English Martyrs Catholic Voluntary Academy

We grow and learn, with the gifts we have been given, following in the footsteps of Jesus.

WHOLE SCHOOL COMPUTING CURRICULUM PROGRESSION

Computing Intent: Following the national curriculum for Computing our intent is that all our children will :

Head

- Learn a wide range of fundamental skills, knowledge and understanding about computers and technology.
- Learn and have opportunities to discuss the benefits of ICT but are also aware of the risks.
- Be taught the principles of information and computation and how digital systems work

Heart

- Foster curiosity and thirst to find out about new technology and programs.
- Foster a love of learning new knowledge and skills which builds on their previous learning.
- To have a clear understanding of how to stay safe whilst being part of a digital world and have the courage and confidence to know what to do if they feel uncomfortable about something online.
- To be a digital citizen by showing our virtues of respect, patience, kindness and forgiveness.
- To show perseverance when they identify a problem and begin 'debugging'.

Hand

- To be able to participate effectively and safely in a digital world inside and outside of school.
- Have opportunities to be confident, creative and independent learners whilst developing their computing skills.
- Have opportunities to put their knowledge to use through programming.
- Will be well equipped with the knowledge to prepare them for now and a future in an environment which is shaped by technology.
- Understand that computing is essential to everyday life in relations to next steps of learning or future jobs.

EYFS – Our computing curriculum learning journey begins in the EYFS

Personal, Social and Emotional Development

• Show resilience and perseverance in the face of a challenge.

Physical Development

•Develop their small motor skills so that they can use a range of tools competently, safely and confidently.

•Know and talk about the different factors that support their overall health and wellbeing:

-sensible amounts of 'screen time'.

Expressive Arts and Design

• Explore, use and refine a variety of artistic effects to express their ideas and feelings.

ELGs

Personal, Social and Emotional Development - Managing Self

• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.

• Explain the reasons for rules, know right from wrong and try to behave accordingly.

Expressive Arts and Design – Creating with Materials

• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Advent Term units

YEAR	KEY KNOWLEDGE – KEY SKILLS	KEY VOCABULARY
EYFS	Topic- Technology (To access and use different technologies) • I can do the basics with technology. • I can explore a range of technology as part of continuous provision. • I can use computational thinking skills whilst taking part in continuous provision activities. (tinkering, creating, collaboration, persevering, logic, pattern, abstraction, algorithms and decomposition)	

Year 1	Topic: Computing systems and networks- Technology around us • I can identify technology. • I can identify a computer and its main parts. • I can use a mouse in different ways. • I can use a keyboard to type on a computer. • I can use a keyboard to edit text. • I can create rules for using technology responsibility.	Technology, computer, mouse, trackpad, keyboard, screen, double-click, typing
Year 2	Topic: Information technology around us • I can recognise the uses and features of information technology. • I can identify the uses of information technology in the school. • I can identify information technology beyond school. • I can explain how information technology helps us. • I can explain how to use information technology safely. • I can recognise that choices are made when using information technology.	Information technology (IT), computer, barcode, scanner/scan
Year 3	Topic: Connecting computers • I can explain how digital devices function. • I can identify input and output devices. • I can recognise how digital devices can change the way that we work. • I can explain how a computer network can be used to share information. • I can explore how digital devices can be connected. • I can recognise the physical components of a network.	Digital device, input, process, output. Program, digital, non-digital, connection, network, network switch, Server, wireless access point, network cables, network sockets

Year 4 Internet	<u>Topic: Internet</u> • I can describe how networks physically connect to other networks. • I can recognise how networked devices, make up the internet. • I can outline how websites can be shared via the World Wide Web (WWW). • I can describe how content can be added and accessed on the World Wide Web (WWW) • I can recognise how the content of the WWW is created by people. • I can evaluate the consequences of unreliable content.	Internet, network, router, network security Network switch, server, wireless access point (WAP), Website, web page, web address, routing, web browser World Wide Web, content, website, links, files, use, download, sharing, ownership, permission, information, sharing, accurate, honest, adverts
Year 5	Topic: Computing systems and networks – Sharing information • I can explain that computers can be connected together to form systems • I can recognise the role of computer systems in our lives • I can identify how to use a search engine • I can describe how search engines select results • I can explain how search results are ranked • I can recognise why the order of results is important, and to whom.	System, connection, digital, input, process, output, Search, search engine, refine, index, crawler, bot, ordering, ranking, links, algorithm, search engine, optimisation (SEO), searching, web crawler, content creator, selection,
Year 6	Topic: Computing systems and networks – Communication • I can explain the importance of internet addresses. • I can recognise how data is transferred across the internet. • I can explain how sharing information online can help people to work together • I can evaluate different ways of working together online. • I recognise how we communicate using technology • I can evaluate different methods of online communication	Communication, protocol, data, address, Internet Protocol (IP) address, Domain Name Server (DNS), Packet, header, data payload, Chat, explore, slide deck, Reuse, remix, collaboration, Communication, internet, public, private, one-way, two-way, one-to-one, one-to-many

