

Our Computing curriculum equips pupils to use computational thinking and creativity to understand and change the world. At Great Wood, Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that 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. We give pupils the tools to navigate the online world and stay safe while doing so; ‘Online Safety’ is a key theme which is interwoven through our Computing curriculum. Strong links are made with PSHCE.

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology
- use technology safely and respectfully, recognise acceptable and unacceptable **conduct** and identify a range of ways to report concerns about **content**, **commerce** and **contact**.

| EYFS   | CEOP Lee and Kim  | 1.1 We are treasure hunters RS  | 1.3 We are painters RS  |  |
|--------|---|---|---|--|
| Year 1 | Espresso 1: Rules for Staying Safe Online<br><br>Espresso 3: Passwords<br><br>Childnet International: DigiDuck                            | 1 Moving and clicking<br>1b Obey my command E   | Y1 Word processing skills T                                   | 1.4 We are collectors - Finding images using the web RS  |
| Year 2 | Espresso 2: Computers and The Internet<br><br>Espresso 4: Online and Offline Behaviour<br><br>Childnet International: Smartie the Penguin | 2A Different sorts of input E<br><br>2B Buttons and instructions E                                      | 2.5 We are email detectives - Collecting clues RS             | 2.4 We are researchers - Researching a topic RS (Y2 presentation T)  |
| Year 3 | SCARF<br>None of Your Business & Super Searchers  | Y3 Word processing skills T (Link to Twinkl Fake News)  |   | 3A Sequence and animation E<br>3B Conditional events - selection E   |
| Year 4 | SCARF<br>Crack the Code & Picture Wise  | Y3 Presentation skills (linked to Online Safety – fake photography (T), in-app purchases (T) passwords) | T 4A Introduction to variables E<br>4B Repetition and loops E | Y3 Internet research and communication T (Online safety – Digital personality & footprint and Online commerce and advertising) |

|        |  |  |   |   |
|--------|--|--|---|---|
| Year 5 | SCARF Risks & Consequences, Facebook Friends, Think Before You Click, To Share or Not to Share | 5a Speed, Direction and co-ordinates E<br>5b Random numbers and simulations E  | 3.4 We are network engineers - Exploring computer networks, including the internet RS | 1 Introduction to HTML E<br>2 HTML formatting and CSS E<br>3 HTML links E |
| Year 6 | SCARF & Traffic Lights & ThinkUKnow Send Me a Pic  | 6a More Complex Variables<br>6b Object properties<br>1 Introduction to Python<br>2 Python Graphics<br>3 Python random numbers and simulation<br>4 Python functions |   | Y6 Spreadsheets T (Online safety link – survey of influencers followed)   |

## Foundation Stage

### CEOP Lee & Kim

In this unit, the children are taught about personal information and the importance of keeping this secure both online and off.

| National Curriculum ELG   | Key Learning *  | Assessment   | PSHCE Links   |
|---|---|--|---|
| <ul style="list-style-type: none"> <li>Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions</li> <li>Make comments about what they have heard and ask questions to clarify their understanding</li> <li>Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary</li> <li>Show an understanding of their own feelings and those of others, and begin to regulate their behaviour accordingly</li> <li>Explain the reasons for rules, know right from wrong and try to behave accordingly</li> <li>Show sensitivity to their own and to others' needs</li> <li>Talk about the lives of the people around them and their roles in society</li> </ul> | <ul style="list-style-type: none"> <li>Recognise, online or offline, that anyone can say 'no'/'please stop', 'I'll tell'/'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset</li> <li>Understand that people can represent themselves in different ways online</li> <li>Understand was in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why</li> <li>Understand some ways in which the internet can be used to communicate</li> <li>Understanding that someone's feelings can be hurt by what is said or written online</li> <li>Be able to give examples of what anyone may not be willing to share about themselves online and explain the need to be careful before sharing anything personal</li> <li>Understand some ways that some people can be unkind online</li> <li>Identify and give examples of rules that help keep us safe and healthy in and beyond the home when using technology</li> <li>Identify some simple examples of my personal information (e.g. name, address, birthday, age, location)</li> </ul> | <ul style="list-style-type: none"> <li>I can talk about ways of communicating online.</li> <li>I know that people's feelings can be hurt online.</li> <li>I can give examples of things which are safe or unsafe to share online.</li> <li>I can describe some rules for staying safe online.</li> </ul> | <ul style="list-style-type: none"> <li>To understand that people are not always who they say they are.</li> <li>To realise the importance of politeness and courtesy both on and off the internet.</li> <li>To know what action to take if they feel they may be in danger.</li> <li>To understand the uses of ICT inside and outside of school and to use it responsibly.</li> <li>To be aware of, and able to use, the rules for keeping safe on the internet.</li> <li>To understand the importance of sharing any concerns they may have when using online technology with a responsible adult.</li> <li>To be aware of how their behaviour affects other people (Online Safety Week Plan)</li> </ul> |

### We are treasure hunters (RS – 1.1)

In this unit, the children will program a toy to move around a map to find buried treasure. They will start by thinking of algorithms for their routes, then input these as stored programs for the robot. They predict how the robot will move and will debug their programs.

| National Curriculum ELG   | Key Learning   | Assessment   | PSHCE Links  |
|---|--|--|--|
| <ul style="list-style-type: none"> <li>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</li> <li>Create and debug simple programs.</li> <li>Use logical reasoning to predict the behaviour of simple programs.</li> <li>Recognise common use of information technology beyond school.</li> </ul> | <ul style="list-style-type: none"> <li>Understand that a programmable toy can be controlled by inputting a sequence of instructions.</li> <li>Develop and record sequences of instructions as an algorithm.</li> <li>Program the toy to follow the algorithm.</li> <li>Debug their programs.</li> <li>Predict how their programs will work.</li> </ul> | <ul style="list-style-type: none"> <li>I know what input, program and output means for a robot toy.</li> <li>I can create a program.</li> <li>I can spot and correct mistakes in a program (debug).</li> <li>I can predict where a set of instructions will take a toy or person.</li> <li>I can look for ways to make a program work better.</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |

### We are painters (RS – 1.3)

This unit will particularly engage children who love the illustrations in the books they read. It is a great opportunity for the children to work creatively.

| National Curriculum  | Key Learning   | Assessment  | PSHCE Links  |
|--|--|---|--|
| <ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>Recognise common uses of information technology beyond school.</li> <li>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.</li> </ul> | <ul style="list-style-type: none"> <li>Use the web safely to find ideas for an illustration.</li> <li>Select and use appropriate painting tools to create and change images on the computer.</li> <li>Understands how this use of ICT differs from using paint and paper.</li> <li>Create an illustration for a particular purpose.</li> <li>Know how to save, retrieve and change their work.</li> <li>Reflect on their work and act on feedback received.</li> </ul> | <ul style="list-style-type: none"> <li>I can edit an image.</li> <li>I can use a paint program to show details of my character.</li> <li>I can save my work.</li> <li>I can find images on the web and know what to do if I am worried.</li> <li>I can make my work even better.</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |

## Year 1

### Espresso: Rules for Staying Safe Online (Unit 1) and Passwords (Unit 3)

| National Curriculum  | Key Learning   | Assessment   | PSHCE Links   |
|--|--|--|---|
| <ul style="list-style-type: none"> <li>Recognise common uses of information technology beyond school</li> <li>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</li> </ul> | <ul style="list-style-type: none"> <li>Recognise, online or offline, that anyone can say 'no' / 'please stop', 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset</li> <li>Understand what is meant by the term 'identity'</li> <li>Understand some ways people use technology to communicate with people they know</li> <li>Understand what it means to 'know someone' online and why this is different from 'liking someone' online, and why it is important to be careful about who you trust online including what information and content they are trusted with</li> <li>Understand why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried</li> </ul> | <ul style="list-style-type: none"> <li>I can describe what to do when I feel nervous or worried about something online.</li> <li>I know that people's feelings can be hurt online.</li> <li>I can give examples of things which are safe or unsafe to share online.</li> </ul> | <ul style="list-style-type: none"> <li>To teach children that some information is precious or special because it applies just to them.</li> <li>To teach children that personal information is as valuable online as it is offline, and should therefore not be shared without a parent or teacher's permission.</li> </ul> |

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|--|---|---|---|
|  | <ul style="list-style-type: none"> <li>• Understand the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline (e.g. sharing images and videos)</li> <li>• Understand ways in which to put information on the internet and describe who is trustworthy to share information with</li> <li>• Understand who to ask if they are unsure about putting something online</li> <li>• To be able to describe and assess the benefits and potential risks of sharing information online</li> <li>• Understand appropriate ways to behave towards other people online and why this is important.</li> <li>• To be able to give examples of how bullying behaviour could appear online and how to get support</li> <li>• Understand how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened</li> <li>• To know strategies to identify and assess when peers may need support and describe ways to assist peers who may be experiencing difficulties</li> <li>• Understand strategies for creating and keeping passwords private</li> </ul> | <ul style="list-style-type: none"> <li>• I can describe some rules for staying safe online.</li> <li>• I can describe some forms of online communication.</li> <li>• I can give examples of how bullying behaviour could appear online and how to get support.</li> </ul> | <ul style="list-style-type: none"> <li>• To teach children to understand that not everyone they meet is automatically trustworthy.</li> <li>• To enable children to begin to identify the characteristics of people that are worthy of their trust and who can help them make positive choices to keep them safe.</li> <li>• To teach children to begin to understand some of the qualities that can be used to assess if a person is trustworthy.</li> <li>• To help children to identify situations in which it is wise to turn to a trusted adult for help.</li> <li>• To enable children to understand that their emotions can be a powerful tool to help them assess unsafe situations.</li> <li>• To ensure that children can identify some of the physical sensations that alert us to unsafe situations.</li> <li>• To ensure that children understand the importance of checking with an adult before participating in the online environment.</li> <li>• To encourage children to be open about their online experiences with a trusted adult.</li> </ul> <p><b>Online Safety Week Plan</b></p> |
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### 1a Moving and clicking (E)

In this unit pupils learn that programs execute by following clear instructions. They are introduced to the fact that programs respond to inputs to do different things.

| National Curriculum   | Key Learning   | Assessment  | PSHCE Links |
|---|--|---|-------------|
| <ul style="list-style-type: none"> <li>• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by</li> </ul> | <ul style="list-style-type: none"> <li>• Understand that when a computer does something it is following instructions called code.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>• I can add my own object and write code to make it move</li> </ul> <p><b>Most</b></p> |             |

|   |   |  |  |
|---|---|--|--|
| <p>following precise and unambiguous instructions</p> <ul style="list-style-type: none"> <li>• use logical reasoning to predict the behaviour of simple programs</li> <li>• 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.</li> </ul> | <ul style="list-style-type: none"> <li>• Understand that code can represent objects and actions.</li> <li>• Understand that code can be used to make an object carry out an action.</li> <li>• Create a simple program.</li> <li>• Design and create a simple program.</li> </ul> | <ul style="list-style-type: none"> <li>• I can add more than one object and write code to make them move</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>• I can decide which direction three characters will move in and write the correct code to make this happen</li> <li>• I can design my own scene and explain how my code makes the different objects move</li> </ul> |  |
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### 1b Obey my command (E)

In this unit pupils learn to combine start up and input events to create more advanced apps and programs. They learn to give precise instructions.

| National Curriculum  | Key Learning  | Assessment   | PSHCE Links |
|--|---|--|-------------|
| <ul style="list-style-type: none"> <li>• understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</li> <li>• create and debug simple programs</li> <li>• use logical reasoning to predict the behaviour of simple programs</li> <li>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> </ul> | <ul style="list-style-type: none"> <li>• Learn how to combine start events and click events to make a simple game.</li> <li>• Understand that objects can be programmed to do actions at the start or when they are clicked on, and that start and click are events.</li> <li>• Use start events and click events can be used together.</li> <li>• Know how to save and share apps so they can be played on different devices.</li> <li>• Create simple programs using pictures and adding events.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>• I can add my own objects and write code to program them to move</li> <li>• I can design and program an app in which an object moves around the screen at the start</li> </ul> <p><b>Most</b></p> <ul style="list-style-type: none"> <li>• I can add my own objects and write code to program them to move and disappear</li> <li>• I can design and program an app in which objects move in different directions and disappear when they are clicked on</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>• I can design my own scene and explain how my code makes the different objects move, stop or disappear</li> <li>• I can design and program an app and explain how I programmed the objects to do different actions</li> </ul> |             |

### Y1 Word Processing (T)

This Word Processing Skills unit will teach your class basic typing and word processing skills. Children will learn how to type with two hands, use the shift, space and enter key properly, and edit work by using the backspace, delete and arrow keys. Children will then go on to learn how to use undo and redo and to select and format text.

| National Curriculum | Key Learning | Assessment | PSHCE Links |
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|---|---|--|---|
| <ul style="list-style-type: none"> <li>• Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>• Recognise common use of information technology beyond school.</li> </ul> | <ul style="list-style-type: none"> <li>• To use the shift key for capital letters and symbols.</li> <li>• To leave a space between words and keep typing at the end of a line.</li> <li>• To save and open files.</li> <li>• To edit text using the arrow keys, backspace and delete.</li> <li>• To format text using bold, italics and underline.</li> <li>• To change the font style, format the font colour and size of the text.</li> </ul> | <ul style="list-style-type: none"> <li>• I can use shift, space and enter correctly.</li> <li>• I can use undo and redo.</li> <li>• I can make text bold, italic or underline.</li> <li>• I can save their work in their folder.</li> <li>• I can edit text using backspace, delete and the arrow keys.</li> <li>• I can format the font.</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul> |
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### We are collectors - Finding images using the web (RS – 1.4)

