St Joseph's ICT Long-term Plan

<u>**Year 1 Milestones and Opportunities**</u>

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.
- Write and test simple programs.
- Use logical reasoning to predict the behaviour of simple programs.
- Organise, store, manipulate and retrieve data in a range of digital formats.

Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
To connect (Online safety) To code *Purple Mash* *Scratch* *Hour of code* To communicate To collect	To follow the school's safer internet rules. Specify the number of steps to travel, direction and turn (using beebots) to use directional language to control Beebot. Add text strings, show and hide objects and change features. Capture an image and transfer to another device or application. Select sounds, their duration and volume. Use programmes to create and record sound. Explore programmes to create different sounds and patterns. Create conditions for actions. To explore the When Key and When Swiped commands	To understand that some information is personal and should not be shared online. Specify user inputs. To understand that pressing a control will have an effect – press go (Beebots) clicks to make things move. Specify the nature of events. To design a scene for a program, use code blocks to make the characters move automatically when the green Play button is clicked and to add an additional character who moves when clicked. Set pen colour, shape and size. To use programme Beebots to draw shapes. To use the Stop button to make characters stop when the background is clicked.	Understand online risks. Use a range of applications to communicate ideas, work and messages. *-To enter text using a keyboard.* *-To use the spacebar, backspace and return key.*	Understand online risks. Use a range of applications to communicate ideas, work and messages. *-To record a sound and play it back.* *-To create an image, add a title and text.* *Purple Mash, Microsoft Word.*	To join in sending a class email. Use simple databases. *-To contribute to adding information to a simple database and answer simple questions.*	To use a range of different technology and talk about its use. Use simple databases. *-To enter information into a template to make a graph or a pictogram.* *Purple Mash, J2data, Twinkle*

Year 2 Milestones and Opportunities

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.
- Write and test simple programs.
- Use logical reasoning to predict the behaviour of simple programs.
- Organise, store, manipulate and retrieve data in a range of digital formats.

Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
To connect (Online safety) **To code** *Purple Mash* *Scratch* *Hour of code* **To communicate** **To collect**	Understand online risks. Specify the number of steps to travel, direction and turn. Add text strings, show and hide objects and change features. Select sounds, their duration and volume. Purple Mash Specify user inputs. Specify the nature of events. Create conditions for actions.	Understand online risks. Set pen colour, shape and size. Select sounds, their duration and volume. Scratch Specify the nature of events. Scratch Create conditions for actions. Scratch	To use the internet safely for learning and communicating with others. (Social media) Use a range of applications to communicate ideas, work and messages. *-To develop speed when typing and use a simple document with increasing control.* *-To word process work, changing the font, font size, colour.*	To send individual email in a controlled environment and reply. Use a range of applications to communicate ideas, work and messages. *To cut,copy and paste an image, text box, word art and clipart onto a document.* *-To format text to refine and improve, e.g. underline, italics, bold.* *Purple Mash, Microsoft Word.*	To recognise that there are other people on the internet and this affects how they should use it. Use simple databases. *-To enter information into a template to make a graph and pictogram.* *-To present data in different ways.*	To use of a wide range of technology and can describe how it works in a variety of different contexts. Use simple databases. *-To use a branching database.* *Answer questions.* *Purple Mash, J2data, Twinkle*

Year 3 Milestones and Opportunities

Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
To connect (Online safety) **To code** *Purple Mash* *Scratch* *Hour of code* **To communicate** **To collect**	Understand that comments made online that are hurtful or offensive are the same as bullying Using Scratch: -Use specified coordinates to control movement -Set the appearance -Create and edit sounds -Specify condition to trigger events	Understand how online services work Examples: - Understand that we can search for information in a variety of ways and that we influence the outputs of searches depending on our input Using Scratch: -Repeat events. -Create conditions for actions by sensing proximity or by waiting for a user input (such as responses to questions).	- Know different ways of reporting unacceptable content and contact online To use some advanced features of applications. -*Open and save a file to a suitable folder* -*Use suitable file names when saving work.* -*Type using all fingers*	- Understand when to share personal information and when not to To use some advanced features of applications. -*Use a search engine to find information using keyword searches* -*Type using all fingers*	- Understand that games and films have age ratings, and what that means Devise and construct databases in areas across the curriculum. -*Explore a record database to find out information* -*Know that there is a difference between data and information* -*Use filters in a database to find out specific information*	Understand the term 'copyright. - Understand that people can give permission for others to use their content Devise and construct databases in areas across the curriculum. -*Understand the benefits of using a computer to create charts and databases* -*Understand that search engines store information in databases* -*Design a questionnaire and collect a range of data on a theme*

