EYFS

EYFS Knowledge:

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help subject leaders to understand how the skills taught across EYFS feed into national curriculum subjects.

This document demonstrates which statements from the 2020 Development Matters are prerequisite skills for computing within the national curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for computing.

The most relevant statements for computing are taken from the following areas of learning:

- Personal, Social and Emotional Development
- Physical Development
- Understanding the World
- Expressive Arts and Design

Computing			
Three and Four-Year-Olds	Personal, Social and Emotional Development		• Remember rules without needing an adult to remind them.
	Physical Development		• Match their developing physical skills to tasks and activities in the setting.
	Understanding the World		• Explore how things work.
Reception	Personal, Social and Emotional Development		• Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: - sensible amounts of 'screen time'.
	Physical Development		• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
	Expressive Arts and Design		• Explore, use and refine a variety of artistic effects to express their ideas and feelings.
ELG	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.

St Patrick's Catholic Voluntary Academy
Computing Content Subject Organiser and End Points:

KS1	*Cycle*	What is a Computer?	Multimedia A	Programming & Algorithms A	Data Handling	Multimedia B	Programming & Algorithms B
Year 1 FS2/ Yea	***Even Year*** *2024, 2026, 2028*	**Teach Computing Curriculum Y1** **Tech around us** To identify technology. To identify a computer and its main parts. To use a mouse in different ways. To use a keyboard to type on a computer. To use the keyboard to edit text. To create rules for using technology responsibly.	**Teach Computing Curriculum Y1** **Digital Painting** To describe what different freehand tools do. To use the shape tool and the line tools. To make careful choices when painting a digital picture. To explain why I chose the tools I used. To use a computer on my own to paint a picture. To compare painting a picture on a computer and on paper.	**Foundation Stage Toolkit** **Basic Bee- Bot work** To explore technology. To use technology to explore and access digital content. To answer basic questions about information displayed in images e.g. more or less. To operate a digital device with support to fulfil a task. To create simple digital content, e.g. record audio, digital art. To follow simple instructions to control a digital device. To choose media to convey information, e.g. image for a poster.	**Teach Computing Curriculum Y1** **Grouping Data** To label objects. To identify that objects can be counted. To describe objects in different ways. To count objects with the same properties. To compare groups of objects. To answer questions about groups of objects.	**Teach Computing Curriculum Y1** **Digital Writing** To use a computer to write. To add and remove text on a computer. To identify that the look of text can be changed on a computer. To make careful choices when changing text. To explain why I used the tools that I chose. To compare typing on a computer to writing on paper.	**Sheffield Scheme of Work** **KS1 Unit 5A** **Simple Drawing Programs** To understand and explain what an algorithm is. To use basic commands in Logo (fd, bk, lt, rt, cs, pu, pd) to create sequences. To create sequences of precise instructions that a human or computer can follow to complete a task. To create and debug simple programs. To use logical reasoning to predict the behaviour of simple programmes.
	Odd Year *2023, 2025, 2027*	**Teach Computing Curriculum Y1** **Tech around us** To identify technology. To identify a computer and its main parts. To use a mouse in different ways. To use a keyboard to type on a computer. To use the keyboard to edit text. To create rules for using technology responsibly.	**Teach Computing Curriculum Y1** **Digital Painting** To describe what different freehand tools do. To use the shape tool and the line tools. To make careful choices when painting a digital picture. To explain why I chose the tools I used. To use a computer on my own to paint a picture. To compare painting a picture on a computer and on paper.	**Sheffield Scheme of Work Y1** **Simple Programs** **Basic Bee- Bot work** To explore technology. To use technology to explore and access digital content. To answer basic questions about information displayed in images e.g. more or less To operate a digital device with support to fulfil a task. To create simple digital content, e.g. record audio, digital art. To follow simple instructions to control a digital device. To choose media to convey information, e.g. image for a poster.	**Teach Computing Curriculum Y1** **Grouping Data** To label objects. To identify that objects can be counted. To describe objects in different ways. To count objects with the same properties. To compare groups of objects. To answer questions about groups of objects.	**Teach Computing Curriculum Y1** **Digital Writing** To use a computer to write. To add and remove text on a computer. To identify that the look of text can be changed on a computer. To make careful choices when changing text. To explain why I used the tools that I chose. To compare typing on a computer to writing on paper.	**Sheffield Scheme of Work** **KS1 Unit 5B** **Simple Drawing Programs** To understand and explain what an algorithm is. To use basic commands in Logo (fd, bk, lt, rt, cs, pu, pd) to create sequences. To create sequences of precise instructions that a human or computer can follow to complete a task. To create and debug simple programs. To use logical reasoning to predict the behaviour of simple programmes.

St Patrick's Catholic Voluntary Academy
Computing Content Subject Organiser and End Points:

KS1	*Cycle*	What is a Computer?	Multimedia A	Programming & Algorithms A	Data Handling	Multimedia B	Programming & Algorithms B
Year 1/2 / Year 2	***Even Year** 2024, 2026, 2028*	**Teach Computing Curriculum Y2** **Information Technology (IT) around us** To recognise the uses and features of information technology. To identify the uses of information technology in the school. To identify information technology beyond school. To explain how information technology helps us. To explain how to use information technology safely. To recognise that choices are made when using information technology.	**Teach Computing Curriculum Y2** **Digital Photography** To use a digital device to take a photograph. To make choices when taking a photograph. To describe what makes a good photograph. To decide how photographs can be improved. To use tools to change an image. To recognise that photos can be changed.	**Sheffield Scheme of Work Unit 4A** **Simple Programs: Bee-Bot** To explain what a given command will do. To act out a given word. To combine 'forwards' and 'backwards' commands to make a sequence. To combine four direction commands to make a sequence. To plan a simple programme. To find more than one solution to a problem.	**Teach Computing Curriculum Y1** **Pictograms** To label objects. To identify that objects can be counted. To describe objects in different ways. To count objects with the same properties. To compare groups of objects. To answer questions about groups of objects.	**Teach Computing Curriculum Y2** **Making Music** To say how music can make us feel. To identify that there are patterns in music. To experiment with sound using a computer. To use a computer to create a musical pattern. To create music for a purpose. To review and refine our computer work.	**Teach Computing Curriculum Y1** **Introduction to Animations** (Scratch Jr) To choose a command for a given purpose. To show that a series of commands can be joined together. To identify the effect of changing a value. To explain that each sprite has its own instructions. To design the parts of a project. To use my algorithm to create a program.
	***Odd Year** 2023, 2025, 2027*	**Teach Computing Curriculum Y2** **Information Technology (IT) around us/ Key Skills** To recognise the uses and features of information technology. To identify the uses of information technology in the school. To identify information technology beyond school. To explain how information technology helps us. To explain how to use information technology safely. To recognise that choices are made when using information technology.	**Teach Computing Curriculum Y2** **Digital Photography** To use a digital device to take a photograph. To make choices when taking a photograph. To describe what makes a good photograph. To decide how photographs can be improved. To use tools to change an image. To recognise that photos can be changed.	**Sheffield Scheme of Work Unit 4B** **Simple Programs: Bee-Bot** To explain what a given command will do. To act out a given word. To combine 'forwards' and 'backwards' commands to make a sequence. To combine four direction commands to make a sequence. To plan a simple programme. To find more than one solution to a problem.	**Teach Computing Curriculum Y2** **Pictograms** To recognise that we can count and compare objects using tally charts. To recognise that objects can be represented as pictures. To create a pictogram. To select objects by attribute and make comparisons. To recognise that people can be described by attributes. To explain that we can present information using a computer.	**Teach Computing Curriculum Y2** **Making Music** To say how music can make us feel. To identify that there are patterns in music. To experiment with sound using a computer. To use a computer to create a musical pattern. To create music for a purpose. To review and refine our computer work.	**Teach Computing Curriculum Y2** **Introduction to Quizzes** (Scratch Jr + plus basics from Y1 unit) To explain that a sequence of commands has a start. To explain that a sequence of commands has an outcome. To create a program using a given design. To change a given design. To create a program using my own design. To decide how my project can be improved.

St Patrick's Catholic Voluntary Academy
Computing Content Subject Organiser and End Points:

KS2	*Cycle*	What is a Computer?	Multimedia A	Programming & Algorithms A	Data Handling	Multimedia B	Programming & Algorithms B
Year 3/ 4	***Even Year*** *2024, 2026, 2028*	**Teach Computing Curriculum Y3** **What is a Computer?** To explain how digital devices function. To identify input and output devices. To recognise how digital devices can change the way we work. To explain how a computer network can be used to share information. To explore how digital devices can be connected. To recognise the physical components of a network.	**Teach Computing Curriculum Y3** **Stop Frame Animation** To explain that animation is a sequence of drawings or photographs. To relate animated movement with a sequence of images. To plan an animation. To identify the need to work consistently and carefully. To review and improve an animation. To evaluate the impact of adding other media to an animation.	**Sheffield Scheme of Work LKS2 Unit 4A** **Sequence & Events** To explore a new programming environment. To identify that commands have an outcome. To explain that a program has a start. To recognise that a sequence of commands can have an order. To change the appearance of my project. To create a project from a task description.	**Teach Computing Curriculum Y3** **Branching Databases** To create questions with yes/no answers. To identify the attributes needed to collect data about an object. To create a branching database. To explain why it is helpful for a database to be well structured. To plan the structure of a branching database. To independently create an identification tool.	**Teach Computing Curriculum Y3** **Desktop Publishing** To recognise how text and images convey information. To recognise that text and layout can be edited. To choose appropriate page settings. To add content to a desktop publishing publication. To consider how different layouts can suit different purposes. To consider the benefits of desktop publishing.	**Sheffield Scheme of Work LKS2 Unit 5A** **Repetition in Scratch** To develop the use of count-controlled loops in a different programming environment. Ton explain that in programming there are infinite loops and count-controlled loops. To develop a design that includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition. To create a project that includes repetition.
Year 3- Year 4	***Odd Year*** *2023, 2025, 2027*	**Teach Computing Curriculum Y3** **Connecting Computers/ Key Skills** To explain how digital devices function. To identify input and output devices. To recognise how digital devices can change the way we work. To explain how a computer network can be used to share information. To explore how digital devices can be connected. To recognise the physical components of a network.	**Teach Computing Curriculum Y3** **Stop Frame Animation** To explain that animation is a sequence of drawings or photographs. To relate animated movement with a sequence of images. To plan an animation. To identify the need to work consistently and carefully. To review and improve an animation. To evaluate the impact of adding other media to an animation.	**Sheffield Scheme of Work LKS2 Unit 4B** **Sequence & Events** To explore a new programming environment. To identify that commands have an outcome. To explain that a program has a start. To recognise that a sequence of commands can have an order. To change the appearance of my project. To create a project from a task description.	**Teach Computing Curriculum Y3** **Branching Databases** To create questions with yes/no answers. To identify the attributes needed to collect data about an object. To create a branching database. To explain why it is helpful for a database to be well structured. To plan the structure of a branching database. To independently create an identification tool.	**Teach Computing Curriculum Y3** **Desktop Publishing** To recognise how text and images convey information. To recognise that text and layout can be edited. To choose appropriate page settings. To add content to a desktop publishing publication. To consider how different layouts can suit different purposes. To consider the benefits of desktop publishing.	**Sheffield Scheme of Work LKS2 Unit 5B** **Repetition in Scratch** To develop the use of count-controlled loops in a different programming environment. Ton explain that in programming there are infinite loops and count-controlled loops. To develop a design that includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition. To create a project that includes repetition.

