Computing Long Term Overview

Early Years Foundation Stage:

ELG: Personal, Social and Emotional Development: Children to show resilience and perseverance in the face of a challenge. Know and talk about different factors that support their overall health and wellbeing: sensible amounts of screen time.
ELG: Physical development: Children develop fine motor skills through activities like manipulating a mouse, keyboard, or touchscreen devices, which are important in using technology effectively.
ELG: Understanding the world: Children explore the world around them, including understanding how things work and using technology to help with learning. This goal includes developing skills in manipulating objects, using tools, and beginning to recognize the use of technology in everyday life.
ELG: Expressive arts and design: Children use various tools and materials to create and express themselves, including digital media, such as drawing apps or music software.

National Curriculum (overview of learning)

KS1 – 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. They should create and debug simple programs. Pupils should use logical reasoning to predict the behaviour of simple programs and use technology purposefully to create, organise, store, manipulate and retrieve digital content. Pupils should recognise common uses of information technology beyond school and 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

KS2 – 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. They should use sequence, selection, and repetition in programs; work with variables and various forms of input and output and use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Pupils should be taught to 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. Pupils should also be taught to use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Pupils should be taught to 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. Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Curriculum Intent	All pupils at St. Teresa's Catholic Primary school have the right to rich, deep learning experiences that balance all the aspects of computing. With technology playing such a significant role in society today, we believe 'computational thinking' is a skill that children must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use creativity to understand and change the world. At St. Teresa's, the core of computing is Computer Science in which pupils are introduced to a wide range of technology, including laptops, iPads and interactive whiteboards, allowing them to continually practice and improve the skills they learn. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology– at a level suitable for the future workplace and as active participants in a digital world. We teach a curriculum that enables children to become effective users of technology.
Implementation	The curriculum leader provides a long-term plan for each year group, which is part of the Purple Mash scheme of work. Teachers within each year group are provided with the progression of skills and detailed lesson plans to ensure a rich delivery of the computing curriculum. We also prioritise online safety and have adopted Purple Mash's 2Be Safe Online programme, which resources each of the 330 statements from UK Council for Internet Safety's (UKCIS) framework "Education for a Connected World" with lessons, activities, outcomes, supporting resources and professional development materials.
Measuring the Impact	Progress is measured through regular teacher assessments. Assessment takes place during every lesson and at the end of each unit. Pupil's work in each class and work done through Purple Mash is saved electronically in the children's personal document folders. Children are also able to save any work completed at home into their personal folder for their Class Teacher to see.

Yearly Overview of Units

Predominant Computing strand*
Computer Science
Information Technology
Digital Literacy
Most units will include aspects of all strands

Cycle A	EYFS	KS1	LKS2	UKS2
Autumn 1		Introduction to Purple Mash (1) Number of lessons 3 ***CST – Human dignity*** *When we log in and save our work, we show that our work is special and important. This reminds us of Dignity of the Human Person – every person, and everything they create, has value.*	Email (3) Number of lessons – 6 ***CST – Solidarity*** *When we send emails kindly and safely, we are connecting with others in a positive way. This shows Solidarity – remembering that we are all part of one human family and should look after each other.*	Quizzing (5) Number of lessons - 5 ***CST –Common Good*** *When we make quizzes to share with others, we're helping everyone learn and enjoy. This shows the Common Good – we use our skills to help the whole group, not just ourselves.*
	Mouse and Trackpad skills	Creative Computing (1) Number of lessons – 4 ***CST – Participation and Subsidiarity*** *When we make pictures, games, or puzzles and share them, we are taking part and helping others enjoy what we've made. This shows the value of Participation – everyone has something special to share.*	Unpacking Hardware and Software (4) Number of lessons – 4 ***CST – Stewardship (care for creation)*** *When we learn about technology and how to use it properly, we are showing Stewardship – looking after the tools God has given us and using them to help ourselves and others.*	Game Creator (5) Number of lessons - 5 ***CST – Solidarity*** *When we make and play games together, we share our ideas and respect each other's work. This shows Solidarity – we stand together and support one another.*
Autumn 2	Technology around us	Creating Pictures (2) *Number of lessons – 5* ***CST – Human dignity*** *When we make digital art in different styles, we are using our God-given talents to be creative. This reminds us of Dignity of the Human Person – every person's creativity is special and valuable.*	Route Planners (3) Number of lessons – 5 ***CST – Common good*** *When we write clear instructions for the turtle, everyone can follow and understand them. This is like the Common Good – working in ways that help everyone, not just ourselves.*	Graphing (6) Number of lessons- 6 ***CST - Rights and Responsibilities*** *When we make graphs, we need to show the information clearly and honestly. This shows Rights and Responsibilities – people have the right to good information, and we have the responsibility to present it fairly.*
	Keyboard skills	Spreadsheets (2) Number of lessons – 6 ***CST – Stewardship (Care for Creation)*** *When we use spreadsheets to keep track of numbers and resources, we are learning how to be careful and responsible with what we have. This*		
Spring 1	Hardware		Effective Searching (4) Number of lessons - 4 ***CST - Rights and Responsibilities*** *When we use search engines carefully and check if information is true, we are*	Spreadsheets (6) Number of lessons – 6 ***CST- Common Good*** *When we use spreadsheets to solve problems, we're not just helping*

