

## Computing at St Martin's C of E Primary School

By the end of **YEAR 1** children should know:

### Computer Networks

- that technology is something that helps us
- how to locate examples of technology in the classroom
- the main parts of a computer
- how to use a mouse/trackpad to click and drag and open a program
- how to use a mouse to create a picture
- how to type their name on the keyboard

### Creating Media - Video Creation

- how to select and record a voiceover
- how to highlight and zoom into images as I record.

### Data Handling

- how to sort images or text into two or more categories on a digital device
- how to collect data on a topic
- how to create a tally chart and pictogram
- how to record myself explaining what I have done and what it shows me.

### Computational Thinking

- what algorithms are
- how to write simple algorithms
- that the sequence of algorithms is important
- how to debug simple algorithms

### Coding/Programming

- how to create a simple programme on a digital device
- how to use sequences in programmes
- how to locate and fix bugs in my programme

### Digital Literacy

### Education For a Connected World

### National Curriculum

Key stage 1 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.

### Key Vocabulary

#### **Animation/Video creation**

search, select, rearrange, title, text, record, pause, undo, zoom, pan, highlight

#### **Computer Science**

App, programme, code algorithm, sequence, order, bug, fix, precise, Digital, programme, code

#### **Data Handling**

sort, background, data, emoji, image, edit, shape, table, resize, drag, save

#### **Word Processing**

Space bar, delete, return key, enter, mouse, trackpad, arrow keys, cursor, select

### Key Skills – Word Processing

- How to type words quickly and correctly on a digital device
- What the spacebar and delete button do
- How to move to a new line

## Computing at St Martin's C of E Primary School

By the end of **YEAR 2** children should know:

### Computer Networks

- How to identify examples of computers and describe uses
- a computer is a part of IT
- what school IT is used for
- examples of information technology
- common types of technology
- how IT devices work together and why we use IT
- I can list different uses of information technology
- the need to use IT in different ways

### Creating Media - Photography

- How to edit a photo with simple tools
- How to begin to cut out an image and layer it onto another image
- how to cut images with accuracy

### Animation/Video Creation

#### Data Handling

- how to sort digital objects into a range of charts using software
- how to orally record themselves explaining what the data shows

### National Curriculum

Key stage 1 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.

### Computational Thinking

- How to use logical reasoning to predict the outcome of algorithms
- How to debug algorithms
- That decomposition is breaking objects/processes down

### Coding/Programming

- how programmes will follow precise instructions
- How to create programmes using different digital devices
- How to debug programmes with increasing complexity
- How to use logical reasoning to predict outcomes of simple programmes

### Digital Literacy

### Education For a Connected World

### Key Vocabulary

#### **Photography**

Upload image, edit, filter, cut-out, add, remove, resize, export

#### **Computer Science**

Bee Bot, app, programme, code, algorithm, sequence, decompositions, debug, precise, logical reasoning, prediction,

#### **Data Handling**

Background, upload, lock, text, labels, format, font, emoji, record, audio, caps lock, cut, copy, paste, image

#### **Word Processing**

Cut, copy, paste Caps Lock, image, save, editing, highlight

### Key Skills – Word Processing

- how to leave just one space between words
- how to select words and letters
- how to copy and paste images and text
- how to type a capital letter
- how to add images to my written text

## Computing at St Martin's C of E Primary School

By the end of **YEAR 3** children should know:

### Computer Networks

- that the computers in a school are connected together in a network
- Understand why computers are networked
- Video Creation
- I know how to sequence clips of mixed media in a timeline and record a voiceover

### Creating Media – Animations/presentations

- how to create a simple stop motion animation.
- how to explain how an animation/flip book works
- how to edit the style and effect of my text and images to make my document more engaging and eye-catching. For example, borders and shadows.
- how to create an interactive comic with sounds, formatted text and video.

### Data Handling

- how to create questions with yes/no answers
- how to identify the attributes needed to collect data about an object
- how to create a branching database
- how to explain why it is helpful for a database to be well structured
- how to plan the structure of a branching database
- how to independently create an identification tool

### National Curriculum

Key Stage 2 pupils should be taught to:

- 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

### Computational Thinking

- how to create algorithms for my programming projects
- how to decompose projects (such as an animation) into steps to create an algorithm
- understand abstraction is focusing on important information
- how to identify patterns in an algorithm

### Coding/Programming

- how to design and then create a program
- how to create a sequence of code
- how to evaluate their program
- the objects in a Scratch project (sprites, backdrops)
- that objects in Scratch have attributes (linked to)
- that commands in Scratch are represented as blocks
- that each sprite is controlled by the commands I choose
- How to explore a new programming environment
- How to identify that commands have an outcome
- How to explain that a program has a start
- How to recognise that a sequence of commands can have an order
- How to change the appearance of my project
- How to create a project from a task description

### Digital Literacy

### Education For a Connected World

### Key Vocabulary

#### ***Animation/Video creation***

Record, camera, layers, import, image, erase, resize, trim, layout, template, format, media, audio recording

#### ***Computer Science***

MicroBit, program, code, algorithm, problem, decompose, LED, output, pattern, code, sequence, pattern

#### ***Data Handling***

Graph, axis, upload, record, label, pen tool

#### ***Word Processing***

Touch type, edit, format, font, shadows, duplicate, undo, redo

### Key Skills – Word Processing

- How to use index fingers on keyboard home keys, use left index for a/s/d/f/g and right index for h/j/k/l
- How to edit the style and effect of my text
- How to use cut, copy, and paste to quickly duplicate and organise text

## Computing at St Martin's C of E Primary School

By the end of **YEAR 4** children should know:

### Computer Networks

- The internet is a worldwide network
- How webpages are viewed across the internet
- The difference between the internet and the world wide web

### Creating Media – Presentation/ Video Creation

- How to confidently use green screen to add an animated background
- How to import images to a project from the web and camera roll
- How to sequence clips of mixed media in a timeline and record a voiceover
- How to evaluate and improve the best video tools to best explain my understanding
- How to use hyperlinks

### Data Handling

- How to create and publish my own online questionnaire and analyse the results

### National Curriculum

Key Stage 2 pupils should be taught to:

- 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

### Computational Thinking

- How to use abstraction to focus on what's important in their design
- How to write more precise algorithms for use when programming
- How to use simple selection and repetition in algorithms
- How to use logical reasoning to detect and correct errors

### Coding/Programming

- How to use repetition in programmes
- How to use simple selection
- How to work with a variety of inputs and outputs
- How to use logical reasoning to systematically detect and correct errors in programmes
- how to identify that accuracy in programming is important
- how to create a program in a text-based language
- how to explain what 'repeat' means
- how to modify a count-controlled loop to produce a given outcome
- how to decompose a task into small steps
- how to create a program that uses count-controlled loops to produce a given outcome

### Digital Literacy

### Education For a Connected World

### Key Vocabulary

#### ***Animation/Video creation***

Import, resize, font, effects, adjust, layout, opacity, transparent, align, style, spacing slide video trim volume, icon, search, record, order, soundtrack, layout, split screen.

#### ***Computer Science***

Internet, router, data, webpage, submarine cable, logical reasoning algorithmic thinking selection, repeat, loop, forever loop, count controlled loop, selection, condition, MicroBit, program, code, algorithm, input, output, motion, sensor

#### ***Data Handling***

Online, questionnaire, formatting, multiple, choice, checkbox, share

#### ***Word Processing***

Crop, source, spell check, thesaurus CTRL, documents,

### Key Skills – Word Processing

- How to combine digital images from different sources
- Use text shortcuts such as cut, copy and paste to delete and organise text.
- How to use font sizes appropriately for audience and purpose.
- Use spell check, and thesaurus

## Computing at St Martin's C of E Primary School

By the end of **YEAR 5** children should know:

### Computer Networks

- How web spiders index the web for search engines
- How pages are ranked in a search engine

### Creating Media - Video Creation/

- How to use cutaway and split screen tools
- How to evaluate and improve the best video tools to explain my understanding
- How to further improve green screen clips using crop and resize and explore more creative ways to use the tool (wearing green clothes and the masking tool)
- How to create a talking GIF to explain my learning
- How to create videos using different types of media

### Data Handling

- How to use simple formulae to solve different calculations (=SUM)
- How to edit and format different cells in a spreadsheet

### National Curriculum

Key Stage 2 pupils should be taught to:

- 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

### Computational Thinking

- How to use logical reasoning to explain how a variety of algorithms work
- How to evaluate the effectiveness of algorithms
- How to solve problems by decomposing them into smaller parts
- How to use selection in algorithms

### Coding/Programming

- How to create programmes by decomposing them into smaller parts
- How to use a variety of selection commands in programmes
- How to use conditions in repeated commands
- How to work with variables
- How to create programmes that control or simulate physical systems
- How to evaluate my work and identify errors

### Digital Literacy

### Education For a Connected World

### Key Vocabulary

#### ***Animation/Video creation***

Cutaway, split screen, chroma key, crop, resize, masking, timeline, trim, import, export, trim, clips, media library, subtitles, animate, GIF, remove background

#### ***Computer Science***

Search engine, spiders, index, ranked, ranking algorithm, keyword, data, prediction, conditional loop, control, variables, condition, MicroBit, algorithm, variable, selection, input, debug

#### ***Data Handling***

Spreadsheet, cell, row, column, formula, sum, data, value, calculation

#### ***Word Processing***

Import, export, hyperlinks, animate, italics, bold, bullets

### Key Skills – Word Processing

- How to apply other useful effects to my documents such as hyperlinks
- How to import sounds to accompany and enhance the text in my document
- How to organise and reorganise text on screen to suit purpose

## Computing at St Martin's C of E Primary School

By the end of **YEAR 6** children should know:

### Computer Networks

- What HTML is and recognise HTML tags
- A range of HTML tags and remix a webpage
- How to create a webpage using HTML

### Creating Media – Websites/Animation

- how to review an existing website and consider its structure
- how to plan the features of a web page
- how to consider the ownership and use of images (copyright)
- how to recognise the need to preview pages
- how to outline the need for a navigation path
- how to recognise the implications of linking to content owned by other people
- how to effectively use animation tools in presenting software to create animations
- how to create an interactive presentation including a variety of media, animations, transitions and other effects.

### Data Handling

- How to create a data set in a spreadsheet
- How to build a data set in a spreadsheet
- How to explain that formulas can be used to produce calculated data
- How to apply formulas to data
- How to create a spreadsheet to plan an event
- How to choose suitable ways to present data

### Computational Thinking

- How to decompose a design or code to focus on specific parts
- How to use abstraction to hide complexity in my design or code
- How to recognise and make use of patterns in my design and code
- How to critically evaluate my work and suggest improvements

### Coding/Programming

- How to use a range of sequences, selection and repetition to implement my design
- How to identify the need for, and work with, variables
- How to create procedures to hide complexity in programmes
- How to critically evaluate my work and suggest improvements.

### Digital Literacy

### Education For a Connected World

### National Curriculum

Key Stage 2 pupils should be taught to:

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- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

### Key Vocabulary

#### ***Animation/Video creation***

Staging, aspect ratio, computer generated imagery (CGI) angles, overlay, cut scene, animate slide layout, transitions, embed, publish, instant alpha

#### ***Computer Science***

HTML (Hyper Text Markup Language), opening tag, closing tag, code, generalisation, pattern, modify, remix, critical, procedure, abstraction, conditional loop, logic, operator, implement

#### ***Data Handling***

Spreadsheet, cell, row, column, formula, sum, data, value, calculation

#### ***Word Processing***

Alignment, tabs, toolbar, layout, shift key,

### Key Skills – Word Processing

- How to confidently choose the best application to demonstrate my learning
- How to format text to suit purpose
- How to publish my documents and discuss the audience and purpose of my content



## Computing at St Martin's C of E Primary School

By the end of **EYFS** children should know:

### Creating Media - Video

- The difference between a photo and a video
- How to record an image
- How to use the camera app

### Creation/Animation

- How to make an image speak
- How to play an animation they have created

### Data Handling

- To sort objects and then take a picture

### Computational Thinking - BeeBots

- How to create a simple sequence to move the BeeBot
- How to fix my sequence

### Coding/Programming

- how to create a simple programme on a digital device

### Digital Literacy

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- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
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- 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.

### Key Vocabulary

#### **Animation/Video creation**

search, select, title, text, record, zoom

#### **Computer Science**

App, programme, sequence, order, fix

#### **Data Handling**

sort, background, data, emoji, image, shape, table

#### **Word Processing**

Space bar, delete, enter, select

### Key Skills – Word Processing

- How to type words
- What the spacebar and delete button do