In this unit, the pupils will use web search engines to collect pictures of different types of animals and then explore ways in which those pictures can be organised.

| National Curriculum   | Key Learning  | Assessment  | PSHCE Links   |
|---|---|---|---|
| <ul style="list-style-type: none"> <li>• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</li> <li>• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</li> <li>• Recognise common use of information technology beyond school.</li> <li>• 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.</li> </ul> | <ul style="list-style-type: none"> <li>• Find and use pictures on the web.</li> <li>• Know what to do if they encounter pictures that cause concern.</li> <li>• Group images on the basis of a binary (yes/no) question.</li> <li>• Organise images into more than two groups according to clear rules.</li> <li>• Sort (order) images according to some criteria.</li> <li>• Ask and answer binary (yes/no) questions about their images.</li> </ul> | <ul style="list-style-type: none"> <li>• I can look for pictures on the web and know what to do if I am worried.</li> <li>• I can copy, paste and resize pictures.</li> <li>• I know that there are some pictures I can copy and some that I can't.</li> <li>• I can use yes or no questions to find a picture.</li> <li>• I know I shouldn't put my name or a photo of myself on the web.</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul> |

## Year 2

### Espresso Computers & the Internet (Unit 2) and Online & Offline Behaviour (Unit 4)

| National Curriculum  | Key Learning   | Assessment  | PSHCE Links  |
|--|--|---|--|
| <ul style="list-style-type: none"> <li>• Recognise common uses of information technology beyond school</li> <li>• 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</li> </ul> | <ul style="list-style-type: none"> <li>• Understand ways people who have similar likes and interest can get together online</li> <li>• To assess when I need to take action and explain what to do if I'm concerned about my own or someone else's online relationship</li> <li>• Understand how online technology allows access to and communication with global communities</li> <li>• Understand how to search for information about others online</li> <li>• To be able to describe how bullying may change as we grow older and recognise when it is taking place online</li> <li>• Identify and demonstrate actions to support others who are experiencing difficulties online</li> <li>• Understand the internet as a way of finding information online</li> <li>• Know a range of devices to access information on the internet</li> </ul> | <ul style="list-style-type: none"> <li>• I can talk about the internet as a way of finding information online.</li> <li>• I can explain what online bullying is and how to get help.</li> <li>• I can describe some negative effects which may happen from spending too much time online.</li> <li>• I can describe some ways to access the internet and say</li> </ul> | <ul style="list-style-type: none"> <li>• To understand what being online may look like, the different feelings we can experience online and how to identify adults who can help.</li> <li>• To understand that photos can be shared online, the importance of seeking permission before sharing a photo and how to identify and approach adults who can help.</li> <li>• To understand that people online may</li> </ul> |

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|--|--|---|--|
|  | <ul style="list-style-type: none"> <li>• Understand how to use key phrases in search engines to gather accurate information online</li> <li>• To understand why spending too much time using technology can sometimes have a negative impact on anyone (e.g. mood, sleep, body, relationships)</li> <li>• To understand why someone should only share information with people they choose and can trust and know that if they feel pressured they should tell a trusted adult</li> </ul> | <p>which things have a computer and which don't (e.g. tablet, scooter, phone, teddy).</p> | <p>try to manipulate others, how this can make someone feel and how to identify and approach adults who can help. <b>Online Safety Week Plan</b></p> |
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## 2a Different sorts of inputs (E)

In this unit pupils learn that programs respond to different sorts of inputs, and that the keyboard can be used to control objects on screen, not just by clicking them directly.

| National Curriculum   | Key Learning   | Assessment   | PSHCE Links |
|---|--|--|-------------|
| <ul style="list-style-type: none"> <li>• understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</li> <li>• create and debug simple programs</li> <li>• use logical reasoning to predict the behaviour of simple programs</li> <li>• use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>• recognise common uses of information technology beyond school</li> </ul> | <ul style="list-style-type: none"> <li>• Learn how to make an object do simple things with 'key pressed' events.</li> <li>• Learn how to code an object to move around the screen when keys are pressed.</li> <li>• develop an understanding of algorithms.</li> <li>• Understand that events on a tablet device can be different to events on a computer.</li> <li>• Understand and use the terms 'algorithm ' and 'execute ' in a computer programming context.</li> <li>• Understand how programs execute by following precise and unambiguous instructions.</li> <li>• Design and create simple programs.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>• I can design and program an app where an object moves around the screen at the start</li> </ul> <p><b>Most</b></p> <ul style="list-style-type: none"> <li>• I can design and program an app where objects move around and respond to different events by carrying out actions</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>• I can explain how my app works using the words 'algorithm ' and 'execute'</li> </ul> |             |

## 2b Buttons and instructions (E)

In this unit pupils learn that one object can be used to control another object. e.g. writing code so clicking a button gives an instruction to make a lorry move.

| National Curriculum  | Key Learning  | Assessment  | PSHCE Links |
|--|---|---|-------------|
| <ul style="list-style-type: none"> <li>• understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions</li> <li>• create and debug simple programs</li> <li>• use logical reasoning to predict the behaviour of simple programs</li> <li>• recognise common uses of information technology beyond school</li> </ul> | <ul style="list-style-type: none"> <li>• Learn how to program buttons to make different actions happen.</li> <li>• Understand code is written in lines and needs to be precise. Think logically to understand and explain how their code works.</li> <li>• Fix code when there is a problem, and understand that fixing a problem in the code is called debugging.</li> <li>• Design, create and debug simple programs.</li> <li>• Program objects logically with clear instructions and debug code when there is a problem.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>• I can design and program an app in which a button is programmed logically to control an object</li> </ul> <p><b>Most</b></p> <ul style="list-style-type: none"> <li>• I can design and program an app in which buttons are programmed logically to control objects.</li> <li>• I can debug code when there is a problem.</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>• I can explain how code for my app is working</li> <li>• I can explain how I debugged the code when there was a problem.</li> </ul> |             |

## 2.5 We are detectives - Collecting clues (E)

In this unit, the children are challenged to solve a mystery by reading, sending and replying to emails, and by listening to a witness statement. They use a fact file sheet to create a table and identify the culprit.

