St Margaret Clitherow's Catholic Primary School

Computing Curriculum

Technology in the classroom is NOT the end goal. Enabling learning everywhere is the goal.

Andrew Barras

Y1	Computer science	Suggested learning opportunities/software/
	Follow Instructions to make something happen *Know these instructions are called an algorithm Commands – Control a floor robot using simple commands Create simple algorithms *recognise the order is important *debug an error in a simple algorithm	Unplugged activities first—following instruction to make a jam sandwich, make a cup of tea etc. Bee-Bots: Tinkering (having a play) https://www.barefootcomputing.org/resources/bee-bots-tinkering-activity Lesson: https://www.barefootcomputing.org/resources/bee-bots-1-2-3-programming

Y1	Information Technology	Suggested learning opportunities/software/
	Recognise a range of digital devices Recognise the basic parts of a computer e.g. keyboard, monitor etc. Log onto the school network with support Save and open files with support Open key applications independently Log in and out, saving own work on their account Create digital content, use technology purposefully to create, organise, store, manipulate and retrieve *digital art -using a basic range of tools including size of paint-brush changing font size etc. Combine media (with support) to present information e.g. text and images Search and download images from the internet with support *Cross curricular – Not in the KS1 Programme of Study* *Collect simple data and represent using a pictogram or chart*	iPads Chromebooks Google docs/slides Creating digital writing lesson plans: https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-writing Digital Art Website: https://www.autodraw.com/ Data Handling—online graphs/bar charts etc *https://www.j2e.com/jit5#pictogram* https://teachcomputing.org/curriculum/key-stage-1/data-and-information-grouping-data Teach Computing Lesson Plans KS1 Y1: https://teachcomputing.org/curriculum/key-stage-1

Y1	Digital Literacy	Suggested learning opportunities/software/
	Know who to tell if they see something online they do not like Understand the importance of a password and not sharing this with anyone.	https://projectevolve.co.uk/toolkit/resources/phase/early-years-7/

Y2	Computer Science	Suggested learning opportunities/software/ hardware/online learning
	Begin to say what decomposition is Use decomposition to decompose a story into its smaller parts Beginning to learn what abstraction is and learn that there are different levels of abstraction Can explain what an algorithm is and follow it (know that computers use algorithms to make predictions) Recognise that instructions need to be clear and concise Plan out an algorithm and evaluate its success Identify and correct errors – know this is called debugging	Unplugged activities first—following instruction to play a game (instructions becoming a little more difficult) Bee-Bots: https://teachcomputing.org/curriculum/key-stage-1/programming-a-robot-algorithms Scratch Jr: https://www.scratchjr.org/ Tinkering https://www.barefootcomputing.org/resources/scratchjr-tinkering-activity Using https://www.barefootcomputing.org/resources/scratchjr-knock-knock-joke-activity

Y2	Information Technology	Suggested learning opportunities/software/
	Understand a computer is made of different components Recognise that buttons cause different effects and that technology follows instructions Save and open files from and to a given folder Add an image to a document from a given folder/source Resize an image in a document, highlight text and use arrow keys	iPads Chromebooks Google docs/slides Teach Computing Lesson Plans KS1 Y2: https://teachcomputing.org/curriculum/key-stage-1 Digital Art website: https://www.autodraw.com/ Book Creator—bringing text, images sound into an online book: https://bookcreator.com/

Y2	Digital Literacy	Suggested learning opportunities/software/
	Understanding how to stay safe when talking to people online. Know not to share personal information (and know that personal information means name, birthday etc)	https://projectevolve.co.uk/toolkit/resources/phase/early-years-7/

