Computing Progression of Skills and Knowledge

Programming IT Other Differentiation

St. Charles Borromeo
CATHOLIC PRIMARY SCHOOL

EYFS	IT		Creative outcomes	Problem solving – computational thinking
	Role play area with a range of technology, both functioning and model / broken devices, or a variety of electronic toys, such as remote controlled cars, walkie-talkies, push button toy keyboards, as part of continuous provision. Using digital cameras for pupils to photograph their own learning, Opportunities to tinker, or play, with a device, in order to discover how it functions. (UW) Input devices, including the keyboard and mouse, in order to develop the required fine motor skills. Usage could be linked to phonics sessions, such as through the use of drill and practice games, including Dance Mat Typing or the Animal Typing app in Year R or more creative outcomes. (Physical) Using ipads to play Using the interactive whiteboard to draw and play games. Using cd players to access stories and songs and microphones to record their voice. Developing understanding of what technology is and its use in the wider world and modelling how to use it e.g Google Earth, research and showing images linked to topic etc		Painting and graphics applications to develop pupils' keyboard and mouse skills, using a range of tablet based apps are also available, e.g Doodle Buddy and Joy doodle. Creative outcomes can be produced, which allows pupils to take ownership of their work . Using a tablet device to produce images. (EAD) Using sound buttons to record thoughts or short stories (Literacy) Light panel for creative and exploration.	Unplugged activities give children an opportunity to develop their understanding. **https://www.barefootcomputing.org/earlyyears** Verbal instruction –Give or follow instruction , e.g to make a sandwich with links made to the importance of using the correct vocabulary, along with speaking clearly and precisely. Giving instructions could also form part of sessions linked to physical development activities, such as determining rules for certain playground games. (CLL) Remote control cars – inputting instructions to make them move and problem solving. Bee bots (linked to literacy making a story of a journey or maths directional language) Algorithms and decomposition - Responding to instructions, ordering things, sequencing things, introducing storylines, working out different ways to do things, breaking problems down into steps and sequencing games Sorting -use sorting hoops or sorting trays for children to group items by colour, shape, size, use etc. Ordering and sequencing
Year 1	Computer Skills	Painting	Word Processing Skills	Programming
	•understand how to handle hardware safely and carefully Use a computer mouse or trackpad. • Switch on and shutdown a computer. • Launch an application and manipulate windows. • Name a file and start to learn to save • Drag objects • Identify and practise computer skills, e.g shutting down windows, Mouse skills resources – ICT games playground	• Paint with different colours. • Paint with different brushes. • Create shapes and fill areas. • Make changes to improve my work. • Add text to a painting. • Use a computer program to make a poster.	• Type on a keyboard finding letters. • give a file name. • Select text. • Formatting text -Edit text size, colour and font style. • use word processing tools new line, Undo, delete (backspace) and shift, spacebar and full stop • Recognise what an email address looks like. • Join in sending a class email. • Use the spacebar, backspace, enter, shift and arrow keys. • Print out a page from the internet.	• Create instructions using pictures. • Say why it is important to be precise when writing an algorithm. • Write instructions to program a person like a computer • Program a Bee-Bot to move. • Debug a Bee-Bot. • Program a sequence to make a Bee-Bot move.

	Internet Research skills	Computer Art	Keyboard / Presentation skills	Programming
Year 2				• Give and follow an algorithm to turn right or left. • Give and follow an algorithm to make half turns. • Give, follow and complete an algorithm. • Use recognised language in an algorithm. • Create, test and debug an algorithm • Create an algorithm and use the commands to change the backdrop and add sprites. What is a robot (how they help us)
	• Consolidating and enhancing existing skills • Search the Internet using one word. • Stay safe when using the Internet. • Search the Internet to find results suitable for children • Search for information safely online. • Follow links to another web page • Follow links safely online.	Revisit- • Paint with different colours. • Paint with different brushes. • Create shapes and fill areas. • Make changes to improve my work. • Add text / labels (with text insert box) to a painting. • Use a computer program to make a poster. • Create computer art. • Use a range of tools in a computer program to reproduce a style of art. • Make and edit shapes to create a piece of art. • Change the shade of a colour for effect. • Retrieve a file to edit in a computer program.	• Use basic computer skills. •Touch typing • naming, saving and retrieving files • Use folders for files • Organise ideas for a presentation (poster in Publisher) • Create a simple presentation with text. • Add and format an image. • Reorder slides and present a presentation. • Search and print. Some may • Create a presentation and record narration.	• Predict the outcomes of a set of instructions. • Use the repeat commands.