| National Curriculum   | Key Learning  | Assessment   | PSHCE Links |
|---|---|--|-------------|
| <ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>Recognise common use of information technology beyond school.</li> <li>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.</li> </ul> | <ul style="list-style-type: none"> <li>Understand that email can be used to communicate.</li> <li>Develop skills in opening, composing and sending emails.</li> <li>Gain skills in opening and listening to audio files on the computer.</li> <li>Use appropriate language in emails.</li> <li>Develop skills in editing and formatting text in emails.</li> <li>Be aware of e-safety issues when using email.</li> </ul> | <p>I can write and reply to an email.<br/>           I can check my email for mistakes before I send it.<br/>           I can see if an email and an attachment are from someone I know and trust.<br/>           I can read and understand the headers of an email.<br/>           I know how important it is to type an email address correctly.<br/>           I can see how an email address has two parts.<br/>           I can see that the domain name in an email address gives important information.<br/>           I can take notes from an email in writing or using an audio recorder.<br/>           I can create a simple spreadsheet.<br/>           I can organise a spreadsheet so it shows me the information I need.<br/>           I know that I must always be careful about opening emails and attachments.</p> |             |

## 2.4 We are researchers - Researching a topic (RS)

The children research a topic – safely, effectively and efficiently – using a structured approach (mind mapping). They share their findings with others through a short multimedia presentation.

| National Curriculum   | Key Learning   | Assessment   | PSHCE Links  |
|---|--|--|--|
| <ul style="list-style-type: none"> <li>use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>recognise common uses of information technology beyond school</li> <li>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</li> </ul> | <ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>Recognise common use of information technology beyond school</li> <li>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.</li> </ul> | <ul style="list-style-type: none"> <li>I can use search engines to find information.</li> <li>I know that it is important to say where I found information.</li> <li>I know that there are some images I can copy and some that I can't.</li> <li>I can find images and add them to my presentation.</li> <li>I know how to let someone know if I am worried about something on the web.</li> <li>I can create a presentation that shows my research.</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |



### Year 3

#### **SCARF None of Your Business & Super Searchers**

These units help the children explore online safety. They consider how to decide if they trust a website, some dangers or downloading things and clicking links and what to share and to keep private online. Children also learn about online conduct and how to recognise online bullying.

| National Curriculum  | Key Learning  | Assessment  | PSHCE Links   |
|--|---|---|---|
| <ul style="list-style-type: none"> <li>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>• Recognise acceptable/unacceptable behaviour.</li> </ul> | <ul style="list-style-type: none"> <li>• Understand when and how to speak to an adult if something makes me sad, worried or frightened</li> <li>• Understand that online identity can be different to offline identity</li> <li>• Identify positive ways to interact with others online, in ways that don't upset others, and how this can impact others and their perception of me</li> <li>• Understand why it is important to be considerate and kind to people online and respect their choices</li> <li>• Be able to describe some harmful online situations, e.g. sexual harassment, grooming, cyberbullying</li> <li>• Describe actions someone could take if they experience or are targeted by illegal online behaviour</li> <li>• Understand when to seek permission to do something online and explain why this is important</li> <li>• Know some strategies for assessing the degree of trust I place in people or organisations online</li> <li>• Distinguish between online bullying and teasing (banter) online and give examples to differentiate between them</li> <li>• To recognise more detailed examples of information that is personal to someone (e.g. where someone lives)</li> <li>• To know that accessing some websites or services may increase the risk of encountering viruses and other types of malware and to know what malware is</li> <li>• To know how anyone can adapt their behaviour to engage positively and sensitively with a diverse range of people taking into account gender, cultural sensitivity, political and religious beliefs</li> </ul> | <ul style="list-style-type: none"> <li>• I can describe when and how to speak to an adult if something makes me sad, worried or frightened.</li> <li>• I can say why it is important to be considerate and kind to people online and respect their choices.</li> <li>• I can describe some harmful online situations, e.g. sexual harassment, grooming, cyberbullying.</li> <li>• I can give more detailed examples of information that is personal to someone (e.g. where someone lives).</li> <li>• I can explain what malware is.</li> </ul> | <ul style="list-style-type: none"> <li>• HW22. The importance of protecting personal information, including passwords, addresses and the distribution of images of themselves and others</li> <li>• LWW17. To explore and critique how the media present information</li> <li>• To know about different online scams, including what 'phishing' means.</li> <li>• To respect online privacy boundaries for themselves and others</li> <li>• To seek or ask for help if they or others feel unsafe online</li> <li>• To manage and respond in a healthy and safe way to hurtful online behaviour</li> <li>• To know how to make strong passwords to secure their information online</li> <li>• To know ways in which they can be 'kind' to others online.</li> <li>• To know what having a positive digital footprint means</li> </ul> |

### Y3 Word Processing (T)

Children will learn to use various features for formatting text and images so they can be combined in a purposeful. Safe searching and the need for important passwords are also explored.

| National Curriculum   | Key Learning  | Assessment   | PSHCE Links  |
|---|---|--|--|
| <ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>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.</li> </ul> | <ul style="list-style-type: none"> <li>Align and format text.</li> <li>Copy a screenshot into another application.</li> <li>Use a secure password.</li> <li>Use &lt;ctrl&gt; keyboard shortcuts.</li> <li>Insert and format images.</li> <li>Use bullets and numbering effectively.</li> <li>Insert and format text boxes effectively.</li> </ul> | <ul style="list-style-type: none"> <li>I can create secure passwords and take screenshots.</li> <li>I can search create and organise files and folders.</li> <li>I can use &lt;shift&gt;, &lt;CAPS LOCK&gt; and &lt;space&gt; correctly.</li> <li>I can edit using &lt;backspace&gt;, &lt;delete&gt;, the arrow keys, undo and redo.</li> <li>I can align, select and format text and use the change case button.</li> <li>I can use and format bullets and numbering.</li> <li>I can insert and format text boxes.</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |

### 3a Sequence and animation (E)

In this unit pupils learn to make things happen in a sequence, creating simple animations and simulations.

| National Curriculum  | Key Learning   | Assessment  | PSHCE Links |
|--|--|---|-------------|
| <ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> </ul> | <ul style="list-style-type: none"> <li>To program a sequence of actions, making different pieces of code execute at different times</li> <li>To program a sequence of objects to appear and disappear at specific times to simulate a physical system.</li> <li>To use time to program a sequence of actions and make simple animation.</li> <li>To design and write an app; practise using time in code to create an animation.</li> <li>To use logical reasoning to explain how algorithms work and detect and correct errors as they work.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>I can design and create an app that programs an object to perform an action at a specific time</li> </ul> <p><b>Most</b></p> <ul style="list-style-type: none"> <li>I can design and create an app that programs objects to perform actions at specific times</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>I can explain how my code executes and how I found errors and debugged the code when there was a problem</li> </ul> |             |

### 3b Conditional events – selection (E)

Pupils learn to code with 'if statements', which select different pieces of code to execute depending on what happens to other objects.

