR  
OCR Level 3 Cambridge  
Technical Introductory Diploma  
in IT  
CODE: 601/7099/2

### PAPER

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#### PAPER 1:

Written exam: 1 hour 30  
minutes  
80 marks  
25% of Qualification

#### PAPER 2:

Written exam: 1 hour 30  
minutes  
80 marks  
25% of Qualification

#### UNITS OF COURSEWORK

Three Units

- **Unit 6** – Application Design
- **Unit 15** - Games design and prototyping
- **Unit 21** – Web design & Prototyping

50% of Qualification

### PAPER 1 – FUNDAMENTALS OF IT

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#### WHAT'S ASSESSED

INFORMATION LEARNT IN THIS UNIT WILL PROVIDE A SOLID FOUNDATION IN THE FUNDAMENTALS OF HARDWARE, NETWORKS, SOFTWARE, THE ETHICAL USE OF COMPUTERS AND HOW BUSINESS USES IT

### PAPER 2 – GLOBAL INFORMATION

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#### WHAT'S ASSESSED

THE PURPOSE OF THIS UNIT IS TO DEMONSTRATE THE USES OF INFORMATION IN THE PUBLIC DOMAIN, GLOBALLY, IN THE CLOUD AND ACROSS THE INTERNET, BY INDIVIDUALS AND ORGANISATIONS. THEY WILL DISCOVER THAT GOOD MANAGEMENT OF BOTH DATA AND INFORMATION IS ESSENTIAL, AND THAT IT CAN GIVE ANY ORGANISATION A COMPETITIVE EDGE. THIS UNIT WILL PROVIDE STUDENTS WITH A GREATER UNDERSTANDING OF HOW ORGANISATIONS USE INFORMATION SOURCES BOTH INTERNALLY AND EXTERNALLY AND THE TYPES OF INFORMATION THEY WILL ENCOUNTER.

### COURSEWORK – UNIT 6, 15 AND 21

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#### WHAT'S ASSESSED

STUDENTS WILL FOLLOW THE APPLICATION DEVELOPER PATHWAY. THEY WILL COMPLETE 3 UNITS OF COURSEWORK OVER 2 YEARS. WITHIN UNIT 6 -APPLICATION DESIGN. LEARNERS WILL EXPLORE APPLICATION DESIGN AND DEVELOP A PROTOTYPE TO MEET A USER REQUIREMENT. THIS WILL BE COMBINED WITH UNIT 15 GAMES DESIGN AND PROTOTYPING, IN WHICH THEY DESIGN AND CODE A COMPUTER GAME TO MEET A BUSINESS NEED. FURTHERMORE THEY WILL COMPLETE UNIT 21 -WEB DESIGN AND PROTOTYPING. CREATING BOTH A DESKTOP AND MOBILE BASED WEBSITE APPROPRIATE FOR AN IDENTIFIED TARGET AUDIENCE.

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