	Internet Research and Communication	Drawing and Desktop Publishing	Presentation Skills	Word Processing	Programming with Turtle Logo and Scratch
Year 3					
	• Consolidating and enhancing existing skills • Identify how word order affects search results. • Explain how searches return results. • Save and share webpages. • Identify the ways, and investigate how, we communicate online. • Explain how to stay safe when communicating online. • Explain why I need to be responsible online.	• Draw with different shapes and lines • Order and group objects • Manipulate shapes and lines • Recognise effective layout. • Combine text and images • Lay out objects effectively.	• Plan a branching story. • Create slide templates and organise slides with hyperlinks • Add theme, transitions and animation to a presentation. • Use action settings. • Insert audio and video • Evaluate slide layout and make improvements. • Create a presentation that is aimed at a specific audience.	• Use basic computer skills. • Change the case of text. • Align text. • Use bullets and numbering. • Use the <ctrl> key. • Insert and format text boxes. • Manipulate text, underline text, centre text, change font and size and save text to a folder.	• Create and debug an algorithm using the move, rotate and repeat commands. • Create and debug algorithms using penup and pendown. • Create and debug algorithms that draw regular polygons. • Create and debug algorithms that draw shapes. • Create and debug algorithms that draw regular polygons. • Create and debug algorithms to draw patterns.

							Give and follow an algorithm using the commands right 90 and left 90. • Use 90 degree and 45 degree turns. • Draw a square, rectangle and other regular shapes on screen, using commands.
	• Search for an image, copy and paste it into a document. • Use 'Save picture as' to save an image to the computer. • Copy and paste text into a document. • Bookmark a page into favourites.						

Year 4	**Information Technology**	**Animation**	**Programming (Turtle Logo)**	**Programming (Scratch)**
	• Consolidating and enhancing existing skills • Format images for a purpose. • Use formatting tools to create an effective layout. • Use the spell check tool. • Insert and format a table in a word processing document. • Change a page layout for a purpose. • purposeful presentation for a target audience e.g younger members of school • Choose images and download into a file. • Manipulate text, underline text, centre text, change font and size and save text to a folder. • What is a data base (on Publisher) • Research, review, collate and present information in a slideshow with transitions Touch typing	• Describe early forms of animation before computers and how computers have made a difference. • Create a short movie using still frame animation • Create a recorded animation involving a number of moving characters on a background. • Structure specific timing of animations using a time slider. • Use a camera on ipad to create a short stop-motion animation film. • Analyse and evaluate software.	• Create and debug an algorithm to create a procedure. • Create and debug an algorithm that uses setpos to draw shapes. • Create and debug an algorithm with different colours. • Create and debug an algorithm to fill areas with colour. • Create and debug an algorithm to produce text. • Create and debug an algorithm to draw arcs. • Use repeat instructions to draw regular shapes / patterns on screen, using commands. • Make turns specifying the degrees.	• Describe and use instructions to program a character • Program a character to grow and shrink. • Use instructions to make characters move at different speeds and distance. • Use a repeat instruction to make a sequence of instructions run more than once. • Create programs that play a recorded sound. • Create programs with a sequence of linked instructions. • Can compare quizzes and decompose a problem into smaller parts • Can write and debug a program. • Use sequence and selection. • Write and debug a program which uses sequence and repetition. • Work with variables. • Write and debug a program which uses sequence • Design, write and debug my own program by selecting appropriate visual block commands to create a sequence. • Make accurate predictions about the outcome of a program they have written.

Year 5	**Information Technology**	**Other**	**Programming**
	• Consolidating and enhancing existing skills • Format images for a purpose. • Use formatting tools to create an effective layout. • Change a page layout for a purpose. • create hyperlinks within a Powerpoint document. • purposeful presentation for a target audience e.g younger members of school	Musical composition – Garage band	• Design and program a character game. • Design an original character or backdrop for a game. • Add features or effects to enhance a game. • Create an original animated game with a specific goal. • Program costume changes for a sprite. • Add point-scoring and levels to game code.

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	• Decide which sections are appropriate to copy and paste from at least two web pages. • Download a document and save it to the computer. Compare the information on two tabbed webpages and look for bias. • What is Copyright – Understanding what can/ cannot be used without permission • Evaluate webpages. • Create 2D Floor plans (Links to art and Maths) • Manipulate text, underline text, centre text, change font and size and save text to a folder. Touch typing		• Combine sequences of instructions and procedures to turn devices on or off. • Understand input and output.
Year 6	**Information Technology**	**Other**	<mark>**Programming**</mark>
	• Consolidating and enhancing existing skills • Enter data and formulae into a spreadsheet. • Order and present data based on calculations. • Add, edit and calculate data. • Use a spreadsheet to solve problems. • Plan and calculate a spending budget. • Design a spreadsheet for a specific purpose.	Sound recording software to create talking books (Audacity) Manipulating digital images - collage <mark>**Film Making**</mark> • Use appropriate software and other tools effectively to write a film script. • Locate and check appropriate digital content, and provide accurate crediting of sources. • Use digital recording devices to film and import into video editing software. • Plan, conduct and import video interviews as part of a short film. • Use video editing software to create a short film. • Use video editing software to turn a film project into a finished movie and present it. • Present a film for a specific audience then adapt the same film for a different audience.	• Control when objects need to be visible. • Add interactive user features to a scene or story Kodu • Investigate and evaluate the features of programming software. • Program Kodu using 'When' and 'Do' instructions. • Use tools and add features to create an original landscape in Kodu. • Analyse and deconstruct code to work out its purpose. • Program a character to be controlled around a custom track to reach a goal. • Program a character to follow an automatic path. • Use ICT to measure sound or light or temperate using sensors. • Use input sensors to trigger events. • Check and refine a series of instructions. • Detect errors in a program and correct them.