| National Curriculum  | Key Learning  | Assessment   | PSHCE Links |
|--|---|--|-------------|
| <ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>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</li> </ul> | <ul style="list-style-type: none"> <li>To understand that objects can be programmed to respond to their background or environment using conditional 'if' statements.</li> <li>To understand how conditional events are used in computer programming.</li> <li>To understand that inputs on a tablet can be different to inputs on a computer.</li> <li>To use computational thinking to plan, design and write code.</li> <li>To use logical reasoning to explain algorithms and to detect and correct errors.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>I can design and create an app in which an object moves around the screen in different directions</li> </ul> <p><b>Most</b></p> <ul style="list-style-type: none"> <li>I can design and create an app and program a conditional event into my code</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>I can explain how each line of code in my app works and how I debugged the code when there was a problem</li> </ul> |             |

#### Year 4

### SCARF Crack the Code & Picture Wise

| National Curriculum  | Key Learning   | Assessment   | PSHCE Links  |
|--|--|--|--|
| <ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>Recognise acceptable/unacceptable behaviour.</li> </ul> | <ul style="list-style-type: none"> <li>Recognise that there may be people online who could make someone feel sad, embarrassed or upset</li> <li>Understand that anyone can curate and experiment with their online identity and why they might wish to do this</li> <li>Understand what 'autonomy' means when it comes to the things I share and choose to engage with online</li> <li>To reflect and assess the role that digital media plays in my life and give examples of where it benefits my lifestyle</li> <li>To know how to support others in need online and offline, both publicly and privately</li> <li>Be able to explain that things one person finds funny or sad online may not always be seen in the same way by others</li> <li>Understand strategies for safe and fun experience in a range of online social environments (e.g. livestreaming, gaming platforms)</li> <li>Understand how content shared online may feel unimportant to one person but may be</li> </ul> | <ul style="list-style-type: none"> <li>I can give strategies for safe and fun experience in a range of online social environments.</li> <li>I can explain why we have a collective responsibility to gain consent before sharing or forwarding information online (e.g. personal details, images etc).</li> <li>I can give examples of what information should not be put online without asking an adult first.</li> </ul> | <ul style="list-style-type: none"> <li>HW21. Strategies for keeping physically and emotionally safe including road safety (including cycle safety-the Bikeability programme), safety in the environment (including rail, water and fire safety), and safety online (including social media, the responsible use of ICT and mobile phones)</li> <li>HW22. The importance of protecting personal information, including passwords, addresses and the distribution of images of themselves and others</li> <li>R14. To realise the nature and consequences of discrimination, teasing,</li> </ul> |

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|  | <p>important to other people's thoughts, feelings and beliefs</p> <ul style="list-style-type: none"> <li>• Understand the importance of having a choice and giving others a choice online</li> <li>• Understand ways someone can give, gain or deny consent online and know why context is important for assessing this</li> <li>• Understand that we have a collective responsibility to gain consent before sharing or forwarding information online (e.g. personal details, images etc)</li> <li>• Understand how consent can be mistakenly assumed (e.g. within established friendship) and demonstrate how to appropriately challenge this</li> <li>• To know that information can stay online and can be copied</li> <li>• To know what information should not be put online without asking an adult first</li> <li>• Understand how to tell if someone is upset, hurt or angry online</li> <li>• Describe how people can be bullied through a range of media</li> </ul> |  | <p>bullying and aggressive behaviours(including cyber bullying, use of prejudice-based language, how to respond and ask for help)</p> <ul style="list-style-type: none"> <li>• LWW6. To realise the consequences of anti-social and aggressive behaviours such as bullying and discrimination of individuals and communities</li> </ul> <p><b><u>Online Safety Week Plan</u></b></p> <ul style="list-style-type: none"> <li>• To identify and explain some risks in sharing videos publicly.</li> <li>• To explain what privacy settings are used for and how they can help.</li> <li>• To recognise when something encountered online 'doesn't feel right'.</li> <li>• To identify and resist pressurising and manipulative behaviour.</li> <li>• To give examples of how a child's online actions can affect others.</li> <li>• To give examples of content which may be appropriate or inappropriate to share online.</li> <li>• To explain the possible consequences of sharing without consent.</li> <li>• To identify appropriate people to turn to for help.</li> <li>• To identify different tactics someone might use to manipulate another person online.</li> <li>• To explain what to do if someone tries to pressure or manipulate them.</li> <li>• To share ideas about how technology can be used positively.</li> </ul> |
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### Internet research and communication (Y3 T)

This unit focuses on how to effectively search using key words and how to safely communicate online. Pupils will understand the importance of word order when searching, start to examine the results returned and how to distinguish between a reliable and unreliable website or webpage. Children will learn to save webpages in a browser, as well as in a file or folder. Pupils will identify ways of communicating online, how they can keep safe and the importance of being responsible while communicating online with others.

| National Curriculum  | Key Learning  | Assessment   | PSHCE Links  |
|--|---|--|--|
| <ul style="list-style-type: none"> <li>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>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.</li> </ul> | <ul style="list-style-type: none"> <li>I can identify how word order affects search results</li> <li>I can explain how searches return results.</li> <li>I can save and share webpages.</li> <li>I can identify the ways, and investigate how, we communicate online.</li> <li>I can explain how to stay safe when communicating online.</li> <li>I know what to do when I receive a communication that makes me feel uncomfortable.</li> <li>I can explain why I need to be responsible online.</li> </ul> | <ul style="list-style-type: none"> <li>To know and understand how word order affects the results returned.</li> <li>They will know how to bookmark or favourite a page and name different types of online communication.</li> <li>Children will know what to do if they feel uncomfortable when communicating online.</li> <li>They will be able to identify how they should behave online.</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |

### Y4 Presentation Skills (Y3 T)

The children learn to set the theme, slide transitions, animating objects onto the slide, creating hyperlinks in the action settings and adding audio and video.

| National Curriculum   | Key Learning   | Assessment  | PSHCE Links  |
|---|--|---|--|
| <ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>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.</li> </ul> | <ul style="list-style-type: none"> <li>Create a story with different outcomes and organise them into different branches.</li> <li>Use hyperlinks to navigate from slide to slide.</li> <li>Add theme, transitions and animation to a presentation.</li> <li>Insert audio and video and change the audio button.</li> <li>Evaluate slide layout and make improvements.</li> </ul> | <ul style="list-style-type: none"> <li>I can create a hyperlink to another slide and use slide transitions.</li> <li>I can use animations to introduce objects to a slide</li> <li>I can set when the audio or video plays</li> <li>I can evaluate the layout of presentation slides effectively</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |

#### 4a Introduction to variables (E)

In this unit pupils learn how computers use variables to count things and keep track of what is going on. Pupils learn to create simple games which use a score variable.

