ST BERNADETTE'S RC PRIMARY SCHOOL

COMPUTING CURRICULUM

St Bernadette's RC Primary School

Computing Curriculum

Intent

Our Technola Computing scheme incorporates coding, robotics, computer hardware and research projects to stimulate and challenge pupils whilst fulfilling the criteria of the Computing National Curriculum for Key Stages 1 and 2.

Pupils learn the value of a multidisciplinary approach, as they develop their logic and creativity through tasks that require them to draw on their mathematical, scientific, and design and technology skills. Each child creates programs, systems and a range of content as evidence of their progress and attainment. Pupils work with a partner on IPads and learn how to navigate iOS, IT skills and how to save and organise work in a logical manner. The team of expert Technola instructors work closely with pupils to help tailor the scheme to individual strengths and needs, with a high degree of flexibility and autonomy focused on creating the best outcomes for each child.

It also involves many aspects of the PHSE National Curriculum:

In relation to managing online behaviour, relationships and internet safety, pupils are equipped with the skills necessary to thrive in an increasingly digital society and to keep themselves safe in their online interactions.

St Bernadette's RC Primary School

Computing Curriculum

COMPUTING CURRICULUM YEAR A		
NURSERY		
AUTUMN	**SPRING**	**SUMMER**
Digital Literacy: There's an app for that! Level 1 - Navigates & opens apps on IPAD independently - Use the magnifying glass to explore the forest. - Match colours to numbers and use them to paint. - Use the drag gesture to colour in multiple squares at once. - Take my time to colour in a blank template.	**E-Safety/ICT: Safety First** - Learns who their trusted adult is. - Find out about stranger danger. - Uses & recognises age-appropriate apps. - Taught what to do when faced with an unfamiliar app. - Know when to go to a trusted adult for help when using an app & what to do if they see harmful/frightening images online. - Names different examples of technology found at home and in the classroom. - Uses an iPad camera to take pictures of technology in the classroom.	**Digital Literacy: Story Makers!** - Navigates & opens apps on IPAD independently - Use different mediums to paint a picture on the iPad. - Use the zoom function to add detail to my drawing. - Use correct colours to paint different types of fruit.

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Computing Curriculum

COMPUTING CURRICULUM YEAR A

RECEPTION

AUTUMN	SPRING	SUMMER
Digital Literacy: There's an app for that! Level 2 - Can use gestures to navigate an iPad - Can safely use an iPad. - Can use a camera and a microphone to record a video message. - Knows how to hold the camera properly to take a photo. - Uses different mediums to paint a picture on the iPad. - Creates a sketchbook to save work. - Uses different rhythms and sounds to create my own composition. - Creates a new object by combining two existing objects together. - Creates a model in 3D. - Rotates and controls a camera in an app.	**E-Safety/ ICT: Safe Surfers** - Knows how to identify situations in which they may need to ask an adult to help. - Knows the appropriate app to use for viewing videos online. - Knows how to ask for help/what to do if a video frightens them online. - Understands what a pop-up is. - Taught about 'stranger danger' & understands that a stranger could be someone on the internet as well as in real-life. - Understands never speak to or share information with someone they don't know online. - Identifies different examples of technology in the classroom. - Uses the app Book Creator to develop typing skills. - Taught about the three different types of computers. - Uses the iPad camera to record a video.	**Digital Literacy: Tell me a story!** - Creates stories by working in pairs. - Recognises the different elements that appear on a front cover of a book. - Uses a variety of different apps to draw pictures. - Draws a main character based on a piece of text given. - Begins to develop typing skills using an iPad keyboard. - Begins to type full sentences on a keyboard. - Creates storybooks using the app Story Creator including creating a front cover for my story & imports a photo to use as a front cover. - Saves own work on an iPad.

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Computing Curriculum

COMPUTING CURRICULUM YEAR A

KEY STAGE 1

AUTUMN	SPRING	SUMMER
Digital Literacy: Becoming Digital Authors - Design a narrative for a short story using a beginning, middle, and end - Draw an original character, importing the design into an editing app - Demonstrate multiple iPad gestures: swiping; scrolling, pinching & dual finger rotation - Successfully edit my design, changing the size, font, and colour of the image - Develop my story, adding text and emojis to build the narrative	**ICT: Living with Technology Level 1** - Identify input and output devices - Recognise a traditional computer, understanding its function and role within the classroom/Home - Successfully photograph an example of a computer in the classroom, uploading it to a photo editing app - Use voiceover to create an interactive image using the editing app - Consider wider social aspects of technology, connecting computers with the environment - Produce a poster highlighting a more sustainable use of technology **E-Safety: safe Surfin' Level 1** - Describe how to behave online in ways that do not upset others and give examples. - 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 & that I can seek their support - Identify how & why someone might appear differently online. - List some of the different ways the internet can be used - Know to keep personal details 'private' online.	**Computer Science: Coding Level 1 & 2** - Learn 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 code. - Follow a debugging strategy. - Create a multi-step program which follows a brief. - Offer constructive feedback on a classmate's project. - Develop a project in response to a classmate's feedback.

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COMPUTING CURRICULUM YEAR A		
LOWER KEY STAGE 2		
AUTUMN	**SPRING**	**SUMMER**
Digital Literacy: 3D Architects - Create a 3D impression of a scene from a chosen text or poem - Use multiple iPad gestures, such as: swipe, pinch, tap & 2 finger gestures to navigate a project - Offer constructive feedback to a classmate's project - Develop my project in response to a classmate's feedback - • Exhibit an understanding of how stories can be represented visually	**Computer Science: Robotics (basic commands & algorithms)** - Correctly identify the most suitable event (or conditional) to deal with a potential encounter - Name multiple types of sensors available to my robot - Program an algorithm that caters to changing circumstances - Accurately predict the outcome of a multi-branch algorithm without running it	**ICT: Famous Figures: Ada Lovelace** - Identify Ada Lovelace as the first computer programmer - Analise the societal restrictions of the Victorian period & how these restrictions limited access to knowledge - Successfully navigate different mediums whilst collating data - Input data into a cohesive spreadsheet Produce a compelling presentation using the data **E-Safety: MYLO (My Life Online** - Discover what it means to have an identity, and how our online selves are an aspect of our identity - Recognise forms of cyber-bullying, how this makes others feel, and how to access support - Create a digital project with my classmates - Understand the concept of 'consent' in online contexts - Know my creative rights and what it means to 'own' content - Have a healthy attitude towards being online

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Computing Curriculum

COMPUTING CURRICULUM YEAR A

UPPER KEY STAGE 2

AUTUMN

Digital Literacy: Photography

- 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; download stock images from the internet, paying close attention to copyright laws and ownership rights

SPRING

Computer Science: Robotics (conditionals)

- Correctly identify the most suitable event (or conditional) to deal with a potential encounter
- Name multiple types of sensors available to my robot
- Program an algorithm that caters to changing circumstances
- Accurately predict the outcome of a multi-branch algorithm without running it

SUMMER

ICT: Famous Figures: Margaret Hamilton

- 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
- Successfully navigate different resources, collating data
- Input multiple sets of data into a multi-table spreadsheet
- Produce a complex, multi-media presentation

E-Safety: MYLO (My Life Online)

- Know that online bullying is still bullying
- 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

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Computing Curriculum

COMPUTING CURRICULUM YEAR B		
NURSERY		
AUTUMN	**SPRING**	**SUMMER**
Digital Literacy: There's an app for that! Level 1 - Navigates & opens apps on IPAD independently - Use the magnifying glass to explore the forest. - Match colours to numbers and use them to paint. - Use the drag gesture to colour in multiple squares at once. - Take my time to colour in a blank template.	**Computer Science: I Can Code!** - Understand the term 'instruction'. - Code using an iPad - Use directional instructions in my code - Use more than one instruction in my code. - Combine forward and turn instructions in my code to reach a destination.	**Digital Literacy: Superheroes!** - Identify the key features of a superhero - Use and open Sketches independently to draw a superhero - Use a camera and microphone to record a video message. - now how to hold the camera properly to take a photo - Create a superhero phrase - Save and export my work - Use appropriate decorations for my superhero - Design my own superhero using the Hero Maker app - Discuss the heroic actions superheroes do and relate them to heroic actions in our daily lives - Share my creation with the class - Type my name on the iPad - Create a poster celebrating the heroic things I do each day - Create a card for my everyday hero. - Import a picture onto Book Creator.

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Computing Curriculum

COMPUTING CURRICULUM YEAR B

RECEPTION

AUTUMN

Digital Literacy: There's an app for that! Level 2

- Can use gestures to navigate an iPad
- Can safely use an iPad.
- Can use a camera and a microphone to record a video message.
- Knows how to hold the camera properly to take a photo.
- Uses different mediums to paint a picture on the iPad.
- Creates a sketchbook to save work.
- Uses different rhythms and sounds to create my own composition.
- Creates a new object by combining two existing objects together.
- Creates a model in 3D.
  Rotates and controls a camera in an app.

SPRING

Computer Science: Clever Coders

- Understand the term 'instruction'
- Give/follow directional instructions
- Understand the term 'bug' in coding
- Understand the term 'debug' in coding
- Debug my code.
- Use my knowledge of code to complete a level without any mistakes.

