Three and four year olds	
Personal, Social and Emotional Development	• Remember rules without needing an adult to remind them. • Match their developing physical skills to tasks and activities in the setting.
Understanding the World	• Explore how things work
Reception	
Personal, Social and Emotional Development	• Show resilience and perseverance in the face of a challenge • Know and talk about different factors that support their overall health and well being: sensible amounts of screen time
Physical Development	• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
Expressive Art and Design	• Explore, use and refine a variety of artistic effects to express their ideas and feelings.
ELG	
Personal, Social and Emotional Development – Managing Self	• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly.
Expressive Arts – Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Knowledge Progression in Computing

<table>
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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
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.

</td></tr>
<tr><td rowspan="2">Year 1</td><td>
<h3>Technology around us</h3>

Identify examples of technology and explain how they can help us
Recognise that a computer is an example of technology
Describe what a keyboard is for
Know a computer stores work in files
Give examples of rules to keep them safe and healthy when they are using technology in and beyond the home

</td><td>
<h3>Digital Painting</h3>

Explain what different freehand tools do
Recognise that computers can be used to create a range of art
Recognise a tool can be adjusted

</td><td>
<h3>Moving a robot</h3>

Explain what a given command does
Predict the outcome of a sequence involving up to four commands
Match a command to an outcome
Understand that a program is a set of commands that a computer can run
Know that a series of instructions can be issued before they are enacted

</td></tr>
<tr><td>
<h3>Data</h3>

Explain how objects have been grouped
Know that labels are used to identify a group with similar characteristics

</td><td>
<h3>Digital Writing</h3>

Know that a keyboard is used to enter text into a computer
Know that the appearance of text can be changed

</td><td>
<h3>Programming Animations</h3>

Explain what a sprite is
Compare different programming blocks
Know a series of commands can be joined together to form a program
Understand that a program is a set of commands a computer can run

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<h3>Information Technology around us</h3>

Recognise the uses and features of information technology
Identify the uses of information technology in the school
Identify information technology beyond school
Explain how information technology helps us
Explain how to use information technology safely
Recognise that choices are made when using information technology

</td><td>
<h3>Digital Photos</h3>

Explain some aspects of taking a good photograph
Know that a photo can be portrait or landscape

</td><td>
<h3>Robot Algorythms</h3>

Understand a series of instructions
Understand different algorithms by changing the sequence of commands
Predict what a sequence of commands will do

</td></tr>
<tr><td>
<h3>Pictograms</h3>

Recognise that we can count and compare objects using tally charts
Recognise that objects can be represented as pictures
Create a pictogram
Select objects by attribute and make comparisons
Recognise that people can be described by attributes
Explain that we can present information using a computer

</td><td>
<h3>Making music</h3>

Reflect on a piece of music
Follow a rhythm pattern
Understand that a computer can generate different sounds
Understand that a computer can be used to make a sequence of notes
Understand how pattern and rhythm can be used to depict an animal

</td><td>
<h3>Programming quizzes</h3>

Know that a sequence can be started using a variety of event blocks
Know that a sequence has an outcome, and identify different programs that have the same outcome
Know the backgrounds can be changed through the programming blocks
Understand the role of the numbers on ScratchJr blocks

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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
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<h3>Connecting computers</h3>

Explain how digital devices function
Identify input and output devices
Recognise how digital devices can change the way that we work
Explain how a computer network can be used to share information
Explore how digital devices can be connected
Recognise the physical components of a network

</td><td>
<h3>Stop motion animation</h3>

Explain that animation is a sequence of drawings or photographs
Relate animated movement with a sequence of images
Plan an animation
Identify the need to work consistently and carefully
Review and improve an animation
Evaluate the impact of adding other media to an animation

</td><td>
<h3>Sequencing sounds</h3>

Choose a name that describes the action of the sprite
Create an algorithm for each sprite
Adapt their code for additional named sprites
Explain why the code is in thar particular sequence

Famous person in computing - Ada Lovelace
</td></tr>
<tr><td>
<h3>Branching databases</h3>

Create questions with yes/no answers
Identify the attributes needed to collect data about an object
Create a branching database
Explain why it is helpful for a database to be well structured
Plan the structure of a branching database
Independently create an identification tool

</td><td>
<h3>Desktop publishing</h3>

Describe how different challenges require different solutions
Give an example of when using text, images or emojis online could be misinterpreted.
Choose an appropriate layout for a given scenario

</td><td>
<h3>Events and Actions</h3>
Explain how a sprite moves in an existing project
Create a program to move a sprite in four directions
Adapt a program to a new context
Develop my program by adding features
Identify and fix bugs in a program
Design and create a maze-based challenge
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<h3>Networks</h3>
Describe how networks physically connect to other networks
Recognise how networked devices make up the internet
Outline how websites can be shared via the World Wide Web (WWW)
Describe how content can be added and accessed on the World Wide Web (WWW)
Recognise how the content of the WWW is created by people
Evaluate the consequences of unreliable content
Famous person in computing -Tim Berners-Lee
</td><td>
<h3>Audio production</h3>

Voice recordings are clear and relevant
Appropriate audio is imported
Use editing tools to remove some unneeded sounds or pauses
Additional audio is appropriately placed to play alongside the voice recording
Appropriate volume is set on all tracks

</td><td>
<h3>Repeat shapes</h3>
Identify that accuracy in programming is important
Create a program in a text-based language
Explain what ‘repeat’ means
Modify a count-controlled loop to produce a given outcome
Decompose a task into small steps
Create a program that uses count-controlled loops to produce a given outcome
</td></tr>
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<h3>Data logging</h3>

Identifies a suitable time frame to collect data to answer their question
Identifies where the data logger needs to be placed to answer their question
Identifies which sensor(s) needs to be used to answer their question
Uses software to view relevant data
Recognises how somSe data points are different

</td><td>
<h3>Photo editing</h3>

Identify the types of images needed in relation to their chosen theme
Outline how the images will be used together
Suggest colours and effects that might suit their scene

</td><td>
<h3>Repitition in games</h3>

Create additional sprites and copy code over to those sprites
Modify their code for additional sprites
Run their code and identify whether it meets the requirements of the task

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Year 5			
	Systems and searching To explain that computers can be connected together to form systems Recognise the role of computer systems in our lives Identify how to use a search engine Describe how search engines select results Explain how search results are ranked Recognise why the order of results is important, and to whom	**Video production** • Use appropriate filming techniques and capture the scenes from the storyboard • Captured audio is clear • Edit the video to join scenes, matching the storyboard	**Physical programming** • Combine appropriate blocks to implement their algorithm • Suggest a strategy to fix the code when it is not working • Test their code with their model
	Flat file data bases Use a form to record information Compare paper and computer-based databases Outline how you can answer questions by grouping and then sorting data Explain that tools can be used to select specific data Explain that computer programs can be used to compare data visually Use a real-world database to answer questions	**Vector graphics** • Choose an item in the classroom and consider how it's relevant to the task • Use copy and paste to maintain consistency within the drawing • Purposefully position and rotate objects • Manipulate multiple objects concurrently	**Programming quizzes** Explain how selection is used in computer programs Relate that a conditional statement connects a condition to an outcome Explain how selection directs the flow of a program Design a program that uses selection Create a program that uses selection Evaluate my program Famous person in computing - Sophie Wilson

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<h3>Communication and collaboration</h3>
Explain the importance of internet addresses
Recognise how data is transferred across the internet
Explain how sharing information online can help people to work together
Evaluate different ways of working together online
Recognise how we communicate using technology
Evaluate different methods of online communication
</td><td>
<h3>Website creation</h3>

Add subpages
Add internal and external hyperlinks
Suggest some improvements
Design considers how the page will look on different devices

</td><td>
<h3>Variables in games</h3>
Define a ‘variable’ as something that is changeable
Explain why a variable is used in a program
Choose how to improve a game by using variables
Design a project that builds on a given example
Use my design to create a project
To evaluate my project
Famous person in computing - Alan Turing
</td></tr>
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<h3>Introduction to spreadsheets</h3>
Create a data set in a spreadsheet
Build a data set in a spreadsheet
Explain that formulas can be used to produce calculated data
Apply formulas to data
Create a spreadsheet to plan an event
Choose suitable ways to present data
</td><td>
<h3>Sensing movement</h3>

Combine appropriate blocks to implement their algorithm
Run their code on the emulator to test their program
Propose a strategy to fix the code if it is not working

Famous person in computing - Banu Musa
</td><td>
<h3>Ai developers</h3>

Know how decision trees can be trained automatically to classify data.
Know how speech recognition works.
Know how a neural net recognises images.
Know how to train a machine learning system to identify sentiments.
Know some ethical principles in designing AI systems.

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