| National Curriculum  | Key Learning  | Assessment   | PSHCE Links |
|--|---|--|-------------|
| <ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul> | <ul style="list-style-type: none"> <li>Use variables to keep track of the score in a game; practise using conditional events in your code</li> <li>Learn how to design and make your own app.</li> <li>Practise using variables and conditional events in code.</li> <li>Debugging code when there is a problem.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>I can write code which includes a variable that will increase in value when a condition is met.</li> <li>I can design and create an app in which an object moves around the screen in different directions</li> </ul> <p><b>Most</b></p> <ul style="list-style-type: none"> <li>I can program the value of a variable to increase by different amounts when different conditions are met.</li> <li>I can design and create an app which uses variables and conditions when it runs.</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>I can add a time limit to my app and explain how I have used a variable to keep the score.</li> <li>I can explain how I debugged the code when there was a problem.</li> </ul> |             |

#### 4b Repetition and loops (E)

Pupils learn how computers use repetition and loops to do things over and over again (and again!).

| National Curriculum  | Key Learning   | Assessment   | PSHCE Links |
|--|--|--|-------------|
| <ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul> | <ul style="list-style-type: none"> <li>To use a loop to do something repeatedly in a program (timer, stopwatch, animation).</li> <li>To design and make your own app. Practice using repetition and loops in code and debugging code when there is a problem.</li> </ul> | <p><b>All</b></p> <ul style="list-style-type: none"> <li>I can use variables, loops and conditional statements in my code.</li> <li>I can design and create an app in which an object moves around the screen in different directions.</li> </ul> <p><b>Most</b></p> <ul style="list-style-type: none"> <li>I can program stop, start and reset buttons.</li> <li>I can design and create an app and use repetition and loops in my code.</li> </ul> <p><b>Some</b></p> <ul style="list-style-type: none"> <li>I can set a time condition to make my timer stop and explain why it is more efficient to use a loop than lots of 'after' time events.</li> <li>I can design an app to solve a challenge, explain how my app works and how I debugged the code when there was a problem</li> </ul> |             |

**SCARF Risks & Consequences, Facebook Friends, Think Before You Click & To Share or Not to Share**

| National Curriculum  | Key Learning   | Assessment  | PSHCE Links   |
|--|--|---|---|
| <ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>Recognise acceptable/unacceptable behaviour.</li> </ul> | <ul style="list-style-type: none"> <li>Understand that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this</li> <li>Recognise how the internet and social media can be used for positive self-promotion</li> <li>Understand the reputational benefits and risks in the way I represent myself online, and explain strategies to manage this</li> <li>Be aware that a person's online activity, history or profile will affect the type of information returned to them in a search on social media feed, and how this may be intended to influence their beliefs, actions and choices</li> <li>Understand how messages online portraying 'identity ideals' can inhibit someone from being themselves online or sharing things openly</li> <li>Understand the social norms and expectations that influence how we identify ourselves online (e.g. profile pictures, shared content) and how it might differ according to gender, culture and social group</li> <li>Know how to find out information about others by searching online</li> <li>Understand ways that the information about anyone online could have been created, copied and shared by others</li> <li>Understand how the information online services hold about someone forms part of their 'online identity' and how this differs from their digital personality</li> <li>Understand what is appropriate to say and do in different online settings/ platforms (e.g. opinions, values, information, shares, 'likes', forwards)</li> <li>Understand how what anyone writes online can also affect their school, family or social group, or future opportunities</li> <li>Understand how aspects of someone's online identity can be linked together, and while something may be shared privately, it could have an impact later, personally and professionally</li> <li>Be able to explain the importance of someone's online reputation (especially to their future career) and describe ways of managing this</li> <li>Understand why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them</li> <li>Recognise a range of different bullying types and behaviours and assess when these are occurring (e.g. homophobia, racism, gender discrimination, sexism, ableism, exclusion of others from online forms of communication, setting up fake profiles of another person)</li> <li>Understand that anyone experiencing online abuse is never to blame (e.g. victim</li> </ul> | <ul style="list-style-type: none"> <li>I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.</li> <li>I can describe what is appropriate to say and do in different online settings/ platforms (e.g. opinions, values, information, shares, 'likes', forwards).</li> <li>I can explain and give examples of how what anyone writes online can also affect their school, family or social group, or future opportunities.</li> <li>I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them.</li> <li>I can give rules to keep myself safe when using technology both in and beyond the home.</li> </ul> | <ul style="list-style-type: none"> <li>HW22. The importance of protecting personal information, including passwords, addresses and the distribution of images of themselves and others</li> <li>Are we spending too much time online? (resilience week plan)</li> <li>What does it mean to know somebody or have a friend online?</li> <li>Does cyber-bullying have less impact on a person, than face to face bullying?</li> <li>Is it acceptable to cyber-bully if it is anonymous?</li> <li>Can peer pressure affect the way that you behave in situations, both online and in person? (friendship/anti-bullying plan)</li> </ul> <p><b><u>Online Safety Week Plan</u></b></p> <ul style="list-style-type: none"> <li>To be a critical consumer while online</li> <li>To develop respectful, empathetic and healthy online relationships.</li> <li>To develop safe habits online, including the importance of protecting personal information</li> <li>To know how to protect</li> </ul> |

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|  | <p>blaming) and that to suggest they are wrong</p> <ul style="list-style-type: none"> <li>Identify and assess behaviours that might be seen as bullying in different online contexts and adjust my own behaviour accordingly</li> <li>Understand how to find information using digital technologies</li> <li>Understand that we encounter a range of things online including things we like and don't like as well as things which are real or make believe/ a joke</li> <li>Know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened</li> <li>Understand what autocomplete is and how to choose the best suggestion</li> <li>Understand and know rules to keep myself safe when using technology both in and beyond the home</li> <li>Understand why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or websites)</li> <li>Understand that technology can be a distraction from other things in both a positive and negative way</li> <li>Know the importance of self-regulating technology use</li> <li>Know that passwords are used to protect information, accounts and devices</li> <li>Understand the importance of asking a trusted adult before sharing personal information online, belonging to myself or others</li> <li>Be able to give reasons why someone should only share information with people they choose to and can trust and know to tell a trusted adult if they are not sure or feel pressured</li> <li>Know strategies for keeping personal information private, depending on context</li> <li>Understand that internet use is never fully private and is monitored</li> </ul> |  | <p>their online reputation</p> <ul style="list-style-type: none"> <li>To work out whether information online is true and reliable</li> <li>To know ways in which they can start to build a positive digital footprint</li> </ul> <p><b>Finance Week</b></p> <ul style="list-style-type: none"> <li>Define what is meant by the term stereotype;</li> <li>Recognise how the media can sometimes reinforce gender stereotypes;</li> <li>Recognise that people fall into a wide range of what is seen as normal;</li> <li>Challenge stereotypical gender portrayals of people, particularly those relating to the work place.</li> </ul> |
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### 3.4 We are network engineers - Exploring computer networks, including the internet (RS)