Y3	Computer Science	Suggested learning opportunities/software/
	Understand the different components of a computer and what they do Beginning to learn what a server does (recognise that school computers are connected) Programming: Predicting, testing, identifying and explaining – Modify existing programs e.g. change their background, number of times things happen etc. Identify repeated steps in an algorithm Begin to incorporate loops to make code more efficient – recognise and use 'forever' loops. Use a systematic approach to debugging code Getting started with Crumble:	Crumble: https://redfernelectronics.co.uk/crumble-getting-started/ Crumble projects: Y3 to use beginner projects https://redfernelectronics.co.uk/projects/ https://www.scratchjr.org/ Teachcomputing lesson plans: https://teachcomputing.org/curriculum/key-stage-2

Y3	Information Technology	Suggested learning opportunities/software/
	Understand the purpose of emails Write emails including a subject, 'to' and 'from' Send an email with an attachment Reply to an email Save files with appropriate names Take photographs and video then use software to edit and enhance their video e.g. adding music, sounds, text and transitions. Using Data: Understand the vocabulary e.g. databases, field, record, data etc.	iPads Chromebooks Google Suite (including email) docs/slides etc. Creating digital content: https://bookcreator.com/ https://brush.ninja/ Animation lesson plans: https://teachcomputing.org/curriculum/key-stage-2/creating-media-animation

Y3	Digital Literacy	Suggested learning opportunities/software/
	Learning their responsibilities in a digital world e.g. treating others with respect and recognising when content or behaviour is unkind Begin to learn about what cyber bullying is Begin to learn that not all emails are genuine, how to recognise if an email might be fake and what to do about it. Recognise that online content belongs to the person who created it but that permission can be given for others to use it. Recognise that age ratings are there for a reason	https://projectevolve.co.uk/toolkit/resources/phase/early-years-7/ https://projectevolve.co.uk/toolkit/resources/phase/7-11/

Y4	Computer Science	Suggested learning opportunities/software/
	Learning about the purpose of routers – know that the internet is made up of computers and other digital devices connected together around the world Know that you use a web browser to access information on the internet Begin to understand that websites can be altered by exploring the code beneath the site. Coding a simple game – create a program using a range of events/inputs to control what happens Scratch Jr, Crumble etc. Use 'forever' loops Using abstraction (filtering out unnecessary information) and pattern recognition to modify code. Design a program for a purpose and then decompose into smaller parts, creating the algorithms for specific purposes. Use both plugged and unplugged activities to understand abstraction and debugging	Crumble: Getting started on Crumble https://redfernelectronics.co.uk/crumble-getting-started/ Crumble Projects: Y4 to use beginner and intermediate https://redfernelectronics.co.uk/projects/ Programming: Scratch Jr https://www.scratchjr.org/ Teach Computing Lesson Plans: https://teachcomputing.org/curriculum/key-stage-2 https://teachcomputing.org/curriculum/key-stage-2/programming-b-repetition-in-games Abstraction: https://www.barefootcomputing.org/resources/abstraction-unplugged-activity

Y4	Information Technology	Suggested learning opportunities/software/
	Understand software can be used collaboratively online to work as a team (Google Suite) Collect, organise and present information using a range of media. Design and create content for a specific purpose e.g. a poster, an animation, music etc. Edit the content to improve it – know how to crop, apply simple filters change font text and size etc. Data: Organise data in different ways Collect data and begin to identify where it could be inaccurate Choose the best way to present data.	iPads Chromebooks Google suite google docs/slides etc—beginning to use collaboratively Creating digital content: https://bookcreator.com/ GarageBand (on the iPads) TeachComputing: https://teachcomputing.org/curriculum/key-stage-2 https://teachcomputing.org/curriculum/key-stage-2/data-and-information-data-logging Barefoot

Y4	Digital Literacy	Suggested learning opportunities/software/
	Remember and use an individual password Begin to recognise what kinds of websites are trustworthy sources of information. Recognise appropriate behaviour when working collaboratively online	https://projectevolve.co.uk/toolkit/resources/phase/7-11/

Y5	Computer Science	Suggested learning opportunities/software/
	Learn that external devices can be programmed by a separate computer Iterate and develop their programming as they work Begin to use nested loops (loops within loops) Use 2 way selection programs and algorithms i.e. if, then, else etc Recognise variables and what they do in a program – create and use simple variables e.g. to keep score Amend code as they need Decompose both plugged and unplugged scenarios	Crumble: https://redfernelectronics.co.uk/crumble-getting-started/ Crumble Projects—Y5 to use Intermediate and advanced https://redfernelectronics.co.uk/projects/ Scratch Jr https://www.scratchjr.org/ Teach Computing Lesson Plans: https://teachcomputing.org/curriculum/key-stage-2 https://teachcomputing.org/curriculum/key-stage-2/programming-b-selection-in-quizzes

Y5	Information Technology	Suggested learning opportunities/software/
	Learn what a search engine is, that there are different kinds of search engine and that they may return different results Learn how to use these search engines effectively through the use of key words Begin to organise my work using folders and file names Use software to create music (GarageBand) Begin to consider the audience when creating any digital content and edit using success criteria they have created themselves. Data: Use a spreadsheet and database to collect and record data Present the data in an appropriate way Recognise some mistakes in data and suggest how it could be checked.	iPads Chromebooks Google suite google docs/slides etc—beginning to use collaboratively Creating digital content: GarageBand (on the iPads) Teachcomputing lesson plans: https://teachcomputing.org/curriculum/key-stage-2 https://teachcomputing.org/curriculum/key-stage-2/creating-media-video-editing Data: https://teachcomputing.org/curriculum/key-stage-2/data-and-information-flat-file-databases

Y5	Digital Literacy	Suggested learning opportunities/software/
	Know where to find copywrite free images and audio (and know why this is important) Critically evaluate websites for reliability of information and authenticity Demonstrate responsible use of online services and know a range of ways to report concerns (teacher, CEOP etc). Begin to understand the dangers of spending too much time online	https://projectevolve.co.uk/toolkit/resources/phase/7-11/

Y6	Computer Science	Suggested learning opportunities/software/
	Learn how bar codes, QR codes and RFID works – learn about some of the methods which cause data corruption Debug quickly and effectively to make a program more efficient Using and adapting nested loops. Design and program a physical computing system that uses sensors Recognise and use procedures (sub-routines) in programs Evaluate code, understanding its purpose and correct errors in algorithms.	Crumble: https://redfernelectronics.co.uk/crumble-getting-started/ Crumble Projects—Y6 to use Intermediate and advanced (please check we have the appropriate kit for your project) https://redfernelectronics.co.uk/projects/ Scratch Jr https://www.scratchjr.org/ https://teachcomputing.org/curriculum/key-stage-2/programming-a-variables-in-games

Y6	Information Technology	Suggested learning opportunities/software/
	Learn how 'Big Data' can be used to cause or solve a problem. Understand how bar codes, QR codes and RFID work I can organise files effectively using folders and file names Recognise common file types and extensions e.g. jpeg, png, doc etc. Select and combine a range of media to create original content e.g. create and edit videos adding multiple elements: music, voiceover, sound, text Data: Recognise a spreadsheet and what it is used for Collect data for a purpose and plan out a spreadsheet to present it effectively using relevant formulae. Produce graphs from data and information in a spreadsheet, chart or data-base.	iPads Chromebooks Google suite google docs/slides etc—beginning to use collaboratively Creating digital content: GarageBand (on the iPads) Teach Computing Lesson Plans: https://teachcomputing.org/curriculum/key-stage-2 https://teachcomputing.org/curriculum/key-stage-2/creating-media-web-page-creation Data: https://teachcomputing.org/curriculum/key-stage-2/data-and-information-spreadsheets

Y6	Digital Literacy	Suggested learning opportunities/software/
	Explain what makes a strong password Explain how algorithms are used to track online activities (advertising and information gathering) Know there are laws around the purchase of games, the production, sending and storage of images; what is written online and around online gambling.	https://projectevolve.co.uk/toolkit/resources/phase/7-11/ https://projectevolve.co.uk/toolkit/resources/phase/11-14/