ST BERNADETTE'S RC PRIMARY SCHOOL

COMPUTING – MILESTONES

St Bernadette's RC Primary School

Computing - Subject Progression

Computing – Progression in Knowledge and Understanding				
	Milestone 1 – End of EYFS	**Milestone 2 – End of Year 2**	**Milestone 3 – End of Year 4**	**Milestone 4 – End of Year 6**
Computer Science/Robotics	• Understand the term 'instruction' • Code using an iPad • Use directional instructions in their code • Use more than one instruction in their code • Combine forward and turn instructions in their code to reach a destination. • Give/follow directional instructions. • Understand the term 'bug' in coding. • Understand the term 'debug' in coding. • Debug their code. • Use their knowledge of code to complete a level without any mistakes.	• Know that code is a language used to give computers instructions. • Understand the terms 'code', 'command', 'algorithm', and 'program'. • Create a multi-step algorithm to complete a real-world task. • Use commands to create algorithms for a computer program. • Learn about 'for loops', 'start and end functions', 'events', and 'delays'. • Find a bug in a code & recognise the consequences of ignoring bugs. • Follow a debugging strategy. • Create a multi-step program, adhering to a brief. • Relate algorithms to real-life situations. • Be able to predict computer behaviour based on code. • Use sequencing within an algorithm. • Explain how events enable us to solve more complex problems with code. • Explain the meaning of the terms 'sequence' and 'event' in computing.	• Recognise the differences between computers and robots. • Program inputs using a draw canvas to control a robot's movement. • Program inputs using block code to control a robot's movement. • Use sequencing in their coding. • Create an algorithm capable of guiding a robot through a course. • Translate real-life physical distance into code. • Use movement, sound, and light blocks creatively. • Successfully name, call, and define a function. • Incorporate functions into an algorithm to accommodate unpredictable repetition. • Recognise the benefits and drawbacks of automation. • Correctly identify the need for a function over a loop. • Recognise the limitations of loops in code. • Name examples of loops and functions in the real wold.	• Correctly identify the most suitable events and conditionals to deal with a potential encounter. • Name multiple types of sensors. • Program an algorithm that caters to changing circumstances. • Accurately predict the outcome of a multi-branch algorithm without running it. • Discuss examples of the pros and cons of autonomous vehicles in today's society. • Use decomposition to break a problem down into smaller parts. • Explain how an infrared sensor works. • Define the word 'variable' and give examples for its use in programming. • Create and name a variable. • Implement a system using variables which will replicate the process of counting upwards using integers. • Use conditionals to trigger code when specific physical movements are made. • Identify the correct loop to use for my specific purpose.

		• Create algorithms to solve specific problems. • Predict how a code will run before seeing it in action.		• Analyse a pre-existing game to establish standard game-play features. • Identify and code various states of play in a game. • Code my algorithm to randomise an outcome. • Use movements, animations, and sound effects to create win and lose states of a game.

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	Milestone 1 – End of EYFS	Milestone 2 – End of Year 2	Milestone 3 – End of Year 4	Milestone 4 – End of Year 6
E-Safety	• Know who my trusted adult is. • Know the importance of stranger danger. • Understand that a stranger could be someone on the internet and to never speak to or share information with someone you don't know online. • Recognise age-appropriate apps. • Understand when to ask a trusted adult for help when faced with an unfamiliar app. • Know when to go to a trusted adult for help when using an app. • Ask my trusted adult for help if I see harmful/frightening images online. • Understand the appropriate app to use for viewing videos online. • Know how to ask for help if a video frightens me online. • Understand what a pop-up is.	• Can describe & give examples of how to behave online in ways that do not upset others. • Recognise, online or offline, that anyone can say 'no', 'please stop', 'I'll tell', 'I'll ask', to somebody who makes them feel sad, uncomfortable, embarrassed, or upset. • Understand who a 'Trusted Adult' is and that I can seek their support. • Identify how and why someone might appear differently online. • Can list some of the different ways the internet can be used. • Know to keep personal details private online. • Understand how a search engine works. • Recognise different methods of searching. • Explain what is meant by 'real' and 'make believe'. • Know that not everything on the internet is true. • Describe why someone may spread misinformation. • Identify what kind of information I can find online.	• Discover what it means to have an identity, and how our online selves are an aspect of this. • Recognise forms of cyber-bullying, how this makes others feel, and how to access support. • Create a digital project. • Understand the concept of consent in an online context. • Understand what it means to 'own' content. • Understand how online actions contribute to my identity. • Remain critical, even of shared opinion. • Recognise when someone is upset, hurt, or angry online. Identify which online activities are appropriate.	• Recognise that not everyone online is a friend. • Understand app permissions. • Remember tips to stay well online. • Explain app permissions and give some examples. • Describe how identity can be altered online. • Recognise the features and impact of persuasive design. • Understand how some content can encourage fixation. • Acknowledge that 'private' jokes can have physical consequences. • Critically evaluate representations of different people. • Describe how things shared privately can have consequences for others.

