

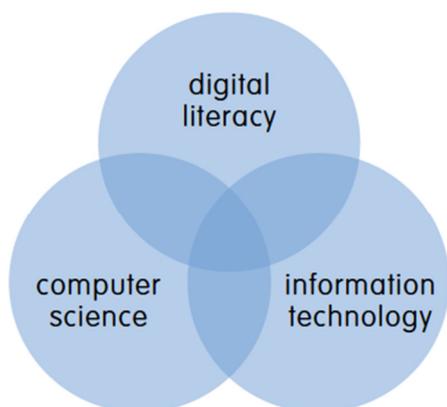
Blanche Nevile School - Computing Curriculum Information 2015

Last September 2014, Computing replaced ICT as a national curriculum subject at all key stages. For KS3 we will follow the Computing curriculum pathway and KS4 we will have both ICT and Computing.

Computing is concerned with how computers and computer systems work, how they are designed and programmed, how to apply computational thinking, and how to make best use of information technology.

The Royal Society of Computing has identified three distinct strands within computing, each of which is complementary to the others: computer science (CS), information technology (IT) and digital literacy (DL). Each component is essential in preparing pupils to thrive in an increasingly digital world.

Computing - what are the three aspects?



Computer science is the scientific and practical study of computation: what can be computed, how to compute it, and how computation may be applied to the solution of problems.

Information technology is concerned with how computers and telecommunications equipment works, and how this may be applied to the storage, retrieval, transmission and manipulation of data.

Digital literacy is the ability to effectively, responsibly, safely and critically navigate, evaluate and create digital artefacts using a range of digital technologies.

Computer Science	I.T.	Digital Literacy
Programming Coding Downloading and Installing Designing Problem Solving	The Cloud The Internet Networking Systems Problem Solving	Applying Knowledge Understanding Communication Collaboration Text Images Video Audio Research Problem Solving E-Safety Safe and responsible use Legal and ethical*surfing*
Running Software	Hardware	Behaviours

The aims of computing as a whole also reflect the distinctions between the three strands.

- Pupils are expected to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation **(CS)**
- Pupils are expected to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems **(CS)**.
- Pupils are expected to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems **(IT)**
- Pupils are expected to be responsible, competent, confident and creative users of information and communication technology. **(DL)**

Years 7, 8 & 9 will follow the new KS3 computing programme where we have planned for the pupils to learn wider concepts of Computing, including the essential area of e-safety. We will balance and include the three aspects of Computing in all topic areas. We will ensure that the computing curriculum requirements are being met by the pupils' learning.

Year 7:

The following units of work will be covered during Year 7:

1. E-safety / Internet
2. Office
3. MSW Logo
4. Scratch I
5. Computer I
6. I can animate
7. Spex

Year 8:

The following units of work will be covered during Year 8:

1. E-safety / Internet
2. Cryptography
3. Computer II
4. Flowol 4
5. Scratch II
6. I can present I
7. Moviemaker

Year 9:

The following units of work will be covered during Year 9:

1. E-safety / Internet
2. Photoshop
3. Computer III
4. Python I
5. Python II
6. I can present II
7. WebPage Design

Years 10 & 11

Functional skills

KS4, Year 10 and 11 will learn functional skills covering the range from entry levels 1, 2 and 3 and levels 1 and 2 for a period of two years. Below are the functional skills levels and their GCSE equivalents.

The course is assessed by exam whereby the students will be using computers to complete set tasks.

Equivalence Grades - Functional skills	GCSE
Level 2	A – C
Level 1	D – G

OCR Level 1/2 Cambridge Nationals in ICT

Functional Skills will be phased out in 2017. We will be looking at the new Level 1/2 Cambridge National in ICT. These levels are industry-relevant, geared to key sector requirements and very popular with schools and colleges because they suit such a broad range of learning styles and abilities. They are an excellent start for vocational study and enable progression to Level 3 qualifications should pupils wish to continue onto further education. Cambridge Nationals in ICT are equivalent to GCSE's. Three themes are covered: business information systems, creative and technical skills.

From September 2016, Year 10 pupils will start the Level 1/2 Cambridge Nationals in the ICT course. The Level 1/2 Cambridge National Certificate in ICT consists of two mandatory units and two optional units. Functional skills will cease at the end of July 2016 except for year 11 who will finish Level 1 and 2.

OCR Creative iMedia

Creative iMedia will equip learners with a range of creative media skills and provide opportunities to develop, in context, transferable skills such as research, planning, and review, working with others and communicating creative concepts effectively. Through the use of these skills, learners will be creating 'fit-for-purpose' creative media products. The Creative iMedia Level 1/2 Cambridge National Award consists of two mandatory units, The Creative iMedia Level 1/2 Cambridge National Certificate in ICT consists of two mandatory units and two optional units.

Creative iMedia Cambridge National is a cross curriculum subject with ICT/Computing and Technology.

OCR Cambridge Nationals can be achieved at Levels 1 and 2.

Level 2 (Approximate GCSE equivalent grades A-C)

- Distinction at Level 2
- Merit at Level 2
- Pass at Level 2

Level 1 (Approximate GCSE equivalent grades D-F)

- Distinction at Level 1
- Merit at Level 1
- Pass at Level 1

Progression

Pupils will have progression sheets for every topic area. Within these, there will be a list of learning objectives with two additional columns: 'Pupil' and 'Teacher'. These columns will have triangular dots, one line for "needed help", second line for "some help given" and third line for "independent work". This gives pupils an opportunity to mark their own work with the teacher alongside them. There will also be two rows: one for the pupil to write any comments and the other for teacher feedback.

Each topic has a progression route with pupil's progression records will being tracked and recorded. A pupil's progression will be recorded by what they have achieved through covering the criteria within three different bands: 1, 2 and 3.

Each year group will have progression routes within individual topics and the average progression accumulated for the whole year. For example: pupils in year 7 will score out of 7.1, 7.2 and 7.3. This applies only to the current year and is not carried forward to the next year because every topic has a different content.

Overview of Units of work

E-Safety / Internet

Pupils need to be aware of potential risks to their safety and well-being, and steps they can follow to reduce any risks posed, due to increased use of the Internet, social networking sites and texting as a means of communication.

Pupils learn and are reminded how to use email correctly and how to respond appropriately. Email will be used for homework.

E-safety will be taught at different levels for each year. Year 7 pupils will be introduced to the use of computers on the school network by logging in with their given username and password.

During this essential unit, students will learn the importance of staying safe online. They will learn about different topics ranging from social networking sites to cyber bullying, and will design a Poster aimed at Year 6 students.

They will learn to use and navigate around email, in particular how to create a contact list, attach documents, write a formal business letter, in both e-mail and Word, and reply to the sender.

Cross curriculum teaching will take place with the Unit Award scheme, the pupils will be taught and have to demonstrate the how to use mobiles safety and how to make 999 calls, using either voice or text (SMS).

MSW Logo

MSW Logo is a basic sequencing application to enable the pupil to write a correct procedure e.g. for a turtle to move. They can build up to drawing mathematical symmetrical shapes e.g. polygons.

Scratch I & II

This unit uses the Scratch programming environment to teach pupils the basics of computer programming. Scratch takes advantage of advances in computing power and interface design to make programming more engaging and accessible to learners of all ages and abilities. It is a skill-building path of coding in a visual way.

Python I and II

This unit of work will give learners a basic understanding of the Python programming language. Through a series of lessons learners will be introduced to the basic Python syntax and look at selection, loops, functions, lists and classes. Pupils will be given the building blocks to extend their programming skills.

Computer I, II & III

The aim of this unit is to give learners an understanding of the key components that make up a computer system, including inputs, outputs and hardware. They will be introduced to binary numbers and how to convert between binary and denary numbers and will gain a basic understanding of computer networks and operating systems.

I Can Animate

Pupils will learn how to animate, by creating a sequence of pictures by using camcorder and moviestop to create, film and **present** their work in the form of an animated movie.

Spex

Spex Classic is an educational software to design places. Pupils can design rooms in a house, a classroom in a school, a street, garden, leisure-pool, shop, moonbase and even an Egyptian tomb!

They will have a budget and use a spreadsheet for planning and purchasing and displaying items. Spex is an object based graphics software ideal for graphical modelling and it is relevant to the 3D design aspects of ICT and design technology.

Flowol 4

Pupils will learn how to write and draw a sequence of instructions by using flowcharts. FLOWOL teaches how computer systems respond to precise instructions by creating control systems for everyday situations such as road traffic lights and rail systems. Pupils will have to input the correct sequence instructions / procedures to make it work.

I can present I and II

This is an application designed to bring pupil presentations to life by allowing them to create, film and present their work in a new and exciting way. Pupils will do research beforehand on what to present. Pupils will also be able to present themselves in-vision on screen using a suitable background.

CAD

At the moment we are using 'sketch up', within the technology carousel learning group. SketchUp is user friendly 3D modelling software. Pupils start by drawing lines and shapes, on which they then push and pull surfaces to turn them into 3D forms. They will also stretch, copy, rotate and paint to make an object or building.

We hope to change from Sketch Up to CAD next year, to widen the pupils' experience depending on individual pupil ability. CAD is a part of the cross-curriculum with ICT/computing and Tecghnology.

Autodesk is equipped with tools and resources to help pupils with creative design to make things, which can be visual in 3D rather than 2D. We will look into purchasing a 3D Printer to produce simple things from the designed object by using Autodesk and also look into cross curriculum which might be useful in Technology/ Design

Webpage Design

This unit will give learners the opportunity to design and build their own websites using Serif WebPlus X7. The unit will also give students an understanding of how a website project is developed.

Photoshop

Pupils will learn new skills in a professional graphics package. They will learn and explore new tools and techniques that will allow them to manipulate images and create a professional standard graphics on the computer. They will learn the difference between vector and bitmap based graphics and will have a good understanding of how Photoshop can be used in the wider context.

Cryptography

Pupils will learn about the use and purpose of cryptography and encryption of data. They will learn about the purpose and use of cryptography in everyday society. They will understand how people use computers to make more secure and sophisticated methods of cryptography – encipher to be developed.

Movie

Serrif MoviePlus X6 enables pupils to think and present their work in the most creative and dynamic ways possible, while learning techniques of project management and effective communication.

Pupils will learn how to use a wide variety of tools to convert files into any of the latest video formats.

Office

Year 7 pupils will have a basic introduction to key Information Technology skills through using Microsoft Office tools: Word, PowerPoint, Publisher and Excel to enable them to use these programmes in a variety of different subjects.

Pupils will use Word to prepare for writing reports etc., and will learn to understand various ways of presenting their work using different applications such as Powerpoint or Publisher.

Pupils are introduced to spreadsheet modelling and will learn how to input data to find and determine an outcome. Pupils will also learn how to create graphs and the basic skills needed in order to format and edit a spreadsheet.

Pupils will understand all the common features within the three Microsoft Office applications.