Computing Curriculum

Suggested activities for each unit in blue taken from the Teach Computing Scheme. This document should be used for medium and short term planning.

	Autumn	Spring	Summer
	Autumn term	**Spring term**	**Summer term**
Year 1	**Autumn Term 1 - Technology Around Us** **To communicate** • Use a range of applications and devices in order to communicate ideas, work and messages. **Suggested Activities** - Begin to understand the technology around them. - Look at the main components of a computer. - Using a computer keyboard - Develop keyboard skills - Using a computer responsibly. **Key Vocabulary – technology, computer, desktop, mouse, input** **Autumn Term 2 – Creating Media painting** **To code** • Control when drawings appear and set the pen, colour, size and shape. **Suggested Activities** - Use shapes and lines - Make careful choices - Use fill and undo - Create a painting in the style of an artist	**Spring Term 1 - Digital Writing** **To communicate.** • Use a range of devices to communicate messages **Suggested Activities** - Become familiar with a key board and mouse - Change the look of text - Open a word processor **Key vocabulary – word processor, keyboard, backspace, cursor, bold, italic, underline, text.** **Spring Term 2 – Grouping Data** **To collect** - Use simple databases to record information in areas across the curriculum. **Suggested Activities** - Count and group objects. - Describe objects using labels. - Find objects with similar properties.	**Summer Term 1 – Programming – moving a robot.** **To code** - Control motion by specifying the number of steps to travel, direction and turn. - Specify the nature of events (such as a single event or a loop). **Suggested Activities** - Introduce to floor robots. - Language used for giving directions. - Experiment with turns. - Debug a program. **Key Vocabulary – instructions, algorithm, code, direction, turn.** **Summer Term 2 – Introduction to animation** **To code** - Control motion by specifying the number of steps to travel, direction and turn. - Add text strings, show and hide objects and change the features of an object. - Specify the nature of events (such as a single event or a loop).

- Select appropriate colour and brush tools **Key Vocabulary – paint, shape tools, brush, fill, undo.**	- Choose how to group objects and record. **Key Vocabulary – label, group, search, properties, dragging, dropping, data.**	**Suggested Activities** - Investigate sprites and backgrounds. - Joining blocks in ScratchJr - Add and delete sprites. - Decide how sprites will move. - Change backgrounds **Key Vocabulary – command, blocks, value, sprite, background, algorithm.**

	Autumn term	Spring term	Summer term
Year 2	**Autumn Term 1 – IT around us** **To communicate** • Use a range of applications and devices in order to communicate ideas, work and messages. **Suggested Activities** - What is information technology? - Where have we seen IT in the home and around the world? - How does IT improve the world? - Demonstrate safe use of IT. - Using IT responsibly. **Key Vocabulary – computers, information technology, file, move, resize, connected,** **Autumn Term 2 - Creating Media Photography** **To connect** • Participate in class social media accounts.	**Spring Term 1 – Making music** **To code** - To select sounds and control when they are heard, their duration and their volume. **To connect** • Use a range of applications and devices in order to communicate ideas, work and messages. **Suggested Activities** - How music makes us feel. - Rhythms and patterns. - How music can be used. - Notes and tempo - Creating digital music - Reviewing and editing music. **Key Vocabulary – rhythm, pattern, pitch, duration, sequence, notes,** **Spring Term 2 – Pictograms.**	**Summer Term 1 – Robot algorithms.** **To code** - Control motion by specifying the number of steps to travel, direction and turn. - Specify the nature of events (such as a single event or a loop). **Suggested Activities** - Giving instructions - Create short sequences - Making predictions - Design, create and test a mat for a floor robot - Design algorithms to move the robots around the mat - Debugging **Key Vocabulary – instructions, sequence, algorithm, debug.** **Summer Term 2 – Introduction to quizzes** **To code**

History Long Term Overview – Year A

- Understand online risks and the age rules for sites.

