COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Early Years	
• EYFS • Children recognise that a range of technology is used in places such as homes and schools. • They select and use technology for particular purposes. • Understanding the world – explore how things work. • Physical development – develop small motor skills so they can use various tools competently, safely, and confidently. • Expressive arts and design – explore, use, and refine various artistic effects to express their ideas and feelings. • Personal, social and emotional development – remember rules without needing an adult to remind them.	
Online Safety	Recognise the impact of good choices and consequences of wrong ones. Understand that they must ask an adult whether they can use a game or app. Know that information can be retrieved from computers and can tell an adult if what they see makes them feel worried. Recognise who they can ask for help and know when they need help. Understand that they need to share equipment and take turns.
Connecting systems and networks	Role play using technology. Help adults operate equipment around school. Operate simple equipment independently. Begin to identify technology in their environment.
Creating Media	Use age appropriate websites. Use a mouse to arrange objects on a screen. With support, use a keyboard for simple typing. Interact and explore their environment using different ICT equipment e.g. cameras, microscopes, visualisers. Collect information, e.g., by taking photographs or collecting object
Programming	Explore a variety of controlled and programmable devices. Explore simple simulations, finding out what happened. Discuss what happens when a floor robot is controlled.
Data and information	Begin to sort, classify or group various objects progressing from practical activities to the use of ICT e.g., practically sorting fruit into colours, types or shapes, and then on-screen. Use ICT to sort and sequence objects on a screen or interactive whiteboard. Produce simple pictograms with help.

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Year 1/2

KS1 Computing National Curriculum

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.

	Year A	Year B
Online Safety	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership
	Key vocab safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, key, question, tell, share, stranger, danger, internet	Key vocab safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, key, question, tell, share, stranger, danger, internet

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Connecting systems and networks	**How can IT improve our world in school and beyond?**	**How can IT improve our world in school and beyond?**
	- To identify technology in the classroom (Y1 L1) - To identify a computer and its main parts (Y1 L2) - To use a mouse in different ways (Y1 L3) - To use a keyboard to type on a computer (Y1 L4) - To use the keyboard to edit text (Y1 L5) - To create rules for using technology responsibly (Y1 L6)	-To recognise the uses and features of information technology (Y2 L1) -To identify the uses of information technology in the school (Y2 L2) -To identify information technology beyond school (Y2 L3) -To explain how information technology helps us (Y2 L4) -To use information technology safely (Y2 L5) -To recognise that choices are made when using information technology (Y2 L6)
	Key vocab filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure.	Key vocab filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure.
Creating Media	**How can we create art digitally and how does it compare with non-digital art?** **How can we use a computer to create text and how is this different from non-digital text?**	**How can we use a computer to create text and how is this different from non-digital text?** **How can we use a computer to explore rhythms and melodies?**
	Digital Painting (Y1) -To describe what different freehand tools do (Y1 L1) -To use the shape tool and the line tools (Y1 L2) -To make careful choices when painting a digital picture (Y1 L3) -To explain why I chose the tools I used (Y1 L4) -To use a computer on my own to paint a picture (Y1 L5) -To compare painting a picture on a computer and on paper (Y1 L6) Digital writing (Y1) -To use a computer to write (Y1 L1) -To add and remove text on a computer (Y1 L2) -To identify that the look of text can be changed on a computer (Y1 L3) -To make careful choices when changing text (Y1 L4) -To explain why I used the tools that I chose (Y1 L5) -To compare typing on a computer to writing on paper (Y1 L6)	Digital photography (Y2) -To use a digital device to take a photograph (Y2 L1) -To make choices when taking a photograph (Y2 L2) -To describe what makes a good photograph (Y2 L3) -To decide how photographs can be improved (Y2 L4) -To use tools to change an image (Y2 L5) -To recognise that photographs can be changed (Y2 L6) Digital music (Y2) -To say how music can make us feel (Y2 L1) -To identify that there are patterns in music (Y2 L2) -To experiment with sound using a computer (Y2 L3) -To use a computer to create a musical pattern (Y2 L4) -To create music for a purpose (Y2 L5) -To review and refine our computer work (Y2 L6)