		shows Stewardship – looking after the gifts God has given us.	*showing Rights and Responsibilities – everyone has the right to good information, and we have the responsibility to use it wisely.*	*ourselves – we're helping others by making information clear and useful. This shows the Common Good – using our skills to help everyone.*
	Drawing skills	Animated Stories (1) Number of lessons – 6 ***CST – Participation and Subsidiarity*** *When we make e-books and share them with the class, we are joining in and sharing our ideas. This shows Participation – everyone has something special to bring and we should all have the chance to share.*		
Spring 2	Safety and privacy	Coding (1) Number of lessons - 6 ***CST – Common Good*** *When we write code to make a program, we are creating something that others can enjoy or use. This is like the Common Good – working in ways that help everyone, not just ourselves.*	Coding (see Y3/4 breakdown below in Appendix 1) Number of lessons – 6 ***CST - Rights and Responsibilities*** *When we plan and make interactive scenes with flowcharts, we need to think carefully so they work well for others. This shows Rights and Responsibilities – we all have the right to use good programs, and the responsibility to make them work properly.*	Coding (see Y5/6 breakdown below in Appendix 2) Number of lessons – 6 ***CST – Common Good*** *When we code with functions, flowcharts, and user input, we need to make sure our programs work properly and are safe for others. This shows Rights and Responsibilities – people have the right to good programs, and we have the responsibility to make them safe and fair.*
	Robots			
Summer 1	Quizzes	Coding (2) Lessons – 6 ***CST – Rights and Responsibilities*** *When we make algorithms and programs, we need to be careful and responsible with the instructions we give, because others will rely on them. This shows Rights and Responsibilities – everyone has the right to good*	Presentations (3) Number of lessons – 5 ***CST - Participation and Subsidiarity*** *When we make presentations, we are sharing our ideas so that others can learn from us. This shows Participation – everyone has something important to share.*	Word Processing (5) Number of lessons - 6 ***CST – Human Dignity*** *When we make documents carefully with text, pictures and tables, we are showing that our work – and the people who read it – are important. This shows Dignity of the Human Person.*
	Sounds			