Pupils investigate how computer networks work. They use a simulation and learn some simple command prompt (C:) tools for testing network connections.

| National Curriculum   | Key Learning  | Assessment   | PSHCE Links  |
|---|---|--|--|
| <ul style="list-style-type: none"> <li>Understand computer networks, including the internet; how they can provide multiple services.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul> | <ul style="list-style-type: none"> <li>Understand the physical hardware connections necessary for computer networks to work.</li> <li>Understand some features of internet protocols.</li> <li>Understand some diagnostic tools for investigating network connections.</li> <li>Develop a basic understanding of how domain names are converted to IP addresses.</li> </ul> | <ul style="list-style-type: none"> <li>I can name and describe the way hardware works to connect computers.</li> <li>I can describe how data passes across the internet.</li> <li>I can use and describe how the ping, ipconfig and tracert commands are used.</li> <li>I can talk about some of the different ways data is</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |



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|  |  | <p>passed across the internet.</p> <ul style="list-style-type: none"> <li>• I understand how networks keep me safe online.</li> <li>• I understand the need to be careful about sharing things about myself on the internet.</li> </ul> |  |
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### 5a Speed, Direction and co-ordinates (E)

In this unit pupils learn how computers use numbers to represent things such as how fast things are moving, and where they are.

| National Curriculum  | Key Learning  | Assessment   | PSHCE Links |
|--|---|--|-------------|
| <ul style="list-style-type: none"> <li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul> | <ul style="list-style-type: none"> <li>• To develop an understanding of the relationship between values used in code and the action of the object they relate to.</li> <li>• To set values in code to program the speed of an object.</li> <li>• To work iteratively and explore what it means to use computational thinking to solve challenges.</li> <li>• To assign values in code to control the movement of objects.</li> <li>• To make an object rotate to the orientation (angle) of an iPad.</li> <li>• To design, create and debug programs.</li> <li>• To use logical reasoning to explain how their code executes</li> </ul> | <p>All</p> <ul style="list-style-type: none"> <li>• I can design and create an app in which I assign values to control how objects move.</li> </ul> <p>Most</p> <ul style="list-style-type: none"> <li>• I can design and create an app and use coordinates in my code.</li> </ul> <p>Some</p> <ul style="list-style-type: none"> <li>• I can use computational thinking to design and create an app that solves a challenge, and explain how my app works.</li> </ul> |             |

### 5b Random numbers and simulations (E)

In this unit pupils learn how computers can generate random numbers and how these can be used in simulations.

| National Curriculum  | Key Learning   | Assessment  | PSHCE Links |
|--|--|---|-------------|
| <ul style="list-style-type: none"> <li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul> | <ul style="list-style-type: none"> <li>• To understand that the value of a variable can be programmed to generate randomly and change in response to an event or at set time intervals.</li> <li>• To use variables and conditional events in code.</li> <li>• To distinguish between times when use of a random number in code is effective and times when it is more appropriate to set a value.</li> <li>• To design, create and debug programs.</li> <li>• To use logical reasoning to explain how their code executes.</li> </ul> | <p>All</p> <p>I can design and create an app in which random numbers control how objects move.</p> <p>Most</p> <p>I can develop an app by adding random numbers to make objects move or change location randomly, increasing the challenge.</p> <p>Some</p> <p>I can use computational thinking to design and create an app that uses random numbers, and explain how my app works.</p> |             |

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### HTML Unit 1 – Introduction to HTML (E)

Learn about tags and how to add text and images to HTML webpage.

| National Curriculum   | Learning Objective  | Assessment  | PSHCE Links  |
|---|---|---|--|
| <ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</li> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> </ul> | <ul style="list-style-type: none"> <li>Explain and identify different tags.</li> <li>Learn how to apply knowledge of HTML to create a web page using headings, paragraphs and images.</li> <li>Learn more about how web developers structure their web pages using HTML standards.</li> <li>Explain what a style selector is and why they are useful when designing a webpage.</li> </ul> | <ul style="list-style-type: none"> <li>I can identify opening and closing tags.</li> <li>I can select and sequence code, adding images and text to create a simple program in HTML</li> <li>I understand and can use heading tags, paragraph tags and image tags together to create a web page</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |

### HTML Unit 2 – Formatting (E)

Learn how to change the font size and colour format an HTML page.

| National Curriculum  | Key Learning  | Assessment   | PSHCE Links  |
|--|---|--|--|
| <ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul> | <ul style="list-style-type: none"> <li>Learn how to change the colour of text using the colour property.</li> <li>Learn how to change the colour, size and font of text using the font-size and font-family properties.</li> <li>Learn how to change the 'background', 'margin' and 'padding' properties of different parts of a web page.</li> <li>Learn how web developers structure their pages and HTML standards.</li> </ul> | <ul style="list-style-type: none"> <li>I can understand that styles affect the design of the web page</li> <li>I can control the appearance of text using the 'font-family', 'font-size' and colour properties</li> <li>I can understand how to use a style section to control the 'background-color', 'margin' and 'padding' of all paragraph tags</li> <li>I can understand why HTML has precise standards and how to implement some of these</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |

### HTML Unit 3 – Links (E)

Learn how to create hyperlinks to other web pages, including: other websites; ready-made pages and simple project pages, which are divided into linked sections.

| Overview | Learning Objective | Assessment | PSHCE Links |
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| <ul style="list-style-type: none"> <li>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul> | <ul style="list-style-type: none"> <li>Learn how to make a page with anchor tags and section IDs to navigate within the page.</li> <li>Make a web page combining divs, images and anchor links.</li> <li>Create a web page that combines the use of div tags, styles and anchor links.</li> </ul> | <ul style="list-style-type: none"> <li>I can make their own index page using links, and organise it by inserting line breaks</li> <li>I can understand how to turn an image into a link and create images with relative and absolute links</li> <li>I can explain what an anchor tag is, and how to use one together with an ID</li> <li>I can understand how a div can be used to separate a page into sections</li> <li>I can structure a web page and input their own content</li> <li>I can apply styling to sections of the page</li> <li>I can demonstrate how to use anchor links to build navigation within a web page</li> </ul> | <ul style="list-style-type: none"> <li></li> </ul> |
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## Year 6