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	Key vocab paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present, commands, add sound	Key vocab paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present, commands, add sound.
	How can we create and debug programs? **How can we program a character to tell a story?**	**How can we create and debug programs?** **How can we program a character to tell a story?**
Programming	Moving a robot (Y1) -To explain what a given command will do (Y1 L1) -To act out a given word (Y1 L2) -To combine forwards and backwards commands to make a sequence (Y1 L3) -To combine four direction commands to make sequences (Y1 L4) -To plan a simple program (Y1 L5) -To find more than one solution to a problem (Y1 L6) Programming animations (Y1) -To choose a command for a given purpose (Y1 L1) -To show that a series of commands can be joined together (Y1 L2) -To identify the effect of changing a value (Y1 L3) -To explain that each sprite has its own instructions (Y1 L4) -To design the parts of a project (Y1 L5) -To use my algorithm to create a program (Y1 L6)	Robot algorithms (Y2) -To describe a series of instructions as a sequence (Y2 L1) -To explain what happens when we change the order of instructions (Y2 L2) -To use logical reasoning to predict the outcome of a program (Y2 L3) -To explain that programming projects can have code and artwork (Y2 L4) -To design an algorithm (Y2 L5) -To create and debug a program that I have written (Y2 L6) Programming quizzes (Y2) -To explain that a sequence of commands has a start (Y2 L1) -To explain that a sequence of commands has an outcome (Y2 L2) -To create a program using a given design (Y2 L3) -To change a given design (Y2 L4) -To create a program using my own design (Y2 L5) -To decide how my program can be improved (Y2 L6)
	Key vocab algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, sequence, project	Key vocab algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, sequence, project

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	How can we sort and group objects?	How can we collect and organize data on a computer?
Data and information	Grouping Data (Y1) -To label objects (Y1 L1) -To identify that objects can be counted (Y1 L2) -To describe objects in different ways (Y1 L3) -To count objects with the same properties (Y1 L4) -To compare groups of objects (Y1 L5) -To answer questions about a group of objects (Y1 L6)	Pictograms (Y2) -To recognise that we can count and compare objects using tally charts (Y2 L1) -To recognise that objects can be represented as pictures (Y2 L2) -To create a pictogram (Y2 L3) -To select objects by attribute and make comparisons (Y2 L4) -To recognise that people can be described by attributes (Y2 L5) -To explain that we can present information using a computer (Y2 L6)
	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Year 3/4

KS2 Computing National Curriculum

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.

	Year A	Year B
Online Safety	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership
	Key vocab safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying, plagiarism, profiles, account, private, public	Key vocab safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying, plagiarism, profiles, account, private, public

