

**Subject: Computing**

<b>EYFS Early Learning Goals (Reception)</b>	Computing is not explicitly mentioned within the new <u>EYFS</u> , but there are many opportunities for Reception to use technology to solve problems and produce creative outcomes. In particular, many areas of the framework provide opportunities for the children to develop their ability to use computational thinking effectively. The Development Matters (pg. 2) document states of best practice in early years is creative, active, exploratory, playful and encourages critical thinking.
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**End of KS1 objectives:**

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions (Units 1.4, 1.5, 1.7, 2.1)
- create and debug simple programs (Units 1.5, 1.7, 2.1)
- use logical reasoning to predict the behaviour of simple programs (Units 1.5, 1.7, 2.1)
- use technology purposefully to create, organise, store, manipulate and retrieve digital content (Units 1.2, 1.3, 1.6, 1.7, 1.8, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8)
- recognise common uses of information technology beyond school (Units 1.9, 2.5)
- 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 (Units 1.1, 2.2)

	Links to learning in Year R	Year 1	Year 2
<b>AUTUMN TERM. Key Learning (knowledge).Key Skills and vocabulary</b>	<p>Using the Interactive White Board during lessons.</p> <p>Keyboard skills:</p> <ul style="list-style-type: none"> <li>➤ Using a laptop in the roleplay area</li> <li>➤ Using a phone in the roleplay area</li> <li>➤ Using a till in the roleplay area</li> </ul> <p>Audio books – Listening to Audio books in the book corner</p>	<p><b>Unit 1.2 - Grouping and Sorting (XC link to Maths Sorting)</b> In this unit, the children will sort items by different criteria away from the computer. At the computer, they will use Grouping on Purple Mash to sort items.</p> <ul style="list-style-type: none"> <li>➤ Understand that data can be represented in picture format.</li> </ul> <p><b>Unit 1.3 - Pictograms (XC link to Science)</b> This unit is an introduction to pictograms and looking at how they can be used to represent data.</p> <ul style="list-style-type: none"> <li>➤ Understand what a <b>pictogram</b> is and what it shows.</li> </ul>	<p><b>Unit 2.7 Making Music (XC links English, Music and PSHE)</b> This series of three lessons will provide the children with the knowledge and understanding to create simple and more complex animations using 2Sequence. The children can use 2Sequence to explore harmony and build up musical scores.</p> <ul style="list-style-type: none"> <li>➤ To make music digitally using 2Sequence.</li> <li>➤ To explore, edit and combine sounds using 2Sequence.</li> <li>➤ To edit and refine composed music.</li> <li>➤ To think about how music can be used to express feelings and create tunes which depict feelings.</li> <li>➤ To upload a sound from a bank of sounds into the Sounds section.</li> <li>➤ To record and upload environmental sounds into Purple Mash.</li> <li>➤ To use these sounds to create tunes in 2Sequence.</li> </ul> <p><b>Unit 2.5 Effective Searching – (XC link to English)</b> These lessons allow the children to develop an understanding of what the Internet is. It will also give them the basic tools to help them search for information more</p>

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- To understand the terminology associated with searching.
- To gain a better understanding of searching on the Internet.
- To create a leaflet to help someone search for information on the Internet.

Introducing the classroom desktop computer during independent learning. Children will be able to use MiniMash to develop their keyboard and mouse skills.

Using the Interactive White Board during lessons.

Keyboard skills:

- Using a laptop in the roleplay area
- Using a phone in the roleplay area
- Using a till in the roleplay area

Audio books – Listening to Audio books in the book corner

### Online Safety

Visit the library and listen/read age appropriate online safety stories.

Online safety discussions

Participate during Safer Internet Day

### Unit 1.1 - Online Safety (XC links to PSHE and Safer Internet Day)

The online safety unit within our Computing Scheme of Work provides in-depth coverage of computing related online safety aspects. We also cover aspects of online safety within whole school assemblies, Safer Internet Day and PSHE lessons (Units Healthy Me and Relationships).

- Understand the term '**ownership**' over work.
- Understand why having own **avatar** is useful.
- Understand why **logging out** of Purple Mash is important

### Unit 1.8 - Spreadsheets (XC link Maths addition and subtraction)

- Understand what a **spreadsheet** is and what **rows** and **columns** are

### Unit 1.4 – Lego Builders (XC link PSHE Healthy Me)

This unit encourages children to begin to think logically about scenarios. Children will be introduced to the term 'algorithm'. This concept is at the core of coding. The unit Maze Explorers (Taught in Summer 1), builds upon this, linking logical thought processes to the way that computers are programmed.

- Understand the importance of following accurate instructions carefully to get result
- Understand that the order in which instructions are presented in affects the outcome Know that **computers** need precise and instructions to follow for something to happen
- Understand key terms (defined below) – algorithm, program, debugging

### Unit 2.2 Online Safety (XC links to PSHE and Safer Internet Day)

The online safety unit within our Computing Scheme of Work provides in-depth coverage of computing related online safety aspects. We also cover aspects of online safety within whole school assemblies, Safer Internet Day and PSHE lessons (Units Healthy Me and Relationships).

- To know how to refine searches using the Search tool.
- To use digital technology to share work on Purple Mash to communicate and connect with others locally.
- To have some knowledge and understanding about sharing more globally on the Internet.
- To introduce Email as a communication tool using 2Respond simulations.
- To understand how we should talk to others in an online situation.
- To open and send simple online communications in the form of email.
- To understand that information put online leaves a digital footprint or trail.
- To identify the steps that can be taken to keep personal data and hardware secure.

### Unit 2.3 Spreadsheets

- To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine.
- To learn how to copy and paste in 2Calculate.
- To use the totalling tools.
- To use a spreadsheet for money calculations.
- To use the 2Calculate equals tool to check calculations.
- To use 2Calculate to collect data and produce a graph.

**Unit 2.4 Questioning (XC link to Maths Statistics)**

This unit is designed to help children learn about the importance of phrasing questions and that certain data-handling resources are limited in the answers they can provide.

- To learn about data handling tools that can give more information than pictograms.
- To use yes/no questions to separate information.
- To construct a binary tree to identify items.
- To use 2Question (a binary tree database) to answer questions.
- To use a database to answer more complex search questions.
- To use the Search tool to find information

Children to use the desktop computers during independent learning.

Children will be able to use MiniMash to develop their keyboard and mouse skills.

Using the Interactive White Board during lessons.

Keyboard skills:

- Using a laptop in the roleplay area
- Using a phone in the roleplay area
- Using a till in the roleplay area

Audio books – Listening to Audio books in the book corner

Coding – Using BeeBots

#### **Unit 1.5 – Maze Explorers (XC link to Geometry Direction and Position)**

2Go is a program that allows you to move an object around the screen using either the arrows or by creating a simple sequence of instructions.

- To understand the functionality of the direction keys.
- To understand how to create and debug a set of instructions (algorithm).
- To use the additional direction keys as part of an algorithm.
- To understand how to change and extend the algorithm list.
- To create a longer algorithm for an activity.
- To set challenges for peers.
- To access peer challenges set by the teacher as 2Dos.

#### **Unit 1.6 – Animated Stories (XC link to English)**

The series of lessons will provide an opportunity for the children to develop the skills to create, organise, store, manipulate and retrieve digital content through the creation of their own animated story book. Having developed the necessary skills to use 2Create a Story, the children could then use and apply these skills using information technology to support writing activities.

- To introduce e-books and the 2Create a Story tool.
- To add animation to a story.
- To add sound to a story, including voice recording and music the children have composed.
- To work on a more complex story, including adding backgrounds and copying and pasting pages.

#### **Unit 1.7 Coding (XC link Maths Geometry)**

- To understand what instructions are and predict what might happen when they are followed.
- To use code to make a computer program.
- To understand what object and actions are.
- To understand what an event is.

#### **Unit 2.8 Presenting Ideas (XC links to English)**

- To explore how a story can be presented in different ways.
- To make a quiz about a story or class topic.
- To make a fact file on a non-fiction topic.
- To make a presentation to the class.

#### **Unit 2.1 Coding (XC links to Maths Geometry)**

- To understand what an algorithm is.
- To create a computer program using an algorithm.
- To create a program using a given design.
- To understand the collision detection event.
- To understand that algorithms follow a sequence.
- To design an algorithm that follows a timed sequence.
- To understand that different objects have different properties.
- To understand what different events do in code.
- To understand the function of buttons in a program.
- To understand and debug simple programs.

#### **Unit 2.6 Creating Pictures (XC Art week)**

- To learn the functions of the 2Paint a Picture tool.
- To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir).
- To recreate Pointillist art and look at the work of pointillist artists such as Seurat.
- To learn about the work of Piet Mondrian and recreate the style using the lines template.
- To learn about the work of William Morris and recreate the style using the patterns template.
- To explore surrealism and eCollage

		<ul style="list-style-type: none"> <li>➤ To use an event to control an object.</li> <li>➤ To begin to understand how code executes when a program is run.</li> <li>➤ To understand what backgrounds and objects are.</li> <li>➤ To plan and make a computer program.</li> </ul> <p><b>Unit 1.9 Tech outside of school</b></p> <ul style="list-style-type: none"> <li>➤ To walk around the local community and find examples of where technology is used.</li> <li>➤ To record examples of technology outside school.</li> </ul>	
Key Skills & Vocabulary		<p><b>Unit 1.1</b> - Log in, username, password, avatar, log out, save, ownership</p> <p><b>Unit 1.2</b> - Sort, criteria</p> <p><b>Unit 1.3</b> - pictogram, data, collate</p> <p><b>Unit 1.4</b> - instruction, algorithm, computer, program, debug</p> <p><b>Unit 1.5</b> - direction, challenge, arrow, undo, rewind, forward, backwards, right turn, left turn, debug, instruction, algorithm</p> <p><b>Unit 1.6</b> - animation, e-book, font, file, sound effect, display board</p> <p><b>Unit 1.7</b> - action, background, button, character, code block, code design, coder, coding, collision detection, command, design mode, input, object, program, properties, scale, stop command, sound, when clicked, when key</p> <p><b>Unit 1.8</b> - arrow keys, backspace key, cursor, columns, cells, clipart, count tool, delete key, image toolbox, lock tool, move cell tool, rows, speak tool, spreadsheet</p>	<p><b>Unit 1</b> – action, algorithm, bug, character, code block, code design, command, debug/debugging, design mode, input, object, properties, repeat, scale, timer, when clicked, when key</p> <p><b>Unit 2</b> – search, display board, internet, sharing, email, attachment, digital footprint</p> <p><b>Unit 3</b> – backspace key, copy and paste, columns, cells, count tool, delete key, equals tool, image toolbox, lock tool, move cell tool, rows, speak tool, spreadsheet</p> <p><b>Unit 4</b> – pictogram, question, data, collate, binary tree, avatar, database</p>
Enrichment	Safer Internet Day – 8 <sup>th</sup> February	Safer Internet Day – 8 <sup>th</sup> February	Safer Internet Day – 8 <sup>th</sup> February

<p>Links to other subjects</p>	<p>Understanding the world  Mathematics  Personal, Social and Emotional development  Communication and Language</p>	<p>Maths – Sorting, Geometry, Addition and Subtraction  Science – Materials  PSHE – Healthy Me and Relationships  English – Writing for a purpose, researching non-fiction information</p>	<p>Maths – Geometry, Statistics  English – Fairy tales ,write for a purpose, researching non-fiction information  Art – Art week, Exploring different artists and techniques  PSHE – Healthy Me and Relationships  Music</p>
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