To communicate

- Use a range of applications and devices in order to communicate ideas, work and messages.

To code

- Specify user inputs (such as clicks) to control events.

Suggested Activities
- Look at devices that can be used to take photos.
- Landscape and portrait.
- What makes a good photograph?
- Lighting and focus
- Effects
- Look at whether images are real and how some can be fake.

Key vocabulary – devices, digital, landscape, portrait, image editing, capture, focus, autofocus.

To collect
- Use simple databases to record information in areas across the curriculum.

Suggested Activities
- Counting and comparing
- Enter the data
- Creating pictograms
- What is an attribute?
- Comparing people
- Presenting information

Key Vocabulary – data, pictogram, attribute.

- Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).
- Add text strings, show and hide objects and change the features of an object.

Suggested Activities
- ScratchJr recap
- Discover that a sequence of commands has an 'outcome'
- 'Start on tap' and 'Go to page' blocks.
- Look at existing quiz design and look at how that can be realized with ScratchJr
- Designing and creating a program.
- Evaluating

Key Vocabulary – sequence, algorithm, outcome, commands, blocks, sequence

	Autumn term	Spring term	Summer term
Year 3	**Autumn Term 1 – Connecting Computers** **To communicate** • Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.	**Spring Term 1 – Desktop publishing** **To communicate** - Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. **Suggested Activities**	**Summer Term 1 – Sequence in music** **To code** - Use specified screen coordinates to control movement. - Create and edit sounds. Control when they are heard, their volume, duration and rests. - Specify conditions to trigger events.

History Long Term Overview – Year A

To connect
- Understand how online services work.

Suggested Activities
- How does a digital device work?
- What parts make up a digital device?
- How do digital devices help us?
- How am I connected?
- How are computers connected?
- What does our school network look like?

Key Vocabulary – digital device, input, output, process, network, connections, switch, server, wireless access, computer network.

Autumn Term 2 – Stop frame animation

To connect
- Understand the term "copyright"

To communicate
- Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.

Suggested Activities
- Can a picture move?
- Frame by frame

- Become familiar with text and images, advantages and disadvantages of both.
- Make careful choices regarding font size, colour and type.
- Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' within desktop publishing software
- Add content to a template.
- Page layouts
- Desktop publishing in the wider world.

Key Vocabulary – text, images, layout, template, font, page orientation, placeholders, copy, paste, layout.

Spring Term 2 – Branching databases

To collect
- Devise and construct databases using applications designed for this purpose in areas across the curriculum.

Suggested Activities
- Yes or no questions
- Group collections of objects using yes and no questions
- Creating a branching database
- Structuring a branching database
- Using a branching database
- Presenting information

Key Vocabulary – attributes, branching database, questions, tree structure.

Suggested Activities
- Introduction to Scratch
- Programming sprites
- Sequences
- Ordering commands
- Combine motion and sound in one sequence.
- Making an instrument.

Key Vocabulary – sprites, backdrops, attributes, commands, sequence, algorithm.

Summer Term 2 – Events and actions

To code
- Specify conditions to trigger events.
- Use specified screen coordinates to control movement.
- Control the shade of pens.

Suggested Activities
- Moving a sprite
- Maze movement
- Drawing lines
- Adding features
- Debugging movement
- Making a project

Key Vocabulary – sprite, event, action, program, blocks.

	- What's the story – create a storyboard - Stop – frame animations - Evaluate **Key Vocabulary – sequence, flip-book, animation, frames, stop frame,**		

	Autumn term	**Spring term**	**Summer term**
Year 4	**Autumn Term 1 – The internet** **To communicate** - Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. **To connect** - Understand the term 'copyright'. - Understand how online services work. - Give examples of the risks posed by online communications. **Suggested Activities** - Connecting networks - What is the internet made of? - Sharing information - What is a website? - Who owns the web? - Can I believe what I read? **Key Vocabulary – internet, network, connecting, copyright.** **Autumn Term 2 – Audio editing**	**Spring Term 1 – Photo editing** **To code** - Set the appearance of objects and create sequences of changes. **To connect** - Understand the term 'copyright'. **To communicate** - Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. **Suggested Activities** - Changing digital images - Changing the composition of images - Changing images for different uses - Retouching images - Fake images - Making and evaluating a publication **Key Vocabulary – image, editing, effect, composition, retouched.**	**Summer Term 1 – Repetition in shapes** **To code** - Use specified screen coordinates to control movement. - Set the appearance of objects and create sequences of changes. - Specify conditions to trigger events. - Use IF THEN conditions to control events or objects. **Suggested Activities** - Programming a screen turtle - Programming letters - Patterns and repeats - Using loops to create shapes - Breaking things down - Creating a program. **Key Vocabulary – program, commands, algorithm, repetition, sequence, controlled loop, debugging.** **Summer Term 2 – Repetition in games**

To communicate
- Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.

To connect
- Understand the term 'copyright'.

To code
- Create and edit sounds. Control when they are heard, their volume, duration and rests.

Suggested Activities
- Digital recording
- Recording sound
- Creating a podcast
- Editing digital recordings
- Combining audio
- Evaluating podcasts

Key Vocabulary – digital, sound, audio, input, output, record, play back, podcast, edit, exported.

Spring Term 2 – Data logging

To collect
- Devise and construct databases using applications designed for this purpose in areas across the curriculum.

Suggested Activities
- Answering questions
- Data collection
- Logging
- Analysing data
- Data for answers
- Answering my question

Key Vocabulary – data, sensors, input devices, import, data logger.

To code
- Use specified screen coordinates to control movement.
- Set the appearance of objects and create sequences of changes.
- Specify conditions to trigger events.
- Use IF THEN conditions to control events or objects.

Suggested Activities
- Using loops to create shapes.
- Different loops
- Animate your name
- Modifying a game
- Designing a game

Key Vocabulary – repetition, snippet of code, loops, count controlled, infinite, algorithm, evaluate.

	Autumn term	Spring term	Summer term
Year 5	**Autumn Term 1 – Sharing information** **To connect** - Collaborate with others online on sites approved and moderated by teachers. - Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. - Understand how simple networks are set up and used.	**Spring Term 1 – Video editing** **To code** - Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. **To connect** - Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games,	**Summer Term 1 – Selection in physical computing** **To code** - Set IF conditions for movements. Specify types of rotation giving the number of degrees. - Use IF THEN ELSE conditions to control events or objects. - Use a range of sensing tools (including proximity, user inputs,

To communicate
- Choose the most suitable applications and devices for the purposes of communication.
- Use many of the advanced features in order to create high quality, professional or efficient communications

Suggested Activities
- Systems
- Computer systems and us
- Transferring information
- Working together
- Better working together
- Shared working

Key Vocabulary – system, inputs, processes, outputs, data, transfer, network, online, offline, collaboration.

Autumn Term 2 – Vector Drawings

To communicate
- Choose the most suitable applications and devices for the purposes of communication.
- Use many of the advanced features in order to create high quality, professional or efficient communications

To code
- Change the position of objects between screen layers (send to back, bring to front).
- Combine the use of pens with movement to create interesting effects.

without express written permission, from the copyright holder.

To communicate
- Choose the most suitable applications and devices for the purposes of communication.
- Use many of the advanced features in order to create high quality, professional or efficient communications

Suggested Activities
- What is video?
- Identifying devices
- Using a device
- Features of an effective video
- Importing and editing video
- Video evaluation

Key Vocabulary – visual, audio, digital devices, lighting, angle, store, retrieve, export, reshoot, editing, evaluate.

Spring Term 2 – Flat file databases.

To collect
- Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.

Suggested Activities
- Creating a paper based database
- Computer databases
- Using a database
- Using search tools
- Comparing data visually
- Databases in real life

loudness and mouse position) to control events or actions.

Suggested Activities
- Connecting crumbles
- Combining output devices
- Controlling with conditions
- Starting with selection
- Drawing designs
- Writing and testing algorithms

Key Vocabulary – circuit, microcontroller, LED, infinite loop, output, action, condition, debug, algorithm.

Summer Term 2 – Selection in quizzes

To code
- Set events to control other events by 'broadcasting' information as a trigger.
- Use IF THEN ELSE conditions to control events or objects.
- Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.
- Use lists to create a set of variables.

Suggested Activities
- Exploring conditions
- Selecting outcomes
- Asking questions
- Planning a quiz
- Testing a quiz
- Evaluating a quiz

Key Vocabulary – conditions, selection, modify, infinite loop.

	Suggested Activities - The drawing tools - Create a vector drawing - Being effective - Layers and objects - Manipulating objects - Get designing **Key vocabulary – vector drawing, drawing tools, resize, rotate, zoom, alignment grids, resize handles, layers, copy, paste, undo.**	**Key vocabulary – field, data, record, criteria.**	

	Autumn term	Spring term	Summer term
Year 6	**Autumn Term 1 – Internet communication** **To connect** - Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. - Understand the effect of online comments and show responsibility and sensitivity when online. **To communicate** - Choose the most suitable applications and devices for the purposes of communication. - Use many of the advanced features in order to create high quality, professional or efficient communications. **Suggested Activities** - Searching the web - Selecting search results - How search results are ranked - How are searches influenced	**Spring Term 1 – Webpage creation** **To connect** - Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. - Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. - Understand the effect of online comments and show responsibility and sensitivity when online. **To communicate** - Choose the most suitable applications and devices for the purposes of communication. - Use many of the advanced features in order to create high quality, professional or efficient communications.	**Summer Term 1 – Variables in games** **To code** - Use lists to create a set of variables. - Set events to control other events by 'broadcasting' information as a trigger. **Suggested Activities** - Introducing variables - Variables in programming - Improving a game - Designing a game - Design to code - Improving and sharing **Key Vocabulary – variables, events, algorithm, value, placeholder.** **Summer Term 2 – Sensing** **To code** - Use IF THEN ELSE conditions to control events or objects.

History Long Term Overview – Year A

- How we communicate
- Communicating responsibly

Key Vocabulary – refine, search engine, web crawlers, index,

Autumn Term 2 – 3D Modelling

To communicate
- Choose the most suitable applications and devices for the purposes of communication.
- Use many of the advanced features in order to create high quality, professional or efficient communications.

To code
- Combine the use of pens with movement to create interesting effects.
- Change the position of objects between screen layers (send to back, bring to front).

Suggested Activities
- What is 3D modelling?
- Making changes
- Rotation and position
- Making holes
- Planning my own 3D model
- Making my own 3D model

Key Vocabulary – select, move, delete, graphical objects, resize, rotate, position, duplicate.

Suggested Activities
- What makes a good website?
- How would you lay out your webpage?
- Copyright or copywrong?
- How does it look?
- Follow the breadcrumbs
- Think before you link.

Key Vocabulary – HTML, layout, copyright, fair-use, content, preview, evaluate, navigation path, hyperlinks.

Spring Term 2 – Spreadsheets

To collect
- Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.

Suggested Activities
- What is a spreadsheet?
- Modifying spreadsheets
- What's the formula?
- Calculate and duplicate
- Event planning
- Presenting data

Key vocabulary – data, format, cell, data type, input, output.

- Use lists to create a set of variables.
- Use the Boolean operators to define conditions.
- Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.

Suggested Activities
- The micro:bit
- Go with the flow
- Sensing inputs
- Finding your way
- Designing a step counter
- Making a step counter

Key Vocabulary – emulator, controllable device, conditions, variables, senses, flow, input, output.