Year 4 Milestones and Opportunities

Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
To connect (Online safety) **To code** *Purple Mash* *Scratch* *Hour of code* **To communicate** **To collect**	Understand risks related to online bullying Use IF THEN conditions to control events or objects Control the shades of pen. Use variables and use the functions to control variables. Use the functions define, set, change, show and hide to control the variables. Use specified coordinates to control movement	Understand risks related to online bullying Create and edit sounds - control when they are heard, their duration, volume and rests Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to a question). Use reporter operators () + () () - () () * () () / () to perform calculations.	Contribute to blogs. To use some advanced features of applications *-Use right click and left click and double click appropriately on a mouse* *-Use a search engine to find specific information*	Contribute to blogs. To use some advanced features of applications *-Know how to copy text and images into another document.*	Understand how online services work Devise and construct databases in areas across the curriculum. *-Enter data into a database and test* *-Draw conclusions from information stored in a database, table or chart.* *-Present data in a number of different ways to convey information*	Understand how online services work Devise and construct databases in areas across the curriculum. *-Understand that the internet is made up of computers from all around the world connected together* *-Understand that school computers are connected together in a network* *-Understand that we use a web browser to access information stored on the internet*

Year 5 Milestones and Opportunities

Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
To connect (Online safety) **To code** *Purple Mash* *Scratch* *Hour of code* **To communicate** **To collect**	Understand the effect of online comments and show responsibility and sensitivity when online. Using scratch: Specify types of rotation giving the number of degrees Change the position of things between screen layers (send to back, bring to front) Set events to trigger events Use IF THEN ELSE conditions to control events or objects	Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. Using scratch: Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. Use the Boolean operators i.e. $() < ()$ $() = ()$ $() > ()$ $()and()$ $()or()$ $Not()$ to define conditions. Use lists to create a set of variables.	- Know where to find copyright free images and audio, and why this is important Choose the most suitable application for purpose. *-Use the keyboard confidently to type at a suitable pace.* *-Use common keyboard shortcuts* *-Organise files effectively using folders*	- Demonstrate responsible use of online services and technologies, and know a range of ways to report concerns Choose the most suitable application for purpose. *-Use the keyboard confidently to type at a suitable pace.* *-Use common keyboard shortcuts* *-Organise files effectively using folders*	- Evaluate websites for reliability of information and authenticity Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. *-Appreciate that different programs work with different types of data, e.g. text, number* *-Explore a record database to find out information* *-Know that there is a difference between data and information*	Understand how simple networks are set up and used. Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. *-Use filters in a database to find out specific information -* *Understand the benefits of using a computer to create charts and databases*

Year 6 Milestones and Opportunities

Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
To connect (Online safety) **To code** *Purple Mash* *Scratch* *Hour of code* **To communicate** **To collect**	Understand the effect of online comments and show responsibility and sensitivity when online. Using Scratch: Set IF conditions for movements. Change the position of things between screen layers (send to back, bring to front) Upload sounds and edit them - add effects such as fade in and out and control their implementation. Set events to trigger events 'broadcasting' information as a trigger	Understand the effect of online comments and show responsibility and sensitivity when online. Using Scratch: Use IF THEN ELSE conditions to control events or objects and repeat Combine the use of pens with movement to create interesting effects. Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. Use the Boolean operators i.e. () < () () = () () > () ()and() ()or() Not() to define conditions.	Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Use many of the advanced features in order to create high quality, professional or efficient communications. *-Use more advanced searching techniques when using a search engine.*	Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Use many of the advanced features in order to create high quality, professional or efficient communications. *-Identify and use appropriate hardware and software to fulfil a specific task* *-Evaluate their own content against success criteria and make improvements accordingly.*	Collaborate with others online Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. *-Understand that information can be stored and shared on the Internet* *-Understand that search engines store information in databases* *-Design a questionnaire and collect a range of data on a theme*	Understand how networks are set up. Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. *-Enter data into a database package and test* *-Draw conclusions from information stored in a database, table or chart*