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Connecting systems and networks	**What devices have inputs, processes, and outputs?**	**What is the internet and why should we evaluate content?**
	Connecting Computers (Y3) -To explain how digital devices function (Y3 L1) -To identify input and output devices (Y3 L2) -To recognise how digital devices can change the way we work (Y3 L3) -To explain how a computer network can be used to share information (Y3 L4) -To explore how digital devices can be connected (Y3 L5) -To recognise the physical components of a network (Y3 L6)	The Internet (Y4) -To describe how networks physically connect to other networks (Y4 L1) -To recognise how networked devices make up the internet (Y4 L2) -To outline how websites can be shared via the World Wide Web (WWW) (Y4 L3) -To describe how content can be added and accessed on the World Wide Web (WWW) (Y4 L4) -To recognise how the content of the WWW is created by people (Y4 L5) -To evaluate the consequences of unreliable content (Y4 L6)
	Key vocab filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media	Key vocab filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media
Creating Media	**How can we use images to produce an animation?** **How can we create documents for a specific purpose?**	**How can we capture and edit audio produce a podcast?** **How can we manipulate images to fulfil a purpose?**
	Desktop Publishing (Y3) -To recognise how text and images convey information (Y3 L1) -To recognise that text and layout can be edited (Y3 L2) -To choose appropriate page settings (Y3 L3) -To add content to a desktop publishing publication (Y3 L4) -To consider how different layouts can suit different purposes (Y3 L5) -To consider the benefits of desktop publishing (Y3 L6) Audio Production (Y4) -To identify that sound can be recorded (Y4 L1) -To explain that audio recordings can be edited (Y4 L2) -To recognise the different parts of creating a podcast project (Y4 L3) -To apply audio editing skills independently (Y4 L4) -To combine audio to enhance my podcast project (Y4 L5) -To evaluate the effective use of audio (Y4 L6)	Photo editing (Y4) -To explain that the composition of digital images can be changed (Y4 L1) -To explain that colours can be changed in digital images (Y4 L2) -To explain how cloning can be used in photo editing (Y4 L3) -To explain that images can be combined (Y4 L4) -To combine images for a purpose (Y4 L5) -To evaluate how changes can improve an image (Y4 L6) Stop frame animation (Y3) -To explain that animation is a sequence of drawings or photographs (Y3 L1) -To relate animated movement with a sequence of images (Y3 L2) -To plan an animation (Y3 L3) -To identify the need to work consistently and carefully (Y3 L4) -To review and improve an animation (Y3 L5) -To evaluate the impact of adding other media to an animation (Y3 L6)

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	Key vocab draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck, audio, sound, video, movie, embed, link, file format, animate, animation, still image, stereoscope, flip book, frame, frame rate, record, stop, play	Key vocab draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck, audio, sound, video, movie, embed, link, file format, animate, animation, still image, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame
Programming	**How can we use programming language to make music?** **How can we write programs for a sequence of actions?**	**How can we use programming language for controlled loops when drawing shapes?** **How can we create infinite loops using block-based programming language?**
	Sequencing Sounds (Y3A) -To explore a new programming environment (Y3 L1) -To identify that commands have an outcome (Y3 L2) -To explain that a program has a start (Y3 L3) -To recognise that a sequence of commands can have an order (Y3 L4) -To change the appearance of my project (Y3 L5) -To create a project from a task description (Y3 L6) Repetition in shapes (Y4A) -To identify that accuracy in programming is important (Y4 L1) -To create a program in a text-based language (Y4 L2) -To explain what 'repeat' means (Y4 L3) -To modify a count-controlled loop to produce a given outcome (Y4 L4) -To decompose a task into small steps (Y4 L5) -To create a program that uses count-controlled loops to produce a given outcome (Y4 L6)	Events and actions in programs (Y3B) -To explain how a sprite moves in an existing project (Y3 L1) -To create a program to move a sprite in four directions (Y3 L2) -To adapt a program to a new context (Y3 L3) -To develop my program by adding features (Y3 L4) -To identify and fix bugs in a program (Y3 L5) -To design and create a maze-based challenge (Y3 L6) Repetition in games (Y4B) -To develop the use of count-controlled loops in a different programming environment (Y4 L1) -To explain that in programming there are infinite loops and count controlled loops (Y4 L2) -To develop a design that includes two or more loops which run at the same time (Y4 L3) -To modify an infinite loop in a given program (Y4 L4) -To design a project that includes repetition (Y4 L5) -To create a project that includes repetition (Y4 L6)

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	Key vocab decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.	Key vocab decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.
Data and information	**How can we use a branching database to group objects?**	**How can we collect data over time and why is it useful?**
	Branching databases (Y3) -To create questions with yes/no answers (Y3 L1) -To identify the attributes needed to collect data about an object (Y3 L2) -To create a branching database (Y3 L3) -To explain why it is helpful for a database to be well structured (Y3 L4) -To plan the structure of a branching database (Y3 L5) -To independently create an identification tool (Y3 L6)	Data logging (Y4) -To explain that data gathered over time can be used to answer questions (Y4 L1) -To use a digital device to collect data automatically (Y4 L2) -To explain that a data logger collects 'data points' from sensors over time (Y4 L3) -To recognise how a computer can help us analyse data (Y4 L4) -To identify the data needed to answer questions (Y4 L5) " -To use data from sensors to answer questions (Y4 L6)
	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram, insert, table, categories	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram, insert, table, categories

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Year 4/5

KS2 Computing National Curriculum

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.