Summer 2	Using Purple Mash with individual log on Photography	*information, and we have the responsibility to use it wisely.*	Spreadsheets (3) Number of lessons – 6 ***CST - Rights and Responsibilities*** *When we use spreadsheets to collect and share data, we need to make sure it's clear and correct. This shows Rights and Responsibilities – people have the right to good information, and we have the responsibility to use it carefully*	3D Modelling (6) Number of lessons - 4 ***CST – Stewardship (Care for Creation)*** *When we design in 3D, we're using our skills and creativity to make things with care and purpose. This shows Stewardship – using our talents wisely to look after people and the world.*
Cycle B	**EYFS**	**KS1**	**LKS2**	**UKS2**
Autumn 1		Introduction to Purple Mash (1) Number of lessons – 3 ***CST – Human dignity*** *When we log in and save our work, we show that our work is special and important. This reminds us of Dignity of the Human Person – every person, and everything they create, has value.*	Animation (4) Number of lessons – 6 ***CST – Human dignity*** *When we make animations to tell a story, we are using our special creativity and ideas. This reminds us of Dignity of the Human Person – every person's imagination and work is important and valuable.*	Networks (6) Number of lessons – 4 ***CST - Common Good*** *The internet helps us connect and work together. When we use it safely and respectfully, we are working for the Common Good – making sure technology helps everyone, not just ourselves.*
	Mouse and Trackpad skills	Route Explorers (2) Number of lessons – 4 ***CST – Common Good*** *When we write instructions that are clear and easy to follow, we help everyone understand. This is like the Common Good in Catholic Social Teaching – working in ways that help everyone, not just ourselves.*		Databases (5) Number of lessons – 4 ***CST - Rights and Responsibilities*** *When we use databases, we need to make sure the information is clear and correct. This shows Rights and Responsibilities – people have the right to good information, and we have the responsibility to use it carefully.*
Autumn 2	Technology around us	The Internet (2) Number of lessons – 4 ***CST – Rights and Responsibilities*** *Everyone has the right to good, safe information, but we also have the responsibility to use the internet kindly*	Logo (4) Number of lessons – 4 ***CST – Common good*** *When we write clear instructions and create shapes that others can enjoy, we are helping everyone learn. This is like the*	Blogging (6) Number of lessons – 4 ***CST - Rights and Responsibilities*** *When we write blogs, we are sharing our voices. We need to use our words carefully and kindly. This shows Rights*

		and carefully. When we search online safely, we are living out Rights and Responsibilities.	*Common Good – working in ways that are good for everyone, not just ourselves.*	*and Responsibilities – we have the right to share, but the responsibility to do it safely and respectfully.*
	Keyboard skills	Data Explorers (1) Number of lessons – 6 ***CST – Rights and responsibilities*** *When we collect and share information in pictograms, we are helping everyone understand it. This shows Rights and Responsibilities – people have the right to clear information, and we have the responsibility to make sure it's correct.*	Branching Databases (3) Number of lessons – 4 ***CST – Rights and responsibilities*** *When we make branching databases, we need to ask fair questions and check our work is right. This shows Rights and Responsibilities – people have the right to good information, and we have the responsibility to make sure it's correct.*	Concept Maps (5) Number of lessons – 4 ***CST - Participation and subsidiarity*** *When we make concept maps together, we are sharing our ideas so everyone can learn. This shows Participation – everyone has something important to add.*
Spring 1	Hardware Drawing skills	Questioning (2) Number of lessons – 4 ***CST – Rights and responsibilities*** *Everyone has the right to access information that helps them make good decisions, but also the responsibility to use information ethically and truthfully*	Sound Stories (4) Number of lessons – 4 ***CST - Participation and subsidiarity*** *When we make audiobooks and share them with others, we are joining in and using our voices and ideas to help everyone enjoy the story. This shows Participation – everyone has something special to share.*	Coding (see Y5/6 breakdown below in Appendix 2) Number of lessons – 6 ***CST – Common Good*** *When we code with functions, flowcharts, and user input, we need to make sure our programs work properly and are safe for others. This shows Rights and Responsibilities – people have the right to good programs, and we have the responsibility to make them safe and fair.*
Spring 2	Safety and privacy Robots	Making Beats (1) Number of lessons – 4 ***CST – Human Dignity*** *Every person is created in the image of God, with their own unique gifts, talents, and ability to express themselves. Pupils upload or record sounds and use them to create tunes, they are*	Coding (see Y3/4 breakdown below in Appendix 1) Number of lessons – 6 ***CST - Common Good*** *When we code games, we're making something for everyone to enjoy and learn from. This shows the Common Good – we use our skills to help and share with others.*	Introduction to Python (6) Number of lessons – 4 ***CST – Stewardship (Care for Creation)*** *When we learn coding in Python, we are gaining powerful skills. Stewardship reminds us to use these skills wisely and carefully, to help people and make the world better.*

