Long Term Plan Computing
Year 5

Term	Unit	Overview	Knowledge	Skills	Assessment
Autumn 1	Computing systems and networks – Sharing information	Learners will develop their understanding of computer systems and how information is transferred between systems and devices. Learners will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will also	To recognise that computers can be part of a system in an electronic device To recognise input, process, and output in larger computer systems To recognise how information is transferred across the internet To recognise that connections between computers allow us to work together To explain that the internet lets people in different places work together To recognise that connections between computers allow us to access shared stored files To explain that the internet allows different media to be shared To recognise that internet collaborations can be public or private	To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives	Can children explain that computers can be connected to form systems? Can children recognise the role of computer systems in our lives?

			To understand that computers can be connected together to form systems To see that computers communicate with other devices (including other computers) To evaluate different ways of working together To recognise the role of computer systems in our lives To explain that data is transferred in packets To recognise that data is transferred using agreed protocols (methods)		
		take part in a collaborative online project with other class members and develop their skills in working together online.			
		Vocabulary COMPUTING SYSTEMS AND NETWORKS Sharing information Online safety System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration			

Autumn 2	Creating media – Video editing	This unit gives learners the opportunity to learn how to create short videos in groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-	To explain the features of video as a visual media format To recognise which devices can and can't record video To explain the purpose of a storyboard To recognise that filming techniques can be used to create different effects To recognise the need to regularly review and reflect on a video project To recognise projects need to be exported to be shared To identify that videos can be edited on a recording device or on a computer To explain the limitations of editing video on a recording device To identify videos can be improved through and reshooting or editing To recognise projects need to be exported to be shared	To use different camera angles To use pan, tilt and zoom To identify features of a video recording device or application To combine filming techniques for a given purpose To determine what scenes will convey your idea To choose to reshoot a scene or improve later through editing To decide what changes I will make when editing To use split, trim and crop to edit a video	Can children use different camera angles? Can children use pan, tilt and zoom? Can children identify features of a video recording device or application? Can children combine filming techniques for a given purpose? Can children determine what scenes will convey your idea? Can children choose to reshoot a scene or improve later through editing? Can children decide what changes I will make when editing? Can children use split, trim and crop to edit a video?

		by-step support to take their idea from conception to completion. At the teacher's discretion, the use of green screen can be incorporated into this unit. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video.			
		Vocabulary Video editing Online safety Video audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback			

| Spring 1 | Programming - Scratch

Could also use crumbles | Children will design and programme a character game. They will design backdrops and know how to add features or effects to improve a game. They will achieve specific goals and know how to make changes to their sprite. | To know how to design and programme a character game

Know how to design my own characters and backdrops
To know how to add features or effects to enhance a game

To know how to create an originals animated game with a specific goal
Know how to program costume changes for a sprite | To draw a background
To draw a background using blocks to make a maze
To select and change a character
To program commands that control the movement of a sprite
Make a more complex maze
Use tools to draw my own character (sprite)
Test and debug a program after making changes
Add appropriate comment to a code
Add sounds as a consequence of an action | Can children draw a background using blocks to make a maze?
Can children select and change a character?
Can children program commands that control the movement of a sprite?
Can children make a more complex maze?
Can children use tools to draw their own character (sprite)?
Can children test and debug a program after making changes? |

| | | | | Create events as a consequence to another action
Make two characters move in relation to one another
To plan sequences of instructions (an algorithm)
Translate logical instructions into coding (blocks)
To design new costumes for a sprite
And code that switches this
To add appropriate effects to complement a change of costume | Can children add appropriate comment to a code?
Can children add sounds as a consequence of an action?
Can children create events as a consequence to another action?
Can children make two characters move in relation to one another?
Can children plan sequences of instructions (an algorithm)?
Can children translate logical instructions into coding (blocks)?
Can children design new costumes for a sprite? |
| | | Vocabulary
Sequence, sprite, costume, block, script, blocks palette, scripts area, stage, backgrounds | | | Can children add appropriate effects to complement a change of costume? |