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Digital Literacy

Milestone 1 – End of EYFS	Milestone 2 – End of Year 2	Milestone 3 – End of Year 4	Milestone 4 – End of Year 6
• Use gestures to navigate an iPad. • Open an app independently. • Use the magnifying glass to explore. • Use the drag gesture. • Use different mediums to paint a picture on the iPad. • Use the zoom function to add detail to my drawing. • Use different apps to draw a picture. • Develop typing skills using an iPad keyboard. • Type full sentences on a keyboard. • Create my own storybook on the app Story Creator. • Import a photo on Story Creator. • Save my work on the iPad.	• Draw an original character, importing the design into an editing app. • Demonstrate multiple iPad gestures. • Successfully edit my design, changing the size, font, and colour of the image. • Develop my story, adding text and emojis to build the narrative. • Assemble a coherent plot. • Recognise how stories use pacing to create tension. • Experient with design ideas. • Define key roles in the production of storytelling. • Create a 3D impression of a scene. • Exhibit an understanding of how stories can be represented visually. • Understand how staging and individual interpretation are important when depicting a scene.	• Create a 3D impression of a scene from a chosen text or poem. • Use multiple iPad gestures to navigate a project. • Develop my project in response to a classmate's feedback. • Exhibit an understanding of how stories can be represented visually. • Use chronological steps to complete a design plan. • Depict a scene from a text in a creative way. • Import and edit footage across multiple apps to create a movie trailer. • Develop storyboard ideas to fit a specific genre. • Operate a simple video camera and record useable footage. • Organise my ideas in a coherent way, dividing a project into manageable tasks. • Understand permissions involved with recording footage of other people, acting respectfully and responsibly. • Understand why schools and other organisations have strict policies over filming.	• Use photo editing software to crop photographs and add effects. • Enhance the perspective of an image. • Review images on a camera and delete unwanted images. • Source media assets from various sources. • Use creative expression to make informed choices with regards to page layout, font, and theming. • Recognise the potential problems of image manipulation. • Understand the history and functionality of stop motion animation. • Describe 'frames' and 'frames per second' in the context of animation. • Plan a storyboard using creative expression to represent a story or setting. • Use appropriate theming, soundtrack, sound effects, text, and visual effects to produce a short animation. • Successfully export an animation to iMovie. • Understand the limitations of exporting animation to other design apps.

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	Milestone 1 – End of EYFS	Milestone 2 – End of Year 2	Milestone 3 – End of Year 4	Milestone 4 – End of Year 6
ICT	• Name different examples of technology found at home and in the classroom. • Use an iPad camera. • Identify different examples of technology in the classroom. • Independently use the app Book Creator to develop typing skills. • Recognise the three different types of computers. • Use the iPad camera to record a video.	• Identify input and output devices. • Recognise a traditional computer and understand its function. • Successfully photograph an example of a computer in a classroom. • Use voiceover to create an interactive image. • Consider wider social aspects of technology, connecting computers with the environment. • Produce a poster highlighting a more sustainable use of technology. • Analyse the practical use of devices. • Enhance design skills. • Identify combined input and output devices. • Recognise non-traditional computers and understand their purpose within a wider social context. • Analyse the accessibility of the touchscreen. • Design a poster showcasing an inclusive shopping centre.	• Identify Ada Lovelace as the first computer programmer. • Analyse the societal restrictions of the Victorian period and how these restrictions limited access to knowledge. • Input data into a cohesive spreadsheet. • Produce a presentation using the data collected. • Identify Steve Jobs as the founder of Apple. • Recognise the importance of continual progression within technology. • Use data in a spreadsheet to create a pie chart. • Understand the visual benefits of a pie chart when presenting data. • Produce an interactive presentation, adding animations and transitions.	• Identify Alan Turing as the father of computational theory and artificial intelligence. • Understand that marginalised communities have been oppressed and objectified in the pursuit of societal goals. • Input multiple sets of data into a cohesive spreadsheet. • Use formulas in a spreadsheet. • Produce a complex, interactive presentation. • Understand the visual benefits of a bar chart when presenting data. • Identify Katherine Johnson as a trailblazer in space exploration and orbital mechanics. • Understand that women were predominantly responsible for early successes in computing but have since become underrepresented. • Input multiple sets of data into a multi-table spreadsheet • Use multi-step formulas in a spreadsheet.

		• Analyse my access to computers outside the home and how this helps daily activities. • Develop composition skills.		• Understand how to merge cells. Produce a complex, multi-media presentation. • Understand the visual benefits of a line chart when presenting data.