		recognising that their voice matters *and* their creativity has value.		
Summer 1	Quizzes	Creating and following instructions (1) Number of lessons – 3 ***CST – Common Good*** *When we write instructions carefully and follow them properly, we help everyone to learn and succeed. We think about the Common Good – what's best for everyone, not just ourselves.*	Composing beats (4) Number of lessons – 4 ***CST – Human Dignity*** *When we make music, we are using our special gifts to be creative and show our feelings. This reminds us of Dignity of the Human Person – every person's creativity is important and valuable.*	Spreadsheets (5) Number of lessons - 6 ***CST – Stewardship (Care for Creation)*** *When we use spreadsheets to solve problems and find answers, we are using our knowledge wisely to take care of the world and make good choices.*
	Sounds		Touch typing (3) Number of lessons – 4 ***CST – Human Dignity*** *When we learn to type carefully, we can share our ideas more clearly. This shows Dignity of the Human Person – our work and our voices are special and important.*	
Summer 2	Using Purple Mash with individual log on	Presenting Ideas (2) Number of lessons – 4 ***CST - Participation and Subsidiarity*** *When children make a presentation or quiz, we are taking part and helping others to learn too. This shows the Catholic Social Teaching value of Participation, where everyone is encouraged to join in and share their gifts.*	Introduction to Ai (4) Number of lessons – 4 ***CST - Stewardship (Care for Creation)*** *God gave us the gift of knowledge and creativity. When we learn about artificial intelligence, we remember Stewardship – we need to use new technologies wisely and carefully, to look after people and the world.*	Data Detectives (6) Number of lessons – 4 ***CST - Rights and Responsibilities*** *When we sort and share information using databases, we need to make sure it's correct and clear. This shows Rights and Responsibilities – people have the right to good information, and we have the responsibility to use it properly.*
	Photography	Technology Around Us (1) Number of lessons – 4 **CST – Steward (Care for Creation)** *God gave us a wonderful world. When we use computers, tablets, or other technology, we need to look after them and use them to help people and care for the world. This is called Stewardship.*		

Appendix 1: Coding LKS2

Year 3/4 (Coding Breakdown)

Coding lessons from both year 3 and 4 have been grouped in cycles of related concepts that support progression in a mixed year class.

YEAR 3 & 4 - CYCLE A

Title	Using Flowcharts	Using Timers	'if' statements	Coordinates	Code, Test and Debug	Design, Code, Test and Debug
Year and lesson number	Year 3 Lesson 1	Year 3 Lesson 2	Year 4 Lesson 2	Year 4 Lesson 3	Year 3 Lesson 4	Year 4 Lesson 1

YEAR 3 & 4 - CYCLE B

Title	Using Repeat	Repeat Until and 'if/else' Statements	Number Variables	Design and Make an Interactive scene	Design and Make an Interactive scene	Making a Playable game
Year and lesson number	Year 3 Lesson 3	Year 4 Lesson 4	Year 4 Lesson 5	Year 3 Lesson 5	Year 3 Lesson 6	Year 4 Lesson 6

Appendix 2: Coding break down UKS2

Year 5/6 (Coding Breakdown)

Coding lessons from both year 5 and 6 have been grouped in cycles of related concepts that support progression in a mixed year class.

YEAR 5 & 6 - CYCLE A						
Title	**Coding Efficiently**	**Simulating a physical system**	**Friction and Functions**	**Introducing Strings**	**Text Variable and Concatenation**	**User Input**
Year and lesson number	**Year 5 Lesson 1**	**Year 5 Lesson 2**	**Year 5 Lesson 5**	**Year 5 Lesson 5**	**Year 5 Lesson 6**	**Year 6 Lesson 5**

YEAR 5 & 6 - CYCLE B						
Title	**Designing and writing a more complex program**	**Designing and writing a more complex program**	**Decomposition and Abstraction**	**Using Functions**	**Flowcharts and control simulations**	**Text Adventure**
Year and lesson number	**Year 6 Lesson 1**	**Year 6 Lesson 2**	**Year 5 Lesson 3**	**Year 6 Lesson 3**	**Year 6 Lesson 4**	**Year 6 Lesson 6**