SUMMER

ICT: Super Hero

- Identify the key features of a superhero.
- Use and open Sketches independently to draw a superhero.
- Create a superhero phrase.
- Save and export my work.
- Type my superhero name using the iPad keyboard.
- Design my own superhero in the Hero Maker app.
- Carefully think about superhero features and add them to my creation.
- Manipulate my superhero into different poses.
- Create my own comic book.
- Type full sentences on an iPad keyboard.
- Work independently to a brief.
- Add pages to my comic book.

E-Safety

- Know who my trusted adult is.
- Identify situations in which I may need to ask my trusted adult to help.
- Understand the appropriate app to use for viewing videos online.
- Know how to ask for help if a video frightens me online.
- Demonstrate how to ask for help if something frightens me online.
- Understand what a pop-up is.
- Understand the meaning 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.
- 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.

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COMPUTING CURRICULUM YEAR B

KEY STAGE 1

AUTUMN

Computer Science: Scratch Jr/Tinkerblocks

- Learn 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 code.
- Follow a debugging strategy.
- Create a multi-step program which follows a brief.
- Offer constructive feedback on a classmate's project.
- Develop a project in response to a classmate's feedback.

SPRING

ICT: Living with Technology Level 2

- Identify combined input and output devices
- Recognise non-traditional computers, understanding their wider purpose within the surrounding environment
- Analyse the accessibility of the touchscreen, recognising how it caters to different learning needs
- Design a poster showcasing an inclusive shopping centre

E-Safety: Safe Surfin' Level 2

- Understand how a search engine works
- Recognise different methods of searchin
- Explain what is meant by 'real' and 'make believe'
- Know that not everything I read may be true
- Describe why someone may spread misinformation
- Identify what kind of information I can find online

SUMMER

3D Architects

- Create a 3D impression of a scene from a chosen text or poem
- Use multiple iPad gestures, such as: swipe, pinch, tap, & 2- finger gestures to navigate a project
- Offer constructive feedback to a classmate's project
- Develop my project in response to a classmate's feedback
- Exhibit an understanding of how stories can be represented visually

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Computing Curriculum

COMPUTING CURRICULUM YEAR B

LOWER KEY STAGE 2

AUTUMN

Digital Literacy: Movie Trailers

- Create a movie trailer using iMovie, importing and editing footage across multiple apps
- Develop & storyboard ideas
- Operate a simple video camera and record useable footage
- Operate a robot in response to a classmate's direction
- Organise my ideas in a coherent way, dividing my project into manageable tasks

SPRING

Computer Science: Robotics (loops & functions)

- Successfully name, call & define a function within my programme
- Incorporate functions into my algorithm to accommodate unpredictable repetition
- Recognise the benefits & potential drawbacks of automation upon society
- Program an algorithm that caters to repetition efficiently
- Correctly identify the need for a function over a loop
- Accurately predict the outcome of an algorithm without running it

SUMMER

ICT: Famous Figures:
Steve Jobs

- Identify Steve Jobs as the founder of Apple
- Understand the key stages of Apple's development
- Successfully navigate different resources, collating data
- Input data into a cohesive spreadsheet
- Consider my own relationship to devices and how this makes access to research and entertainment more accessible

Produce an interactive presentation

E-Safety: MYLO (My Life Online)

- 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
- Know my creative rights
- Understand that online bullying is still bullying

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COMPUTING CURRICULUM YEAR B

UPPER KEY STAGE 2

AUTUMN

Digital Literacy: Arthouse Animation

- Understand the history and functionality of stop motion animation
- Describe "frames" & "frames" per second in the context of animation
- Use creative expression to plan and storyboard an effective animation to represent a story or setting
- Use appropriate theming, soundtrack, sound effects, text, and visual effects to produce a short
- Successfully export an animation to a movie

SPRING

Computer Science: Robotics (variables)

- Define the word variable & give examples for its use in programming
- Create & name a variable
- Implement a system using variables which will replicate the process of counting upwards using Integers
- Use conditionals in my program to trigger code when specific physical movements are made
- Identify the correct loop to use for my specific purpose

SUMMER

ICT: Famous Figures: Alan Turing

- Identify Alan Turing as the father of computational theory & artificial intelligence
- Understand that marginalised communities have been oppressed & objectified in the pursuit of societal goals
- Successfully navigate different resources, collating data
- Input multiple sets of data into a cohesive spreadsheet

Produce a complex, interactive presentation

E-Safety: MYLO (My Life Online)

- Recognise the features and impact of persuasive design
- Reference different material
- 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