	All Saints CE Primary School & Nursery	
	Subject: **Computing** iLearn2	**Foundation Subject Overview**

HOW DOES THIS SUBJECT FIT IN?

EYFS Framework: Across all areas of learning.	KS1 National Curriculum:	KS2 National Curriculum:

Aims of Computing (from National Curriculum)

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

What this looks like in KS1:

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

What this looks like in KS2:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

EYFS	
Areas of Learning and Development	**Activities and Resources**
Communication and Language	• Use a range of technology in role play areas • Walkie talkies • Microwave? Cash till? • Recording tins/cards/iPad • Listen to stories using technology • Follow instructions on an online game • Record conversations • Recite a rhyme and record it • Listen to music • Play phonics games
Physical Development	• Use keyboard and mouse • BBC Typing mat
Personal Social Emotional Development	• Take turns using equipment • Record voice on iPad
Literacy	• Use a range of recording devices-select the toy • Use Beebots and give verbal instructions • Digital cameras/iPad • Type name, use keyboard and mouse • Handles books and touch screen technology carefully Navigates apps and website on digital media using drop down menus and icons
Maths	• Positional language using Bee Bots • Which remote control car went the furthest? Which came first? • Beebots directed to a number/shape • Play maths games

Understanding of the World	• Use a range of technology in the outdoor area and in role play • Use simulation software- choose clothes for teddy in the correct weather, create a picture of a farm, town etc • Digital microscope to look at objects closely • Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support • Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images • Knows that information can be retrieved from digital devices and the internet • Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet • Completes a simple program on electronic devices- Beebots and Daisy Dinosaur app on iPad • Uses ICT hardware to interact with age-appropriate computer software • Can create content such as a video recording, stories, and/or draw a picture on screen • Develops digital literacy skills by being able to access, understand and interact with a range of technologies Can use the internet with adult supervision to find and retrieve information of interest to them
Expressive Art and Design	• Painting on an iPad • Painting programmes-Paint • Take photographs on iPad

Year 1

National Curriculum Objectives:	**Units**
Information Technology Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Mouse and Keyboard skills Digital Art Design Text and images Music Creation
Computer Science Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	Introduce Programming

Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	
Digital Literacy Recognise common uses of information technology beyond school Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	**Online Safety Scheme-** We are the year 1 rule writers We are kind and thoughtful We are responsible internet and device users We are information protectors We are good digital citizens We are responsible gamers
Year 2	
National Curriculum Objectives:	**Units**
Information Technology Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Digital art Introduction to animation Introduce data handling
Computer Science Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	Developing programming Programming with Scratch
Digital Literacy Recognise common uses of information technology beyond school Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	Recognise uses of IT Internet research **Online Safety Scheme-** We are the year 2 rule writers We are not online bullies We are safe searchers We are code masters We are online behaviour experts We are game raters

Year 3	
National Curriculum Objectives:	**Units**
Information Technology Use search technologies effectively Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	Comic creation Digital art Music Creation Document editing and creation 3D design
Computer Science Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs, work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web Appreciate how [search] results are selected and ranked	Programming in Scratch
Digital Literacy Understand the opportunities [networks] offer for communication and collaboration Be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Online Safety Scheme- We are the year 3 rule writers We are digital friends We are internet detectives We are aware of our digital literacy We are netiquette experts We are avatar creators

Year 4	
National Curriculum Objectives	**Units**
Information Technology Use search technologies effectively Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	Animation Video editing Data handling 3D design
Computer Science Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web Appreciate how [search] results are selected and ranked	Programming in Scratch
Digital Literacy Understand the opportunities [networks] offer for communication and collaboration Be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Internet research Online Safety Scheme- We are Year 4 rule writers We are standing up to peer pressure We are aware that our online content lasts forever We are online risk managers We are respectful of our digital rights and responsibilities We are careful when talking to virtual friends

Year 5	
National Curriculum Objectives	**Units**
Information Technology Use search technologies effectively Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	Music creation App design Data handling
Computer Science Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web Appreciate how [search] results are selected and ranked	Programming in Scratch Physical devices
Digital Literacy Understand the opportunities [networks] offer for communication and collaboration Be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Computer networks and the internet Online Safety Scheme- We are the year 5 rule writers We are responsible for our online actions We are content evaluators We are protecting our online reputation We are respectful of copyright We are game changers

Year 6	
National Curriculum Objectives	**Units**
Information Technology Use search technologies effectively Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	Graphic design Image editing Data detectives Web design
Computer Science Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web Appreciate how [search] results are selected and ranked	Programming in Scratch Machine Learning and AI
Digital Literacy Understand the opportunities [networks] offer for communication and collaboration Be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Online Safety Scheme- We are online safety ambassadors We will not share inappropriate images We are safe social networkers We are respectful of others We are online safety problem solvers We are safe gaming experts