	Year A	Year B
Online Safety	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership
	Key vocab safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying, plagiarism, profiles, account, private, public	Key vocab safe, meet, accept, reliable, tell, online, trusted adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying, plagiarism, profiles, account, private, public

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Connecting systems and networks	**What IT systems are around the world and how do they help us search the internet?**	**What is the internet and why should we evaluate content?**
	Systems and searching (Y5) -To explain that computers can be connected together to form systems (Y5 L1) -To recognise the role of computer systems in our lives (Y5 L2) -To experiment with search engines (Y5 L3) -To describe how search engines select results (Y5 L4) -To explain how search results are ranked (Y5 L5) -To recognise why the order of results is important, and to whom (Y5 L6)	The Internet (Y4) -To describe how networks physically connect to other networks (Y4 L1) -To recognise how networked devices make up the internet (Y4 L2) -To outline how websites can be shared via the World Wide Web (WWW) (Y4 L3) -To describe how content can be added and accessed on the World Wide Web (WWW) (Y4 L4) -To recognise how the content of the WWW is created by people (Y4 L5) -To evaluate the consequences of unreliable content (Y4 L6)
	Key vocab world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.	Key vocab filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media
Creating Media	**How can we produce a short film?** **How can use layers to create digital images?**	**How can we capture and edit audio produce a podcast?** **How can we manipulate images to fulfil a purpose?**
	Introduction to vector graphics (Y5) -To identify that drawing tools can be used to produce different outcomes (Y5 L1) -To create a vector drawing by combining shapes (Y5 L2) -To use tools to achieve a desired effect (Y5 L3) -To recognise that vector drawings consist of layers (Y5 L4) -To group objects to make them easier to work with (Y5 L5) -To apply what I have learned about vector drawings (Y5 L6) 3D Modelling (Y6) -To recognise that you can work in three dimensions on a computer (Y6, L1) -To identify that digital 3D objects can be modified (Y6 L2) -To recognise that objects can be combined in a 3D model (Y6 L3) -To create a 3D model for a given purpose (Y6 L4) -To plan my own 3D model (Y6 L5) -To create my own digital 3D model (Y6 L6)	Photo editing (Y4) -To explain that the composition of digital images can be changed (Y4 L1) -To explain that colours can be changed in digital images (Y4 L2) -To explain how cloning can be used in photo editing (Y4 L3) -To explain that images can be combined (Y4 L4) -To combine images for a purpose (Y4 L5) -To evaluate how changes can improve an image (Y4 L6) Stop frame animation (Y3) -To explain that animation is a sequence of drawings or photographs (Y3 L1) -To relate animated movement with a sequence of images (Y3 L2) -To plan an animation (Y3 L3) -To identify the need to work consistently and carefully (Y3 L4) -To review and improve an animation (Y3 L5) -To evaluate the impact of adding other media to an animation (Y3 L6)

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	Key vocab window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement, guide, audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload.	Key vocab draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck, audio, sound, video, movie, embed, link, file format, animate, animation, still image, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame

Programming	**How can we program a microcontroller?** **How can we design and code an interactive quiz?**	**How can we use programming language for controlled loops when drawing shapes?** **How can we create infinite loops using block-based programming language?**
	Selection in Physical computing (Y5) -To control a simple circuit connected to a computer (Y5 L1) -To write a program that includes count-controlled loops (Y5 L2) -To explain that a loop can stop when a condition is met (Y5 L3) -To explain that a loop can be used to repeatedly check whether a condition has been met (Y5 L4) -To design a physical project that includes selection (Y5 L5) -To create a program that controls a physical computing project (Y5 L6) Variables in games (Y6) -To define a 'variable' as something that is changeable (Y6 L1) -To explain why a variable is used in a program (Y6 L2) -To choose how to improve a game by using variables (Y6 L3) -To design a project that builds on a given example (Y6 L4) -To use my design to create a project (Y6 L5) -To evaluate my project (Y6 L6)	Events and actions in programs (Y3B) -To explain how a sprite moves in an existing project (Y3 L1) -To create a program to move a sprite in four directions (Y3 L2) -To adapt a program to a new context (Y3 L3) -To develop my program by adding features (Y3 L4) -To identify and fix bugs in a program (Y3 L5) -To design and create a maze-based challenge (Y3 L6) Repetition in games (Y4B) -To develop the use of count-controlled loops in a different programming environment (Y4 L1) -To explain that in programming there are infinite loops and count controlled loops (Y4 L2) -To develop a design that includes two or more loops which run at the same time (Y4 L3) -To modify an infinite loop in a given program (Y4 L4) -To design a project that includes repetition (Y4 L5) -To create a project that includes repetition (Y4 L6)

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	Key vocab decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.	Key vocab decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.
Data and information	**How can we use a database to answer questions?**	**How can we collect data over time and why is it useful?**
	Flat file databases (Y5) -To use a form to record information (Y5 L1) -To compare paper and computer-based databases (Y5 L2) -To outline how you can answer questions by grouping and then sorting data (Y5 L3) -To explain that tools can be used to select specific data (Y5 L4) -To explain that computer programs can be used to compare data visually (Y5 L5) -To use a real-world database to answer questions (Y5 L6)	Data logging (Y4) -To explain that data gathered over time can be used to answer questions (Y4 L1) -To use a digital device to collect data automatically (Y4 L2) -To explain that a data logger collects 'data points' from sensors over time (Y4 L3) -To recognise how a computer can help us analyse data (Y4 L4) -To identify the data needed to answer questions (Y4 L5) " -To use data from sensors to answer questions (Y4 L6)
	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram, insert, table, categories, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending.	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram, insert, table, categories

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Year 5/6

KS2 Computing National Curriculum

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.

	Year A	Year B
Online Safety	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership	Self-image and identity Online relationships Online reputation Online bullying Managing online information Health, well-being and lifestyle Privacy and security Copyright and ownership
	Key vocab spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private, personal	Key vocab spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private, personal

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

Connecting systems and networks	**What IT systems are around the world and how do they help us search the internet?**	**How is data transferred to allow us to work collaboratively?**
	Systems and searching (Y5) -To explain that computers can be connected together to form systems (Y5 L1) -To recognise the role of computer systems in our lives (Y5 L2) -To experiment with search engines (Y5 L3) -To describe how search engines select results (Y5 L4) -To explain how search results are ranked (Y5 L5) -To recognise why the order of results is important, and to whom (Y5 L6)	Communication and collaboration (Y6) -To explain the importance of internet addresses (Y6 L1) -To recognise how data is transferred across the internet (Y6 L2) -To explain how sharing information online can help people to work together (Y6 L3) -To evaluate different ways of working together online (Y6 L4) -To recognise how we communicate using technology (Y6 L5) -To evaluate different methods of online communication (Y6 L6)
	Key vocab world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.	Key vocab world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.