### SCARF 'Traffic Lights' and Think U Know 'Send Me a Pic'

| National Curriculum  | Key Learning   | Assessment  | PSHCE Links   |
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| <ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>Recognise acceptable/unacceptable behaviour.</li> </ul> | <ul style="list-style-type: none"> <li>Understand why it is important to balance 'keeping an open mind' with critically evaluating what ideas, opinions or beliefs I accept and reject and why I may need to re-evaluate if new evidence emerges</li> <li>Learn how to appropriately challenge negative comments or expectations concerning my online identity</li> <li>Understand how to make positive contributions to others' self identity, where appropriate (e.g. avoiding negative comments or positive commentary on profile pictures)</li> <li>Understand how to be respectful to others online and be able to recognise healthy</li> </ul> | <ul style="list-style-type: none"> <li>I can describe some ways to be respectful to others online and be able to recognise healthy and unhealthy online behaviours.</li> <li>I can give examples of effective strategies which might help myself or others experiencing difficulties online.</li> </ul> | <ul style="list-style-type: none"> <li>Can we really build purposeful connections online? (5 ways to wellbeing – connect)</li> <li>What does it mean to know somebody online and can they be a true friend?</li> <li>Does cyber-bullying have less impact on a person, than face to face bullying?</li> <li>Is it acceptable to cyber-bully if</li> </ul> |

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|  | <p>and unhealthy online behaviours</p> <ul style="list-style-type: none"> <li>• Be able to describe the benefits of communicating with a partner online</li> <li>• I know that relationships can be safely started, developed, maintained, changed or ended online</li> <li>• Recognise harmful language of a discriminatory nature and harassment online and who can support if this occurs (e.g. homophobia, name-calling, threatening to 'out' someone, threatening violence)</li> <li>• To recognise healthy and unhealthy behaviour in relationships and assess when the use of technology is becoming coercive and/or controlling (e.g. obsessive communication via online platform or text, using location apps to monitor and manipulate) and know strategies for getting help and support</li> <li>• Understand some ways someone can manage what others can say and share about them and explain strategies to protect an individual's 'digital personality'</li> <li>• Know how to appropriately challenge content or behaviour that may have a negative impact on someone's online reputation</li> <li>• Know some ways how someone could intervene to support others who are experiencing difficulties online</li> <li>• Be able to give examples of effective strategies which might help myself or others</li> <li>• Be able to identify bullying behaviours in a variety of online contexts and work cooperatively with others to challenge those behaviours and prevent them recurring</li> <li>• To know what content is illegal to view and share online, be able to describe some of the laws governing online illegal content and to know that this can vary from country to country</li> <li>• To be able to justify why laws around age related access to certain types of online content exist and assess their limitations and benefits (e.g. gaming, gambling, alcohol/drugs related, sexual content)</li> <li>• To identify some times or situations when someone may need to limit the amount of time they use technology</li> </ul> |  | <p>it is anonymous?</p> <ul style="list-style-type: none"> <li>• Can peer pressure affect the way that you behave in situations, both online and in person? (friendship/anti-bullying plan)</li> </ul> <p><b><u>Online Safety Plan</u></b></p> <ul style="list-style-type: none"> <li>• To be a critical consumer while online</li> <li>• To develop respectful, empathetic and healthy online relationships.</li> <li>• To develop safe habits online, including the importance of protecting personal information</li> <li>• To know how to protect their online reputation</li> <li>• To work out whether information online is true and reliable</li> <li>• To know ways in which they can start to build a positive digital footprint</li> </ul> <p><b><u>Finance Week</u></b></p> <ul style="list-style-type: none"> <li>• Recognise common risks associated with money, including debt, fraud and gambling online</li> <li>• Recognise how money can be gained or lost e.g. stolen, through scams or gambling online and how these put people at financial risk</li> </ul> |
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|  | <ul style="list-style-type: none"> <li>• Recognise and discuss the pressures that technology can place on someone</li> <li>• Understand how someone might recognise that they need support to manage their use of technology and who might provide support</li> <li>• To know strategies to identify and evaluate help from established sites or organisations that may be helpful or sites or groups that could negatively impact on well-being</li> <li>• I know the differences between active, passive and assumed consent online</li> </ul> |  |  |
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## Y6 Spreadsheets (T)

Using different spreadsheet templates, they learn skills in formatting and entering specific formulas. They then use investigative skills to solve specific problems. Examples include number calculations, sports league tables, test scores and budget planning.

| National Curriculum   | Key Learning  | Assessment  | PSHCE Links   |
|---|---|---|---|
| <ul style="list-style-type: none"> <li>• 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.</li> </ul> | <ul style="list-style-type: none"> <li>• To identify cells using rows and columns and enter data.</li> <li>• To use formulas to calculate totals and averages and the fill tool to copy formulas correctly.</li> <li>• To sort data by different criteria and add extra data, including inserting rows or columns.</li> <li>• To edit existing data and be aware of the results.</li> <li>• To use a spreadsheet to solve problems.</li> <li>• To check calculations for errors.</li> <li>• To interpret data and make comparisons.</li> <li>• To be able to explain how online content can limit our autonomy</li> </ul> | <ul style="list-style-type: none"> <li>• Identify and refer to cells by row and column.</li> <li>• Begin to enter formulae with the SUM function.</li> <li>• Edit data and discuss the effect on results.</li> <li>• Understand the advantages of spreadsheets over comparative manual methods.</li> <li>• Select data and create graphs with appropriate formatting.</li> <li>• Design their own spreadsheet for a specific purpose and present it appropriately.</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul> |

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|  | <p>by influencing people's thinking, beliefs, feelings and responses</p> <ul style="list-style-type: none"> <li>• To be able to explain how online content can be shapes and targeted to influence body image, purchasing choices, and behaviour</li> <li>• To be able to explain why some social media influencers promoting products and lifestyle can be 'virtual' and not real people</li> <li>• To be able to explain what is meant by artificial intelligence (AI) and how it can harvest my identity and shape my online experiences</li> <li>• To know some ways someone can use the internet and social media for positive self-promotion, including enhancing future employment prospects</li> <li>• To know how and why some people may try and influence others negatively, such as sharing racist/homophobic comments, sharing weight-loss products, grooming, radicalisation and coercion</li> </ul> |  |  |
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## Python (E)

Learn how to change the font size and colour format an HTML page.

| National Curriculum   | Key Learning  | Assessment   | PSHCE Links   |
|---|---|--|---|
| <ul style="list-style-type: none"> <li>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</li> <li>• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> </ul> | <ul style="list-style-type: none"> <li>• To print lines of text on screen</li> <li>• To do simple Python calculations</li> <li>• To use variables in Python</li> <li>• To debug problems in Python</li> <li>• To use turtle graphics in Python</li> <li>• To draw shapes using code in Python</li> <li>• To combine loops in Python</li> <li>• To create functions in Python</li> </ul> | <ul style="list-style-type: none"> <li>• I can calculate using Python</li> <li>• I can draw shapes using turtle</li> <li>• I can combine loops</li> <li>• I can debug simple errors</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul> |

\* Online Safety Key learning statements taken from Education for a Connected World -2020 edition (UK Council for Internet Safety)