Lent term units		
EYFS	Topic: Information technology • I can use a digital device to take a photograph. • I can start to upload photos to ClassDojo. • I can create using digital technology.	iPad, digital art, photograph, camera.
Year 1	Topic: Digital Photography • I know what devices can be used to take photographs • I can use a digital device to take a photograph • I can describe what makes a good photograph • I can decide how photographs can be improved • I can use tools to change an image. • I recognise that images can be changed.	Device, camera, photograph, capture, image, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject matter, field of view, format, compose, natural lighting, artificial lighting, flash, focus, background, foreground Editing, tools, colour, filter, images, Pixlr, format, framing, lighting, focus, filter, changed, real
Year 2	Topic: Digital Writing • I can use a computer to write. • I can add and remove text on a computer. • I can identify that the look of text can be changed on a computer. • I can make careful choices when changing text. • I can explain why I use the tools that I chose. • I can compare writing on a computer with writing on paper.	Word processor, keyboard, keys, letters, Microsoft Word, Google Docs, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, cursor, select, font, cursor, undo, font, backspace,

Year 3	Topic: Desktop publishing • I can recognise how text and images convey information. • I recognise that text and layout can be edited. • I can choose appropriate page settings. • I can add content to a desktop publishing publication. • I can consider how different layouts can suit different purposes. • I can consider the benefits of desktop publishing.	Text, images, advantages, disadvantages, communicate, font, font style, landscape, portrait, orientation, placeholder, template, desktop publishing, copy, paste, layout, purpose, benefits,
Year 4	Topic: Audio editing • I can identify that sound can be digitally recorded. • I can use a digital device to record sound. • I can explain that a digital recording is stored as a file. • I can explain that audio can be changed through editing. • I can show that different types of audio can be combined and played together. • I can evaluate editing choices that have been made.	Audio, record, playback, microphone, speaker, headphones, input, output, sound, start, pause, stop, podcast, save, file, edit, selection, open, mixing, time shift, export, MP3, evaluate, feedback.
Year 5	Topic: Video editing • I recognise video as moving pictures, which can include audio. • I can identity digital devices that can record video. • I can capture video using a digital device. • I can recognise the features of an effective video. • I can identify that video can be improved through reshooting and editing. • I can consider the impact of the choices made when making and sharing a video.	Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audio-visual), save, videographer, video techniques, pan, tilt, angle, lighting, setting, YouTuber, content, light, camera angle, colour, export, computer, Microsoft Movie Maker, split, trim/clip, edit, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, title screen, constructive feedback.
Year 6	Topic: Web page creation. • I can review an existing website and consider its structure.	Website, web page, browser, media, Hypertext Mark-up Language (HTML), logo, layout,

	• I can plan the features of a web page. • I can consider the ownership and use of images (copyright) • I can recognise the need to preview pages. • I can outline the need for a navigation path. • I can recognise the implications of linking to content owned by other people.	header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, subpage, hyperlink, embed, implication, external link.
<u>Pentecost Term Units</u>		
<u>YEAR</u>	<u>KEY KNOWLEDGE</u> <u>KEY SKILLS</u>	<u>KEY VOCABULARY</u>
EYFS	<u>Topic: Coding</u> • I can explain an algorithm. • I can explain sequencing. • I can give instructions to a programmable toy.	Algorithm, command, Bee-Bot, forward, backwards,
Year 1	Topic: Programming animations. • I can choose a command for a given purpose. • I can show that a series of commands can be joined together. • I can identify the effect of changing a value. • I can explain that each sprite has its own instructions. • I can design the parts of a project. • I can use an algorithm to create a program.	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, command, start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, appropriate, design, programming blocks, programs
Year 2	Topic: Robot Algorithms and introduction to quizzes. • I can describe a series of instructions as a sequence. • I can explain what happens when we change the order of instructions. • I can explain that a sequence of commands has a start. • I can explain that a sequence of commands has an outcome. • I can create a program using a given design. • I can change a given design. • I can create a program using my own design. • I can decide how my project can be improved.	Instruction, sequence, clear, unambiguous, algorithm, program order, commands prediction, Artwork, design, route, mat, Debugging, run, start, outcome, blocks, sprite, actions, modify, change, compare, features, evaluate,

Year 3	Topic: Events and actions • I can explain how a sprite moves in an existing project. • I can create a program to move a sprite in four directions. • I can adapt a program to a new context. • I can develop my program by adding features. • I can identify and fix bugs in a program. • I can design and create a maze-based challenge.	Motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, event, action, debugging, errors, code, test,
Year 4	Topic: Repetition • I can identify that accuracy in programming is important • I can create a program in a text-bases language. • I can explain what 'repeat' means. • I can modify a count-controlled loop to produce a given outcome. • I can decompose a program into parts. • I can create a program that uses count-controlled loops to produce a given outcome. • I can modify an infinite loop in a given program. • I can design a project that includes repetition.	Program, turtle, command, code, snippet, algorithm, design, debug, Logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure,
Year 5	Topic: Selection • I can control a simple circuit connected to a computer. • I can write a program that includes count-controlled loops. • I can explain how selection directs the flow of a program and that a loop can stop when a condition is met, e.g. number of times. • I can design a physical project that includes selections (link to DT) • I can create a program that includes selection. • I can explain how selection is used in computer programs. • I can relate that a conditional statement connects a condition to an outcome.	Selection, condition, true, false, count controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, condition, test, run, implement, setup, share, evaluate, constructive,
Year 6	Topic: sensing and variables. • I can define a variable as something that is changeable. • I can explain why a variable is used in a program. • I can choose how to improve a game by using variables. • I can design a project that builds on a given example. • I can use my design to create a project and evaluate it. • I can create a program to run on a controllable device. • I can explain that selection can control the flow of a program.	Variable, change, name, value, set, design, event, algorithm, code, artwork, task, project, debug, test, improve, evaluate, share, selection, process, sensing, compass, direction, navigation.

	• I can design a project that uses inputs and outputs on a controllable device.	