Creating Media	**How can we produce a short film?** **How can use layers to create digital images?**	**How can we design and create a webpage?** **How can we develop a 3D computer model of a physical object?**
	Introduction to vector graphics (Y5) -To identify that drawing tools can be used to produce different outcomes (Y5 L1) -To create a vector drawing by combining shapes (Y5 L2) -To use tools to achieve a desired effect (Y5 L3) -To recognise that vector drawings consist of layers (Y5 L4) -To group objects to make them easier to work with (Y5 L5) -To apply what I have learned about vector drawings (Y5 L6) 3D Modelling (Y6) -To recognise that you can work in three dimensions on a computer (Y6, L1) -To identify that digital 3D objects can be modified (Y6 L2) -To recognise that objects can be combined in a 3D model (Y6 L3) -To create a 3D model for a given purpose (Y6 L4) -To plan my own 3D model (Y6 L5) -To create my own digital 3D model (Y6 L6)	Video Production (Y5) -To explain what makes a video effective (Y5 L1) -To identify digital devices that can record video (Y5 L2) -To capture video using a range of techniques (Y5 L3) -To create a storyboard (Y5 L4) -To identify that video can be improved through reshooting and editing (Y5 L5) -To consider the impact of the choices made when making and sharing a video (Y5 L6) Webpage creation (Y6) -To review an existing website and consider its structure (Y6 L1) -To plan the features of a web page (Y6 L2) -To consider the ownership and use of images (copyright) (Y6 L3) -To recognise the need to preview pages (Y6 L4) -To outline the need for a navigation path (Y6 L5) -To recognise the implications of linking to content owned by other people (Y6 L6)

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	Key vocab window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement, guide, audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload.	Key vocab window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement, guide, audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload.

Programming	**How can we program a microcontroller?** **How can we design and code an interactive quiz?**	**How can we create variables to code a game?** **How can we code a project that uses inputs from a physical device?**
	Selection in Physical computing (Y5) -To control a simple circuit connected to a computer (Y5 L1) -To write a program that includes count-controlled loops (Y5 L2) -To explain that a loop can stop when a condition is met (Y5 L3) -To explain that a loop can be used to repeatedly check whether a condition has been met (Y5 L4) -To design a physical project that includes selection (Y5 L5) -To create a program that controls a physical computing project (Y5 L6) Variables in games (Y6) -To define a 'variable' as something that is changeable (Y6 L1) -To explain why a variable is used in a program (Y6 L2) -To choose how to improve a game by using variables (Y6 L3) -To design a project that builds on a given example (Y6 L4) -To use my design to create a project (Y6 L5) -To evaluate my project (Y6 L6)	Selection in quizzes (Y5) -To explain how selection is used in computer programs (Y5 L1) -To relate that a conditional statement connects a condition to an outcome (Y5 L2) -To explain how selection directs the flow of a program (Y5 L3) -To design a program which uses selection (Y5 L4) -To create a program which uses selection (Y5 L5) -To evaluate my program (Y5 L6) Sensing Movement (Y6) -To create a program to run on a controllable device (Y6 L1) -To explain that selection can control the flow of a program (Y6 L2) -To update a variable with a user input (Y6 L3) -To use a conditional statement to compare a variable to a value (Y6 L4) -To design a project that uses inputs and outputs on a controllable device (Y6 L5) -To develop a program to use inputs and outputs on a controllable device (Y6 L6)
	Key vocab flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise.	Key vocab flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise.

COMPUTING AT SANDFORD PRIMARY SCHOOL
SKILLS & KNOWLEDGE PROGRESSION MAP

	How can we use a database to answer questions?	How can we use a spreadsheet to organise and calculate data?
Data and information	Flat file databases (Y5) -To use a form to record information (Y5 L1) -To compare paper and computer-based databases (Y5 L2) -To outline how you can answer questions by grouping and then sorting data (Y5 L3) -To explain that tools can be used to select specific data (Y5 L4) -To explain that computer programs can be used to compare data visually (Y5 L5) -To use a real-world database to answer questions (Y5 L6)	Introduction to spreadsheets (Y6) -To create a data set in a spreadsheet (Y6 L1) -To build a data set in a spreadsheet (Y6 L2) -To explain that formulas can be used to produce calculated data (Y6 L3) -To apply formulas to data (Y6 L4) -To create a spreadsheet to plan an event (Y6 L5) -To choose suitable ways to present data (Y6 L6)
	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram, insert, table, categories, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending.	Key vocab Data, pictogram, information, grid, favourite, tally, chart, how many, total, branching database, graph, axis, sort, flow diagram, insert, table, categories, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending.