



## Prior Heath Infant School

### Progression of skills and knowledge overview- Computing

#### Year R

Computing in EYFS ensures that pupils enter Year 1 with a strong foundation, builds problem-solving abilities, encourages resilience and supports other areas of learning. By integrating computing into EYFS, pupils also begin to build their digital literacy and their understanding of e-safety.

**End of year milestones** (What do children need to achieve in Computing to be ready for the next school year?)

Communication and Language: Listening, Attention and Understanding	<ul style="list-style-type: none"> <li>• Understand a question or instruction that has two parts, such as: "Get your coat and wait at the door" <i>3-4yr steps</i></li> <li>• Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary <i>Reception steps</i></li> </ul>
Communication and Language: Speaking	<ul style="list-style-type: none"> <li>• Learn new vocabulary <i>Reception steps</i></li> <li>• Use new vocabulary through the day <i>Reception steps</i></li> <li>• Ask questions to find out more and to check they understand what has been said to them <i>Reception steps</i></li> <li>• Use talk to help work out problems and organise thinking and activities explain how things work and why they might happen <i>Reception steps</i></li> <li>• Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate <i>ELG</i></li> </ul>
Personal, social and emotional development: self-regulation	<ul style="list-style-type: none"> <li>• Follow two-step instructions</li> <li>• Wait with increased patience, when necessary, e.g. When waiting for a turn on the computer <i>ELG</i></li> </ul>

	<ul style="list-style-type: none"> <li>Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions <i>ELG</i></li> </ul>
Personal, social and emotional development: managing self	<ul style="list-style-type: none"> <li>Begin to persevere when something is challenging.</li> <li>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. <i>ELG</i></li> </ul>
Literacy: Comprehension	<ul style="list-style-type: none"> <li>Sequence a familiar story using images or objects.</li> <li>Use and understand recently introduced vocabulary during discussions about stories, non-fiction, rhymes and poems and during role-play. <i>ELG</i></li> </ul>

**Key Vocabulary for this year** Tablet Sequence Lap top Instructions Keyboard Log on

**Progression of skills**

<b>Computer science</b>	<b>Information Technology</b>	<b>Digital literacy</b>
To use direction words	Can find the phoneme	Ask a grown up before I go on the internet
To use position words	Can press the keyboard	To think before I click
To say what is first	Can type my name	To say how to keep safe
To notice changes in a sequence (debug)	Can map out my instructions	
Can explain my actions		
Can place the pictures in order		

## National Curriculum end of KS1 expectations

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 1

#### **End of year milestones** (What do children need to achieve in Computing to be ready for the next school year?)

- Knowledge of parts of a computer and the basic skills needed to effectively use a computer keyboard and mouse.
- Have an understanding and use of a range of tools used for digital painting.
- Give and follow instructions both verbally and through programming a beebot
- Label and group objects based on their properties.
- Drag and drop skills on a device
- Find and use the keys on a keyboard in order to create digital content
- Manipulate the resulting text, making cosmetic changes, and justify their reason for making these changes
- Use programming blocks to use, modify, and create programs

#### **Key Vocabulary for this year**

Unit 1: Technology, computer, mouse, trackpad, keyboard, screen, double-click, typing,

Unit 2: Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, Georges Seurat, pointillism, brush size, pictures, painting, like, prefer, dislike

Unit 3: Forwards, backwards, turn, clear, go, commands, instructions, directions, commands, left, right, plan, algorithm, program, route

Unit 4: Object, label, group, search, image, property, colour, size, shape, property, value, data set, value, more, less, most, fewest, least, the same

Unit 5: Word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, font, format, compare, typing, writing

Unit 6: ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, command, Start block, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, appropriate, design, programming blocks

**Progression of skills**

**Computer science**

Pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming

**Information Technology**

Pupils are equipped to use information technology to create programs, systems and a range of content.

**Digital literacy**

Pupils become digitally literate - able to use, and express themselves and develop their ideas through, information and communication technology - at a level suitable for the future workplace and as active participants in a digital world.

Know that an algorithm is the steps to carry out a task and that a computer program is a list of instructions for a computer to follow.

Can give single instructions to a computer.

To know that a bug is a problem in a computer system.

To know that to debug a program is to fix a problem in a computer problem.

Can follow instructions to give a sequence (list) of instructions to a computer.

Can edit a line in a simple program to change what it does.

Can recognise when a simple computer program runs correctly or when it has a bug.

To know the purpose of the instruction that I give to a computer.

Can follow the steps in a simple program.

Can follow instructions to create basic digital outcomes using a variety of software (e.g. draw a picture, type in text, take a photo, record my voice).

Can create basic digital outcomes using a variety of software (e.g. draw a picture, type in text, take a photo, record my voice).

Can store work that I have created with a sensible name so that I can recognise it again.

Can retrieve work that I have saved.

Can manipulate (edit) basic digital content (e.g. format text, copy an image).

Can use technology purposefully to create digital content.

Can use technology purposefully to organise and store my work (can save my work).

Can use technology purposefully to manipulate (edit) my work (can make decisions about my work and edit it to the way I want)

Can use technology purposefully to retrieve my work (can organise my work so that I can retrieve it e.g. create folders)

## Year 2

### End of year milestones (What do children need to achieve in Computing to be ready for the next school year?)

- Be familiar with the term information technology and will be able to identify common features of IT
- Use technology safely and responsibly
- Understand how photos are captured and can be manipulated for different purposes
- Understand how algorithms are implemented as programs on digital devices
- Understand how the order of commands affects outcomes
- Use knowledge and logical reasoning to trace programs and predict outcomes
- Use a computer program to present information in different ways
- Create a pictogram and draw conclusions from it
- Purposefully create rhythm patterns and music.
- Can connect images with sounds
- Can use a computer to experiment with pitch
- Understand that sequences of commands have an outcome, and make predictions based on their learning

### Key Vocabulary for this year

Unit 1: Information technology (IT), computer, barcode, scanner/scan,

Unit 2: Device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting, focus, filter

Unit 3: Instruction, sequence, clear, unambiguous, algorithm, program, order, instructions, prediction, artwork, design, route, mat, debugging, decomposition

Unit 4: More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, compare, more than, less than, count, explain, more, less, most, least, more common, least common, attribute, group, same, different, most popular, least popular, conclusion, block diagram, common, sharing

Unit 5: Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, notes, instrument, tempo, create, emotion, pitch, beat, open, edit

Unit 6: Sequence, command, program, run, start, outcome, predict, blocks, sprite, algorithm, design, actions, project, modify, change, build, match, compare, debug, features, evaluate

#### Computer science

Pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming

#### Information Technology

Pupils are equipped to use information technology to create programs, systems and a range of content.

#### Digital literacy

Pupils become digitally literate - able to use, and express themselves and develop their ideas through, information and communication technology - at a level suitable for the future workplace and as active participants in a digital world.

<p>To understand what an algorithm is (<i>precise instructions that have only one meaning</i>).</p> <p>To understand that algorithms are implemented as programs on digital devices.</p> <p>To understand that programs execute by following exact instructions (<i>can identify individual steps in a task</i>).</p> <p>Can create a program (<i>can write a simple program using a sequence of instructions</i>).</p> <p>Can debug a program (<i>can find and fix a bug</i>).</p> <p>Can use logical reasoning to predict the behaviour of simple programs (<i>e.g. predict how a simple program will behave and explain my prediction</i>).</p>	<p>Can use technology purposefully to create digital content.</p> <p>Can use technology purposefully to organise and store my work (<i>can save my work</i>).</p> <p>Can use technology purposefully to manipulate (edit) my work (<i>can make decisions about my work and edit it to the way I want</i>).</p> <p>Can use technology purposefully to retrieve my work (<i>can organise my work so that I can retrieve it e.g. create folders</i>).</p>	<p>To know some ways in which information technology can be used outside school.</p> <p>Can use technology safely and respectfully</p> <p>Understand the importance of keeping personal information private (<i>understand where to go to for help and support when they have concerns about content or contact on the internet or other online technologies</i>).</p> <p>Can find information on a website.</p>
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