



Tuition, Medical and Behaviour Support Service

Curriculum Policy - Primary ICT and Computing



Reviewed:	September 2020
Next Review:	Will be rewritten in accordance with Subject Development plan by September 2021
Responsibility:	Matthew Brown

AIMS AND PRINCIPLES

Through the teaching of Computing and Information Communication Technology we aim to ensure that all of the pupils receive their entitlement to a high quality, inclusive and broad and balanced curriculum that reflects their individual academic needs. Considered, purposeful and enjoyable mixed ability and mixed age group planning will cater for the students' diverse SEND and will respond to the varied learning styles of our pupils. We will promote the value of learning through high standards in teaching. This will support the pupils own personal, social, emotional and behavioural needs to encourage and facilitate independent and reflective learners.

Our Policy follows The National Curriculum 2014 for Computing Guidelines and aims to ensure that all pupils:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
- Are responsible, competent, confident and creative users of information and communications technology.

PURPOSE OF STUDY

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

PLANNING

School Curriculum

Our ICT and Computing curriculum is divided into 4 main areas;

- Information Technology
- Digital Literacy and E-Safety
- Computer Science - Theory
- Computer Science – Programming

These are the broad areas of ICT knowledge, skills and understanding that we consider essential for modern learners. It is important that learners develop their understanding within meaningful contexts in order to support their understanding and transferrable application of skills.

The diagram below shows a breakdown of the skills and knowledge into the curriculum areas.

ICT and Computing			
Information Technology	Digital Literacy and e-safety	Computer Science Programming	Computer Science Theory
Creating a multimedia presentation	How the internet works	Algorithms	History and evolution of computing and robotics
Creating a stop motion Animation	Staying safe online	Simulation	How computers work
Creating music electronically	Social networks	Control	Information and data storage
Creating a multimedia video	Online Identities	Programming	
Creating a document	Digital communication	Modelling	
Creating a spreadsheet		Games and App Creation	

Planning

Through our two year rolling programme of study, children will be taught a unit of Information Technology each term, which is intended to be taught in a meaningful context, with links across our curriculum resulting in a finished output.

In addition, children will be taught one other curriculum area, as outlined below.

Autumn		Spring		Summer	
Information Technology	Digital Literacy & E safety	Information Technology	Computer Science - Programming	Information Technology	Computer Science - Theory
Creating a Multimedia Presentation	How the internet works / staying safe online	Creating a Stop Motion animation	Algorithms and control	Creating music electronically	How computers work
Autumn		Spring		Summer	
Information Technology	Digital Literacy & E safety	Information Technology	Computer Science - Programming	Information Technology	Computer Science - Theory
Creating a multimedia video	How the internet works / staying safe online	Creating a spreadsheet	Programming - Scratch Jr / Hopscotch	Creating a document / ebook	History of computing and robotics

FS & Key Stage 1 Overview

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key Stage 2 Overview

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Attainment Targets

Year	Information Technology	Computer Science	Digital Literacy & E safety
1	<ul style="list-style-type: none"> I can complete a simple task on a computer or tablet by following instructions. I know I need to save my work. I can load my digital work (with some help). I can enter text in to my work. I understand that you can enter numbers in to a computer (eg to create a pictogram). 	<ul style="list-style-type: none"> I follow instructions to make something happen so it works. I can control the movement of a floor turtle (eg BeeBot) using single commands (eg FD or RT) I can control the movement of a floor turtle (eg BeeBot) using MORE THAN ONE command (FD then RT) to make it work well. 	<ul style="list-style-type: none"> I can start to understand that some work is online (internet based) and some offline. I understand that some information is private (eg passwords) and I mustn't share it. I know that I can tell a trusted adult if something worries me online.
2	<ul style="list-style-type: none"> I can use technology to create a range of content (i.e text based, image based, number based). I can save and load (retrieve) my work on a range of devices (e.g laptops and tablets). I can change what is in my work and the look of my work (i.e change the format). I can start to organise my work (e.g using file names and folders). 	<ul style="list-style-type: none"> I understand that an algorithm is a list of instructions that must be done in the right order. I can create a list of instructions to make things happen really well (e.g on a device or App). I can control and debug commands for a BeeBot or Screen Sprite to move it to a given position. I can predict where the BeeBot or Screen Sprite will finish after a list of commands take place. I can explain to others how to create a program (e.g on a laptop/PC). 	<ul style="list-style-type: none"> I can identify some common uses of technology outside of the school. I understand some basic rules about how to communicate safely with other people online. I can identify personal information that should be kept private. I am beginning to understand that not all the content on web sites is true (e.g spoof websites).
3	<ul style="list-style-type: none"> I can communicate my ideas well using the right software and formats. I understand that appropriate messages can be sent digitally (e.g email). I can use an appropriate search engine effectively (e.g Kidrex to search for London landmarks). I can use software to collect and present data in a way that is easy to understand. 	<ul style="list-style-type: none"> I understand that usually a problem can be broken up into smaller parts. I can create an algorithm to make something happen successfully. I can talk about it. I know when to test a program and when to debug it if it doesn't work. I understand that repeating instructions can save time and make a program simpler. I can explain how a simple program works 	<ul style="list-style-type: none"> I understand how to save and get back (retrieve) data on the school network and a hand held device such a tablet computer. I understand some simple rules about how to communicate safely with other people online. I understand that the World Wide Web contains lots of web pages about different subjects. I am beginning to understand that not

	<ul style="list-style-type: none"> I can create a presentation that is easy to understand and that is interesting. 	<p>(you may like to use the words input and output).</p> <ul style="list-style-type: none"> I can predict some of the things that may happen BEFORE I run my program. 	<ul style="list-style-type: none"> all information on web sites is true (e.g spoof websites). I can identify personal information that should be kept private and not shared online. I can recognise age appropriate symbols (e.g for games and films) to keep me safe.
4	<ul style="list-style-type: none"> I can use some of the more advanced features of applications (not just change font) to present my ideas and work clearly. I can combine more than one sources of information (e.g text, picture, video, animation, sound) in my work. I can evaluate my digital work to see if it has met the target or goal set for me. I can use an appropriate search engine effectively (e.g Kidrex) and judge if the information is useful to me. I can use software to collect, present and analyse data appropriately (e.g to make a chart). I can create a presentation to convey meaning and edit it if necessary (e.g on PowerPoint). 	<ul style="list-style-type: none"> I can recognise an error in a program and debug it so that it works. I understand that algorithms (step by step instructions) will help the user to solve problems. I recognise the need to test and retest whilst a program is being developed (using my prediction skills of what MIGHT work). I understand that a program is built up of sequences of instructions that are in order. I understand that many programs can follow more than one route (more than one thing can happen) (e.g IF THEN statements). I understand that repeating instructions can save time and make a program more efficient. 	<ul style="list-style-type: none"> I can identify some common uses of technology outside of school. I use technology safely and respectfully considering other people's feelings. I can identify personal information that should be kept private. I know how I can get help and support if I am worried when using a computer.

5	<ul style="list-style-type: none"> • I am aware of several different search engines and can explain some of their differences (e.g. Kidrex, Google, Bing) • I understand that my work can be saved in a range of places (the device itself, USB stick or 'in the cloud'). • I can combine more than one source of information (e.g. text, picture, video, animation, sound) in my work and can present this well to other people. • I can use software to collect, present and analyse data appropriately. I can explain what I have done to other people. • I can create and edit a presentation to provide information clearly and can include hyperlinks in it (eg using PowerPoint or Keynote). 	<ul style="list-style-type: none"> • I can use a range of sensing tools (e.g. within programs such as Scratch) to control what happens (e.g. based on the positions of the sprite, mouse position or inputs such as sound level). • I can recognise an error in a program, debug the program and explain the changes I have made. • I recognise the need to test and retest whilst a program is being developed. • I understand that repeating instructions can save time and make a program simpler (e.g. create a loop). • I understand that any system requires input devices (e.g. keyboard) and output devices (e.g. 3D printer). • I understand that computers can be linked together to create a network and that this can help me working with others online (collaboration). 	<ul style="list-style-type: none"> • I can name a range of useful ways in which technology can be used outside school. • I understand that the World Wide Web is one way in which the internet can be used. • I can find some websites that are both useful and reliable (based on the author of the site). • I can describe some of the risks of sharing too much information online. • I understand how I can report worries I have when using the internet.
6	<ul style="list-style-type: none"> • I can write programs to do what I want them to do. I can test and debug these. • I can use IF, THEN, ELSE commands to control what happens (eg in Scratch). • I can BROADCAST information to trigger another event (e.g. in Scratch). • I understand that variables can be used to make a game more realistic (e.g. a timer or a score). • I can create or use a simulation of a real (physical) system (such as a robot, spacecraft, machine or production line). • I can control a physical system using a range of commands (eg robot, 	<ul style="list-style-type: none"> • I am aware of several different search engines and can explain some of their features. • I understand that my work can be saved in a range of places (the device itself, USB stick or 'in the cloud') and can talk about this. • I can select, use and combine a variety of software effectively (including internet services) to meet the goals I have been set. • I can combine several sources of information (e.g. text, picture, video, animation, sound) in my work to meet the goal I have been set. • I can use software to collect, present, analyse 	<ul style="list-style-type: none"> • I understand that computer networks (including the internet) provide people with a range of services (including the World Wide Web). • I can name some of the ways that networks allow you to cooperate and collaborate with other people. • I can name some of the dangers of communicating and collaborating with others online. • I can describe why some World Wide Web pages are more useful and reliable than others. • I can describe some ways in which technology should be used safely,

<p>LEGO Wedo robot, 3D printer, CAD output device).</p> <ul style="list-style-type: none"> • I understand that any system requires input devices (e.g keyboards) and output devices (3D printer) and that the system processes the data. • I understand some of the ways that results are selected and put in order (ranked) when search for on the World Wide Web 	<p>and evaluate data appropriately (e.g using a spreadsheet and/or a database).</p> <ul style="list-style-type: none"> • I can create and edit a presentation to convey meaning and include nonlinear hyperlinks in it (e.g PowerPoint or Keynote). • I can present data and information in a way that is easy to understand. 	<ul style="list-style-type: none"> • respectfully and responsibly. I understand that it is illegal to download or copy material (without the written permission of the owner) and know about 'creative commons'. • I understand how I can report worries I have when using the internet. I know how to help other people if I need to.
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Due to the complexities, barriers and interruptions to learning, TMBSS will make judgements about which particular years curriculum is most suitable for each student. The aim of this is to effectively close the gap, provide targeted, purposeful learning to ensure a broad understanding of the subject.

As the students progress through KS1 and KS2, children will become increasingly confident about applying their digital skills, becoming increasingly efficient and effective communicators, collaborators, researchers, analysts, evaluators who show imagination and creativity in their use of technology in different aspects of their learning and life beyond school.

ASSESSMENT AND RECORDING

Units of work in Information Technology, should result in a saved file of the completed project, which should be saved in the Pupil's folder on the school network. The best examples of this work can be shared on the Service website.

Teachers assess children's work in ICT and Computing by making informal judgements as they observe them during lessons. On completion of a piece of work, the teacher marks it and comments as necessary. At the end of a unit of work they make a summary judgement about the work of each pupil in relation to the National Curriculum levels of attainment.

MARKING WORK

The purpose of marking is to move children forward in their learning.

Feedback and marking should be part of a process in which children need to have some involvement. Written or verbal comments made by the teacher should not only link back to the learning objectives, but should also give advice/suggestions/clues on how to "close the gap". It should set the next steps for learning on how to improve their work.

For further guidance and detail on marking, please refer to TMBSS Marking and Feedback Policy.