| Spring 2 | Data and information – Flat-file databases | This unit looks at how a flat-file database can be used to organise data in records. Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others. | To design an approach to answer a question using a database
To explain that a computer program can be used to organise data
To outline how ordering data allows us to answer some questions
To explain that tools can be used to select data to answer questions
To outline how operands can be used to filter data
To outline how 'AND' and 'OR' can be used to refine data selection
To explain that computer programs can be used to compare data visually
To explain that we present information to communicate a message | To navigate a flat-file database
 To choose multiple criteria to search data to answer a given question (AND and OR)
To design a structure for a flat-file database
 To choose different ways to view data
To choose which attribute to sort data by to answer a given question
To choose which attribute and value to search by to answer a given question (operands)
To ask questions that need more than one attribute to answer
To select an appropriate graph to visually compare data To choose suitable ways to present information to other people | Can children navigate a flat-file database?
 Can children choose multiple criteria to search data to answer a given question (AND and OR)?
Can children design a structure for a flat-file database?
Can children choose different ways to view data?
Can children choose which attribute to sort data by to answer a given question?
Can children choose which attribute and value to search by to answer a given question (operands)?
Can children ask questions that need more than one attribute to answer?
Can children select an appropriate graph to visually compare data?
 Can children choose suitable ways to present information to other people? |
| | | Vocabulary
 data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation | | | |

Summer 1	Creating media – Vector drawing	learners start to create vector drawings. They learn how to use different drawing tools to help them create images. Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. Learners layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work. This unit is planned using the Google Drawings app, other alternative pieces of software are available.	To identify that a vector drawing comprises separate objects To recognise that each object in a drawing is in its own layer To explain how alignment and size guides can help create a more consistent drawing To recognise that objects can be modified in groups To consider the impact of one object or choices made	To add an object to a vector drawing To delete objects To move objects between the layers of a drawing To group and ungroup selected objects To select one object or multiple choices To modify objects To duplicate objects using copy and paste To reposition objects To combine options to achieve a desired effect To create a vector drawing for a given purpose	Can the children add an object to a vector drawing ? Can they delete objects Can children move objects between the layers of a drawing? Can children group and ungroup selected objects? Can children select one object or multiple choices? Can children modify objects? Can children duplicate objects using copy and paste? Can children reposition objects? Can children combine options to achieve a desired effect? Can children create a vector drawing for a given purpose?
		Vocabulary drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives			

| Summer 2 | Programming B – Selection in quizzes | pupils develop their knowledge of selection by revisiting how conditions can be used in programs and then learning how the If… Then… Else structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They use their knowledge of writing programs and using selection to control outcomes to design a quiz in response to a given task and implement it as a program | To define that conditional statements are used in computer programs
To relate that a conditional statement connects a condition to an outcome
To explain that instructions in a program will produce specific outcomes
To outline that a condition is something that can either be true or false
To relate that a count-controlled loop contains a condition
To explain that a loop can stop when a condition is met, eg number of times
 To explain a sequence within a count-controlled or event-controlled loop
 To explain that a loop can stop when a condition is met, eg an event
To modify a count-controlled or event-controlled loop To create a count-controlled or event-controlled loop
To explain the importance of instruction order in 'if... then…' statements
To conclude that a loop can be used to repeatedly check whether a condition has been met
To explain the importance of instruction order in 'if... then... else…' statements | To experiment with a repeat-until loop
To use a condition in an 'if... then…' statement to produce a given outcome
To show that a condition can switch program flow in one of two ways
To show that a condition can switch program flow in one of two ways | Can children experiment with a repeat-until loop?
Can children use a condition in an 'if... then…' statement to produce a given outcome?
Can children show that a condition can switch program flow in one of two ways?
Can children show that a condition can switch program flow in one of two ways? |
| | | Vocabulary
condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive | | | |

Enrichment
Internet safety week
 Remote learning at home learning using the internet
 Anti-bullying week (keeping safe online opportunities)
Using computing skills across the curriculum

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