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Computing Content Subject Organiser and End Points:

KS2	*Cycle*	What is a Computer?	Multimedia A	Programming & Algorithms A	Data Handling	Multimedia B	Programming & Algorithms B
Year 4/5	***Even Year*** *2024, 2026, 2028*	**Teach Computing Curriculum Y4** **The Internet** To describe how networks physically connect to other networks. To recognise how networked devices, make up the internet. To outline how websites can be shared via the World Wide Web (WWW). To describe how content can be added and accessed on the World Wide Web (WWW). To recognise how the content of the WWW is created by people. To evaluate the consequences of unreliable content.	**Teach Computing Curriculum Y4** **Audio Production** To identify that sound can be recorded. To identify that an input device is needed to record sound. To identify that output devices are needed to play audio. To recognise that audio can be stored on a computer. To recognise and explain that audio can be edited. To recognise that sound can be represented visually as a waveform. To recognise the different parts of creating a podcast project. To recognise that audio can be layered so that multiple sounds can played at the same time. To consider the results of editing choices made. To apply audio editing skills independently. To combine audio to enhance my podcast project. To evaluate the effective use of audio.	**Sheffield Scheme of Work** **LKS2 Unit 4A** **Sequence & Events +** **Sheffield Scheme of Work** **LKS2 Unit 5A** **Repetition in Scratch** To explain how a sprite moves in an existing project. To create a program to move a sprite in four directions. To adapt a program to a new context. To develop my program by adding features. To identify and fix bugs in a program. To design and create a maze-based challenge. To develop the use of count-controlled loops in a different programming environment. To explain that in programming there are infinite loops and count-controlled loops. To develop a design that includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition. To create a project that includes repetition.	**Teach Computing Curriculum Y4** **Data Logging** To explain that data gathered over time can be used to answer questions. To use a digital device to collect data automatically. To explain that a data logger collects 'data points' from sensors over time. To recognise how a computer can help us analyse data. To identify the data needed to answer questions. To use data from sensors to answer questions.	**Teach Computing Curriculum Y4** **Photo Editing** To explain that the composition of digital images can be changed. To explain that the colours can be changed in digital images. To explain how cloning can be used in photo editing. To explain that images can be combined. To combine images for a purpose. To evaluate how changes can improve an image.	**Sheffield Scheme of Work** **LKS2 Unit 5.4A** **Simple Selection in Scratch** To write a program that includes count-controlled loops. To explain that a loop can stop when a condition is met. To explain that a loop can be used to repeatedly check whether a condition has been met. To design a program that includes selection. To create a program to keep score.
	Odd Year *2023, 2025, 2027*	**Teach Computing Curriculum Y3** **Connecting Computers** **+ TCC Y4** **The Internet** To explain how digital devices function. To identify input and output devices. To recognise how digital devices can change the way we work. To explain how a computer network can be used to share information. To explore how digital devices can be connected. To recognise the physical components of a network. To describe how networks physically connect to other networks. To recognise how networked devices, make up the internet. To outline how websites can be shared via the World Wide Web (WWW). To describe how content can be added and accessed on the World Wide Web (WWW). To recognise how the content of the WWW is created by people. To evaluate the consequences of unreliable content.	**Teach Computing Curriculum Y4** **Audio Production** To identify that sound can be recorded. To explain that audio recordings can be edited. To recognise the different parts of creating a podcast project. To apply audio editing skills independently. To combine audio to enhance my podcast project. To evaluate the effective use of audio.	**Sheffield Scheme of Work Unit 4.B** **Decomposition** **& Infinite Loops** To use the pen extension within a program To create a program to write a letter To decompose (split up) a project into smaller parts To develop a design that includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition. To create a project that includes repetition	**Teach Computing Curriculum Y4** **Data Logging** To explain that data gathered over time can be used to answer questions. To use a digital device to collect data automatically. To explain that a data logger collects 'data points' from sensors over time. To recognise how a computer can help us analyse data. To identify the data needed to answer questions. To use data from sensors to answer questions.	**Teach Computing Curriculum Y4** **Photo Editing** To explain that the composition of digital images can be changed. To explain that the colours can be changed in digital images. To explain how cloning can be used in photo editing. To explain that images can be combined. To combine images for a purpose. To evaluate how changes can improve an image.	**Sheffield Scheme of Work** **LKS2 Unit 5.4B** **Simple Selection in Scratch** To write a program that includes count-controlled loops. To explain that a loop can stop when a condition is met. To explain that a loop can be used to repeatedly check whether a condition has been met. To design a program that includes selection. To create a program to keep score.

St Patrick's Catholic Voluntary Academy
Computing Content Subject Organiser and End Points:

KS2	*Cycle*	What is a Computer?	Multimedia A	Programming & Algorithms A	Data Handling	Multimedia B	Programming & Algorithms B
Year 5/6	***Even Year** 2024, 2026, 2028*	**Teach Computing Curriculum Y4/ Y5** **The Internet/** **Sharing Information** To describe how networks physically connect to other networks. To recognise how networked devices, make up the internet. To outline how websites can be shared via the World Wide Web (WWW). To describe how content can be added and accessed on the World Wide Web (WWW). To recognise how the content of the WWW is created by people. To evaluate the consequences of unreliable content.	**Teach Computing Curriculum Y5** **Introduction to Vector Drawing** To identify that drawing tools can be used to produce different outcomes. To create a vector drawing by combining shapes. To use tools to achieve a desired effect. To recognise that vector drawings, consist of layers. To group objects to make them easier to work with. To apply what I have learned about vector drawings.	**Sheffield Scheme of Work** **LKS2 Unit 4A** **Sequence & Events +** **Sheffield Scheme of Work** **LKS2 Unit 5A** **Repetition in Scratch** To explain how a sprite moves in an existing project. To create a program to move a sprite in four directions. To adapt a program to a new context. To develop my program by adding features. To identify and fix bugs in a program. To design and create a maze-based challenge. To develop the use of count-controlled loops in a different programming environment. To explain that in programming there are infinite loops and count-controlled loops. To develop a design that includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition.	**Teach Computing Curriculum Y5** **Flat File Databases** To use a form to record information. To compare paper and computer-based databases. To outline how you can answer questions by grouping and then sorting data. To explain that tools can be used to select specific data. To explain that computer programs can be used to compare data visually. To use a real-world database to answer questions.	**Teach Computing Curriculum Y5** **Video Editing** To explain what makes a video effective. To use a digital device to record video. To capture a video using a range of techniques. To create a storyboard. To identify that video can be improved through reshooting and editing. To consider the impact of the choices made when making and sharing videos.	**Sheffield Scheme of Work** **UKS2 Unit 5A** **Simulating Physical Systems** To control a simple circuit connected to a computer. To write a program that includes count-controlled loops. To explain that a loop can stop when a condition is met. To explain that a loop can be used to repeatedly check whether a condition has been met. To design a physical project that includes selection. To create a program that controls a physical computing project.
	***Odd Year** 2023, 2025, 2027*	**Teach Computing Curriculum Y5** **Systems and Searching** To explain that computers can be connected together to form systems. To recognise the role of computer systems in our lives. To identify how to use a search engine. To describe how search engines, select results. To explain how search results are ranked. To recognise why the order of results is important, and to whom.	**Teach Computing Curriculum Y5/ Y6** **Introduction to Vector Drawing/** **3D Modelling** To identify that drawing tools can be used to produce different outcomes. To create a vector drawing by combining shapes. To use tools to achieve a desired effect. To recognise that vector drawings, consist of layers. To group objects to make them easier to work with. To apply what I have learned about vector drawings. To recognise you can work in three dimensions on a computer. To identify that digital 3D objects can be modified. To recognise that objects can be combined in a 3D model. To create a 3D model for a given purpose. To plan my own 3D model. To create my own digital 3D model.	**Sheffield Scheme of Work** **LKS2 Unit 4B** **Repetition in Scratch** To add an infinite music extension loop to a program To develop the use of count-controlled loops in a different programming environment. To explain that in programming there are infinite loops and count-controlled loops. To develop a design that includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition.	**Teach Computing Curriculum Y6** **Spreadsheets** To create a data set in a spreadsheet. To build a data set in a spreadsheet. To explain that formulas can be used to produce calculated data. To apply formulas to data. To create a spreadsheet to plan an event. To choose suitable ways to present data.	**Teach Computing Curriculum Y5** **Video Editing** To explain what makes a video effective. To use a digital device to record video. To capture a video using a range of techniques. To create a storyboard. To identify that video can be improved through reshooting and editing. To consider the impact of the choices made when making and sharing videos.	**Sheffield Scheme of Work UKS2** **Unit 5B** **Selection & Variables** To define a 'variable' as something that is changeable. To explain why a variable is used in a program. To choose how to improve a game by using variables. To design a project that builds on a given example. To use my design to create a project. To evaluate my project.

St Patrick's Catholic Voluntary Academy
Computing Content Subject Organiser and End Points:
Assessment framework- Computing

	Working at ARE
By the end of FS2/ Y1, children can:	**What is a Computer?** • explain technology as something that helps us. • locate examples of technology in the classroom and the world around us. • name and explain the main parts of a computer. • switch on and log into a computer. • click and drag to make objects on a screen. • use a mouse with control (click, drag, open programs and create a picture). • say what a keyboard is for. • log onto the computer independently • type my name on a computer. • save my work to a file. • open my work from a file. • use the arrow keys to move the cursor. • use the key board to edit text, including to delete letters. • identify rules to keep us safe and healthy when we are using technology in and beyond the home. • give examples of some of these rules.
	Multimedia: Painting: • describe what different freehand tools do, as I make marks on a screen, explaining which tools I used. • draw lines on a screen and explain which tools I used. • use the paint tools to draw a picture. • use the shape tools and line tools to make marks effectively. • choose appropriate shapes and colours. • explain what I chose the tools I used, understanding that different paint tools do different jobs. • choose appropriate paint tools and colours to recreate the work of an artist. • explain which tools are helpful and why. • make dots of colour on the page. • change the colour and brush sizes. • use a computer on my own to paint a picture. • use dots of colour to create a picture in the style of an artist on my own. • explain that pictures can be made in lots of different ways.
	Multimedia: Writing: • use a computer to write using a word processor. • open a word processor. • identify, recognise and use the keys on a keyboard. • find the keys on a keyboard. • add and remove text on a computer. • enter text into a computer. • use letter, number and Space keys. • use Backspace to remove text. • identify that the look of text can be changed on a computer. • type capital letter. • manipulate how text is presented using different tools and functions within the text package. • explain what the keys that I have already learnt about do. • identify the toolbar and use bold, italic and underline. • make careful choices when changing text, including selecting a word by double-clicking or selecting all of the text by clicking and dragging. • change the font. • say which tool, I used to change the text, explaining why. • explain what I used the tools that I chose to change the text. • decide if my changes have improved my writing.

- use the 'Undo' to remove changes I no longer wish to make.
- make changes to text on a computer.
- explain the differences between typing on a computer and writing on paper.
- compare typing on a computer to writing on paper and say why I prefer typing or writing.

Programming & Algorithms (A):

- explore technology.
- repeat an action with technology to trigger a specific outcome.
- recognise the success or failure of an action.
- follow simple instructions to control a digital device.
- recognise that we control computers.
- input a short sequence of instructions to control a device.
- operate a digital device with support to fulfil a task.
- follow simple instructions to control a digital device.
- be aware that some online content is inappropriate.
- be aware that information can be public or private.
- keep myself safe online and help those around me to also stay safe.
- know to tell an appropriate adult if they see something on the computer that upsets them.

Programming & Algorithms (B):

- understand and explain what an algorithm is.
- to understand how making changes to instructions will change the outcome.
- use basic commands in Logo (fd, bk, lt, rt, cs, pu, pd) to create sequences.
- input a sequence of instructions to achieve a planned and desired outcome.
- create sequences of precise instructions that a human or computer can follow to complete a task.
- create and debug simple programs.
- use logical reasoning to predict the behaviour of simple programmes.
- evaluate my work and make adaptations where necessary.

Data Handling:

- describe objects using labels.
- can match objects to groups.
- Identify the label for a group of objects.
- count objects, group objects and count groups of objects.
- describe objects in different ways.
- describe the property of an object.
- find objects with similar properties.
- count how many objects share a property.
- compare groups of objects, choosing how to group objects.
- describe groups of objects.
- record how many objects are in a group.
- explain how data is presented in a pictogram.
- understand that data can be represented in different ways e.g. pictograms, branching databases and so on.
- decide how to group objects to answer a question.
- record and share what I have found.

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Computing Content Subject Organiser and End Points:

	Working at ARE
By the end of Y2, children can:	**What is a Computer?** • explore Information Technology (IT) around us. • understand that some IT can be used in more than one way. • identify examples of computers and describe some uses of computers. • recognise the uses and features of information technology, identifying that a computer is part of IT. • identify the uses of Information Technology in the school, as well as beyond school. • sort school IT by what it is used for. • sort IT by where it is found. • talk about some uses of information technology. • explain how information technology can help us. • recognise common types of technology. • demonstrate and explain how IT devices, work together. • say why we use IT. • list different uses of information technology. • explore and explain how we can use information technology safely. • say how rules keep me safe. • recognise the choices, I make when using IT. • keep myself safe and use IT safely for different types of activities. • recognise that choices are made when using information technology, explaining the need to use IT in different ways.
	Multimedia: Digital Photography: • use a digital device to take a photograph. • recognise what devices can be used to take photographs, making choices about which device would be most appropriate to use. • talk about how to take a photograph. • explain what I did to capture a digital photo. • make choices when taking a photograph. • explain the process of taking a good photograph. • take photos in both landscape and portrait format. • describe what makes a good photograph. • identify what is 'wrong' with a photograph. • discuss how to take a 'good' photograph. • make improvements to a photograph by retaking it. • decide how photographs can be improved through exploring the effect that a light has on a photo. • experiment with different light sources. • explain why a picture may be unclear. • begin to recognise that images can be changed, explaining why I think the image has been altered and how. • use tools to change an image. • use a tool to achieved a desired effect, explaining my choices. • recognise that photos can be changed and or altered. • apply a range of photography skills to capture a photo. • recognise which photos have been changed. • identify photos which are real and photos which have been changed.
	Multimedia: Making Music: • explain what I do and do not like about a piece of music. • identify that there are patterns in music. • create a rhythm pattern. • play an instrument following a rhythm pattern. • explain that music is created and played by humans. • experiment with sound (including pitch) using a computer. • connect images with sounds. • relate an idea to a piece of music. • use a computer to create a musical pattern. • identify that music is a sequence of notes. • explain how my music can be played in different ways and can refine my musical pattern on a computer.

- create music for a purpose, e.g. creating a rhythm which represents an animal that I have chosen.
- manipulate with purpose and intent the sound created using a computer.
- create an animal's rhythm on a computer.
- add a sequence of notes to my rhythm.
- review and refine my computer work.
- explain how I have changed my work.
- listen to music and describe how it makes me feel.

Programming & Algorithms (A): Moving a robot

- predict the outcome of a command on a device.
- match a command to an outcome.
- run a command on a device.
- follow an instruction.
- recall words that can be acted out.
- give directions.
- compare forward and backward movements.
- start a sequence from the same place.
- predict the outcome of a sequence involving 'forwards' and 'backwards' commands.
- compare left and right turns.
- experiment with 'turn' and 'move' commands to move a robot.
- predict the outcome of a sequence involving up to four commands.
- explain what my program should do.
- choose the order of commands in a sequence.
- use systematic working to debug my program.
- identify several possible solutions to debug a program.

Programming & Algorithms (B): Animation / quizzes

- choose a command for a given purpose.
- find the commands and use the commands to move a sprite.
- compare different programming tools.
- make a prediction about what if, and change the value to confirm what happens when I change a value.
- use more than one block by joining them together, to show that a series of commands can be joined together.
- use a start block in a program.
- run my program to check the series of commands I have used.
- identify the effect of changing a value.
- find blocks that have numbers.
- change the value and say what happens when I change a value.
- show that a project can include more than one sprite.
- delete a sprite.
- add blocks to each of my sprites.
- explain that each sprite has its own instructions.
- decide how each sprite will move.
- create an algorithm for each sprite.
- use my algorithm to create a program.
- add programming blocks based on my algorithms.
- use my algorithm to create a program and I can test the programs that I have created.
- identify the start of a sequence.
- identify that a program needs to be started.
- show how to run my program.
- predict the outcome of a sequence of commands.
- match two sequences with the same outcome.
- change the outcome of a sequence of commands.
- work out the actions of a sprite in an algorithm.
- build the sequences of blocks I need to match my design.
- choose backgrounds for the design.
- choose characters for the design.

St Patrick's Catholic Voluntary Academy
Computing Content Subject Organiser and End Points:

	• create a program based on the new design. • choose the images for my own design. • compare my project to my design. • debug my program.
	Data Handling: Pictograms: • describe objects using labels. • can match objects to groups. • Identify the label for a group of objects. • count objects, group objects and count groups of objects. • describe objects in different ways. • describe the property of an object. • find objects with similar properties. • count how many objects share a property. • compare groups of objects, choosing how to group objects. • describe groups of objects. • choose how to group objects to answer a question according to my own chosen criterion. • record how many objects are in a group. • decide how to group objects to answer a question. • record and share what I have found. • recognise that we can count and compare objects using tall charts by recording data in a tally chart. • organise data in a tally chart. • represent a tally count as a total and can compare totals in a tally chart. • recognise that objects can be represented as pictures. • enter data onto a computer. • use a computer to view data in a different format. • use pictograms to answer simple questions about objects. • use a tally chart to create a pictogram and explain what the pictogram shows. • tally objects using a common attribute and can create a pictogram to arrange objects by an attribute. • select objects by attribute and make comparisons. • answer 'more than'/ 'less than' and 'most/ least' questions about an attribute. • recognise that people can be described by attributes and I can choose a suitable attribute to compare people. • collect the data that I need, understanding that data can be presented in different ways and use this data to create a pictogram, drawing conclusions from it. • explain that we can present information using a computer. • use a computer program to present information in different ways. • share what I have found out using a computer. • give examples of why information should not be shared.

	Working at ARE
By the end of Y4, children can:	**What is a Computer?** • explain that digital devices accept inputs. • explain that digital devices produce outputs. • follow a process. • classify input and output devices. • describe a simple process. • design a digital device. • explain how I use digital devices for different activities. • recognise different connections. • explain how messages are passed through multiple connections. • discuss why we need a network switch. • recognise that a computer network is made up of a number of devices.

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Computing Content Subject Organiser and End Points:

	• demonstrate how information can be passed between devices. • explain the role of a switch, server, and wireless access point in a network. • identify how devices in a network are connected together. • identify networked devices around me. • identify the benefits of computer networks. • recognise similarities and differences between using digital devices and using non-digital tools.
	Multimedia: Animation • draw a sequence of pictures. • create an effective flip book—style animation and explain how it works. • predict what an animation will look like. • explain why little changes are needed for each frame. • create an effective stop-frame animation. • break down a story into settings, characters and events. • create a storyboard. • use onion skinning to help me make small changes between frames. • review a sequence of frames to check my work. • evaluate the quality of my animation. • Evaluate the quality of another learner's animation • explain ways to make my animation better. • improve my animation based on feedback. • add other media to my animation. • evaluate the final film.
	Multimedia: Desktop publishing • explain the difference between text and images. • recognise that text and images can communicate messages clearly. • identify the advantages and disadvantages of using text and images. • change font style, size, and colours for a given purpose. • edit text (resizing, colour, font types). • explain that text can be changed to communicate more clearly. • explain what 'page orientation' means. • recognise placeholders and say why they are important. • create a template for a particular purpose. • choose the best locations for my content. • paste text and images to create a magazine cover including word art. • make changes to content after I've added it. • identify different layouts. • match a layout to a purpose. • identify the uses of desktop publishing in the real world. • say why desktop publishing might be helpful. • compare work made on desktop publishing to work created by hand.
	Programming & Algorithms (A): sequence and events • identify the objects in a Scratch project (sprites, backdrops). • explain that objects in Scratch have attributes (linked to). • recognise that commands in Scratch are represented as blocks. • identify that each sprite is controlled by the commands I choose. • choose a word which describes an on-screen action for my plan. • create a program following a design. • start a program in different ways. • create a sequence of connected commands. • explain that the objects in my project will respond exactly to the code. • explain what a sequence is. • combine sound commands. • order notes into a sequence.

	• build a sequence of commands. • decide the actions for each sprite in a program. • make design choices for my artwork. • identify and name the objects I will need for a project. • relate a task description to a design. • implement my algorithm as code. **Programming & Algorithms (B): repetition** • list an everyday task as a set of instructions including repetition. • predict the outcome of a snippet of code. • modify a snippet of code to create a given outcome. • modify loops to produce a given outcome. • choose when to use a count-controlled and an infinite loop. • recognise that some programming languages enable more than one process to be run at once. • choose which action will be repeated for each object. • explain what the outcome of the repeated action should be. • evaluate the effectiveness of the repeated sequences used in my program. • identify which parts of a loop can be changed. • explain the effect of my changes. • re-use existing code snippets on new sprites. • evaluate the use of repetition in a project. • select key parts of a given project to use in my own design. • build a program that follows my design. • evaluate the steps I followed when building my project.
	Data Handling: branching databases • investigate questions with yes/no answers. • make up a yes/no question about a collection of objects. • create two groups of objects separated by one attribute. • select an attribute to separate objects into groups. • create a group of objects within an existing group. • arrange objects into a tree structure. • select objects to arrange in a branching database. • group objects using my own yes/no questions. • test my branching database to see if it works. • create yes/no questions using given attributes. • explain that questions need to be ordered carefully to split objects into similarly sized groups. • independently create questions to use in a branching database. • create questions that will enable objects to be uniquely identified. • create a physical version of a branching database. • create a branching database that reflects my plan. • work with a partner to test my identification tool. • suggest real-world uses for branching databases. • Compare two branching database structures

	Working at ARE
By the end of Y4/5, children can:	**What is a Computer?** • describe the internet as a network of networks. • demonstrate how information is shared across the internet. • discuss why a network needs protecting. • describe networked devices and how they connect. • explain that the internet is used to provide many services. • recognise that the World Wide Web contains websites and web pages. • explain the types of media that can be shared on the WWW.

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Computing Content Subject Organiser and End Points:

- describe where websites are stored when uploaded to the WWW.
- describe how to access websites on the WWW.
- explain what media can be found on websites.
- recognise that I can add content to the WWW.
- explain that internet services can be used to create content online.
- explain that websites and their content are created by people.
- suggest who owns the content on websites.
- explain that there are rules to protect content.
- understand and explain that not everything on the World Wide Web is true.
- explain why I need to think carefully before I share or reshare content.

Multimedia: Audio editing

- identify the input and output devices used to record and play sound.
- use a computer to record audio.
- explain that the person who records the sound can say who is allowed to use it.
- re-record my voice to improve my recording.
- discuss what sounds can be added to a podcast.
- explain how sounds can be combined to make a podcast more engaging.
- save my project so the different parts remain editable.
- plan appropriate content for a podcast.
- record content following my plan.
- review the quality of my recordings.
- improve my voice recordings.
- open my project to continue working on it.
- explain the difference between saving a project and exporting an audio file.
- listen to an audio recording to identify its strengths.
- suggest improvements to an audio recording.
- choose appropriate edits to improve my podcast.

Multimedia: photo editing

- improve an image by rotating it.
- explain why I might crop an image.
- use photo editing software to crop an image.
- experiment with different colour effects, explaining why I have chosen certain colour effects.
- add to the composition of an image by cloning.
- identify how a photo edit can be improved.
- remove parts of an image using cloning.
- experiment with tools to select and copy part of an image.
- use a range of tools to copy between images.
- explain why photos might be edited.
- describe the image I want to create.
- choose suitable images for my project.
- create a project that is a combination of other images.
- review images against a given criteria.
- use feedback to guide making changes.
- combine text and my image to complete the project.

Programming & Algorithms (A): repetition / sequence and events

- list an everyday task as a set of instructions including repetition.
- predict the outcome of a snippet of code.
- modify a snippet of code to create a given outcome.
- modify loops to produce a given outcome.
- choose when to use a count-controlled and an infinite loop.
- choose which action will be repeated for each object.
- explain what the outcome of the repeated action should be.
- evaluate the effectiveness of the repeated sequences used in my program.

- identify which parts of a loop can be changed.
- explain the effect of my changes.
- re-use existing code snippets on new sprites.
- evaluate the use of repetition in a project.
- select key parts of a given project to use in my own design.
- develop my own design explaining what my project will do.
- refine the algorithm in my design.
- build a program that follows my design.
- evaluate the steps I followed when building my project.
- identify the objects in a Scratch project (sprites, backdrops).
- explain that objects in Scratch have attributes (linked to).
- explain that the objects in my project will respond exactly to the code.
- recognise that commands in Scratch are represented as blocks.
- identify that each sprite is controlled by the commands I choose.
- choose a word which describes an on-screen action for my plan.
- create a program following a design.
- start a program in different ways.
- create a sequence of connected commands.
- explain what a sequence is.
- combine sound commands.
- order notes into a sequence.
- build a sequence of commands.
- decide the actions for each sprite in a program.
- make design choices for my artwork.
- identify and name the objects I will need for a project.
- relate a task description to a design.
- implement my algorithm as code.
- recognise that some programming languages enable more than one process to be run at once.

Programming & Algorithms (B): selection in scratch

- explain what an infinite loop does.
- use a count-controlled loop to control outputs.
- design sequences that use count-controlled loops.
- explain that a condition is either true or false.
- design a conditional loop.
- program a game to respond to an input.
- explain that a condition being met can start an action.
- identify a condition and an action in my project.
- use selection (an 'if…then…' statement) to direct the flow of a program.
- identify a real-world example of a condition starting an action.
- describe what my project will do.
- create a detailed outline of my project.
- write an algorithm that will keep score in my game.
- use selection to produce an intended outcome.
- test and debug my project.

Decomposition & Infinite Loops

- use the pen extension within a program
- create a program to write a letter
- decompose (split up) a project into smaller parts
- suggest reasons for the decomposition of a project
- create a design that includes two or more loops which run at the same time
- explain what an infinite loop, count controlled loop and conditional loop does
- modify an infinite loop in a given program
- design and create a project that includes repetition

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Computing Content Subject Organiser and End Points:

	Data Handling: Data logging • choose a data set to answer a given question. • suggest questions that can be answered using a given data set. • identify data that can be gathered over time. • explain what data can be collected using sensors. • use data from a sensor to answer a given question. • identify that data from sensors can be recorded. • recognise that a data logger collects data at given points. • identify the intervals used to collect data. • talk about the data that I have captured. • sort data to find information. • explain that there are different ways to view data. • propose a question that can be answered using logged data. • plan how to collect data using a data logger. • use a data logger to collect data. • interpret data that has been collected using a data logger. • draw conclusions from the data that I have collected. • explain the benefits of using a data logger.

	Working at ARE
By the end of Y5/Y6, children can:	**What is a Computer?** • be able to explain that computers can be connected together to form systems. • explain that systems are built using a number of parts. • describe the input, process, and output of a digital system. • explain that computer systems communicate with other devices. • discuss why a network needs protecting. • recognise the role of computer systems in our lives. • identify tasks that are managed by computer systems. • identify the human elements of a computer system. • explain the benefits of a given computer system. • identify how to use a search engine and refine my web search. • make use of a web search to find specific information. • describe how search engines select results. • explain why we need tools to find things online. • recognise the role of web crawlers in creating an index. • relate a search term to the search engine's index. • explain how search results are ranked. • order a list by rank. • explain that a search engine follows rules to rank results. • suggest who owns the content on websites. • recognise why the order of results is important, and to whom. • describe some of the ways that search results can be influenced. • recognise some of the limitations of search engines. • explain how search engines make money.
	Multimedia: Vector Drawing / 3D model • recognise that vector drawings are made using shapes. • experiment with the shape and line tools. • discuss how vector drawings are different from paper-based drawings. • identify the shapes used to make a vector drawing. • explain that each element added to a vector drawing is an object. • move, resize, and rotate objects I have duplicated. • use the zoom tool to help me add detail to my drawings. • modify objects to create a new image. • identify that each added object creates a new layer in the drawing.

- change the order of layers in a vector drawing.
- use layering to create an image.
- copy part of a drawing by duplicating several objects.
- recognise when I need to group and ungroup objects.
- reuse a group of objects to further develop my vector drawing.
- create a vector drawing for a specific purpose.
- reflect on the skills I have used and why I have used them.
- compare vector drawings to freehand paint drawings.

- add 3D shapes to a project.
- view 3D shapes from different perspectives.
- move 3D shapes relative to one another.
- resize an object in three dimensions.
- lift/lower 3D objects.
- recolour a 3D object.
- rotate objects in three dimensions.
- duplicate 3D objects.
- group 3D objects.
- accurately size 3D objects.
- combine a number of 3D objects.
- analyse a 3D model.
- choose objects to use in a 3D model.
- combine objects in a design.
- construct a 3D model based on a design.
- show that placeholders can create holes in 3D objects.
- explain how my 3D model could be improved.
- modify my 3D model to improve it.

Multimedia: Video editing

- explain that video is a visual media format.
- identify features of videos and compare features in different videos.
- identify and find features on a digital video recording device.
- experiment with different camera angles.
- make use of a microphone.
- suggest and capture video using a range of filming techniques.
- review how effective my video is.
- outline the scenes of my video.
- create and save video content.
- store, retrieve, and export my recording to a computer.
- explain how to improve a video by reshooting and editing.
- select the correct tools to make edits to my video.
- recognise that my choices when making a video will impact the quality of the final outcome.
- make edits to my video and improve the final outcome.
- evaluate my video and share my opinions.

Programming & Algorithms (A): sequence events and repetition

- list an everyday task as a set of instructions including repetition.
- predict the outcome of a snippet of code.
- modify a snippet of code to create a given outcome.
- modify loops to produce a given outcome.
- recognise that some programming languages enable more than one process to be run at once.
- choose which action will be repeated for each object.
- explain what the outcome of the repeated action should be.
- evaluate the effectiveness of the repeated sequences used in my program.
- identify which parts of a loop can be changed.
- choose when to use a count-controlled and infinite loop.
- explain the effect of my changes.

	• evaluate the use of repetition in a project. • select key parts of a given project to use in my own design. • develop my own design explaining what my project will do. • refine the algorithm in my design. • build a program that follows my design. • evaluate the steps I followed when building my project. • identify the objects in a Scratch project (sprites, backdrops). • explain that objects in Scratch have attributes (linked to). • recognise that commands in Scratch are represented as blocks. • identify that each sprite is controlled by the commands I choose. • choose a word which describes an on-screen action for my plan. • create a program following a design. • start a program in different ways. • create a sequence of connected commands. • explain that the objects in my project will respond exactly to the code. • explain what a sequence is. • combine sound commands. • order notes into a sequence. • build a sequence of commands. • decide the actions for each sprite in a program. • re-use existing code snippets on new sprites. • make design choices for my artwork. • identify and name the objects I will need for a project. • implement my algorithm as code. **Programming & Algorithms (B): selection in physical computing / selection and variables** • create a simple circuit and connect it to a microcontroller. • program a microcontroller to make an LED switch on. • explain what an infinite loop does. • use a count-controlled loop to control outputs. • design sequences that use count-controlled loops. • explain that a condition is either true or false. • design a conditional loop. • program a microcontroller to respond to an input. • identify and explain that a condition being met can start an action. • describe what my project will do. • create a detailed drawing of my project. • write an algorithm that describes what my model will do. • use selection (an 'if… then… statement) to produce an intended outcome. • test and debug my project. • identify examples of information that is variable. • explain that the way variable changes can be defined. • identify that variables can hold numbers or letters. • identify a program variable as a placeholder in memory for a single value. • explain that a variable has a name and a value. • recognise that the value of a variable can be changed. • decide where in a program to change a variable. • make use of an event in a program to set a variable. • choose the artwork for my project. • create algorithms for my project. • explain my design choices. • create the artwork for my project. • recognise that the value of a variable can be used by a program. • choose a name that identifies the role of a variable. • test the code that I have written.

	• identify ways that my game could be improved. • use variables to extend my game. • share my game with others.
	Data Handling: Databases • create a database using cards. • explain how information can be recorded. • order, sort, and group my data cards. • explain what a field and a record is in a database. • navigate a flat-file database to compare different views of information. • choose which field and value to sort data by to answer a given question. • explain that data can be grouped using chosen values. • group information using a database. • combine grouping and sorting to answer specific questions. • outline how 'AND' and 'OR' can be used to refine data selection. • choose multiple criteria to answer a given question. • select an appropriate chart to visually compare data. • refine a chart by selecting a particular filter. • explain the benefits of using a computer to create charts. • ask questions that will need more than one field to answer. • present my findings to a group. **Data Handling: Spreadsheets** • collect data and suggest how to structure my data. • enter data into a spreadsheet, explaining what an item of data is. • choose and apply an appropriate format for a cell. • construct a formula in a spreadsheet. • identify that changing inputs changes outputs. • calculate data using different operations. • create a formula which includes a range of cells. • apply a formula to multiple cells by duplicating it. • apply a formula to calculate the data I need to answer questions. • use a spreadsheet to answer questions. • explain why data should be organised. • produce and use a chart to show the answer to a question. • suggest when to use a table or chart.