

Mundeford Community Infants School



LONG TERM SUBJECT MAP – COMPUTING

Aims of a learner in computing leaving our school

- understand logic, algorithms and data representation
- analyse problems in computational terms (through coding lessons), and write computer programs (through coding lessons) in order to solve such problems
- be responsible, competent, confident and creative users of information and communication technology across the programme of study
- understand some of the benefits computing technology can bring to their lives and society as a whole.
- understand the importance of connecting with others on digital platforms in a safe and positive way as well as knowing what to do if they see something that is not for them

The National Curriculum says:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Reception

Computer Science Robots	Information Technology						Digital Literacy
	Trackpad skills	Drawing skills	Keyboard skills	Photography	Sounds	Quizzes	
Describe where a toy vehicle is moving	Move the cursor and click on an icon	Select a colour Draw pictures and images	Find any letter of the alphabet to type	Take a photo Use a webcam / video app	Make music on a device Add sound effects	Complete a multiple choice quiz	Technology all around us
Describe the route a toy vehicle takes	Move images or icons on a screen (eg: as part of puzzle games) as a	Change brush	Use the spacebar between two words	Open photos	Record speaking and play back the sounds	Play games that ask questions	Safety and Privacy Using PurpleMash with an individual log in

Plan a route for a toy vehicle	prerequisite to drag and drop	Use the undo button	Use backspace to delete only what is needed			Complete a sequencing quiz	look at websites with the teacher and discuss what they see
Follow a plan for the route of the toy vehicle	Independently navigate simple educational apps or web based content (eg: Purplemash - minimash / Numbots / BBC games)	Use the erase button	Type using numbers			Select an answer in a quiz	stay within the activities provided by the adult on the device
Make a floor robot move		Use touchscreen	Use enter to start a new line			Complete a matching quiz	tell an adult if I see something that I am unsure about
Control forwards and backwards and the turn of a floor robot			Write their name and any log in details				
Program with at least 2 instructions							

Themes	Year 1 Key learning Prior learning	Year 2 Key learning Prior learning
Computer Science	<ul style="list-style-type: none"> Know that an algorithm is a set of instructions used to solve a problem or achieve an objective. (1.2, 1.4, 1.7) Know that an algorithm written for a computer is called a program. (1.2, 1.4, 1.7) Use code to make a computer program (1.7) Work out what is wrong with a simple algorithm when the steps are out of order, (eg: <i>The Wrong Sandwich in Purple Mash</i>) (1.4) Write their own simple algorithm (eg: <i>colouring in a bird activity</i>). (1.4, 1.7) Know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code (eg: <i>Bubbles activity in 2code</i>) (1.4, 1.5) Read code one line at a time and make good attempts to predict the picture of the overall effect of the program. <i>Interpret where the turtle in 2Go challenges will end up at the end of the program.</i> (1.4, 1.5, 1.7) 	Unit 2.1 (Autumn 2) <ul style="list-style-type: none"> Explain that an algorithm is a set of instructions to complete a task. When designing simple programs, be precise with algorithms so that they can be successfully converted into code. Create a simple program that achieves a specific purpose. Identify and correct some errors, e.g. <i>Debug Challenges: Chimp</i>. Program designs use logical, programmable steps. Identify the parts of a program that respond to specific events and start off specific actions. <i>For example, they can write or say a cause and effect sentence of what will happen in a program</i>

Information Technology	<ul style="list-style-type: none"> • Sort, collate, edit and store simple digital content (1.2) • Collect, represent and interpret data (<i>eg: 2count</i>) (1.3) • Name, save and retrieve content (<u>all units</u>) • Follow simple instructions to purposefully access online resources, <i>use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds), 2Create or using pictogram software such as 2count.</i> (1.6, 1.8) • Drag and drop content as necessary (1.8) 	<ul style="list-style-type: none"> • Collect and organise data using, for example, a database <i>such as 2Investigate</i> and gather specific data for answering simple questions (2.3, 2.4) • Understand and use features of a computer drawing program (<i>eg: colour palette and paint effect</i>) to create a picture <i>eg: 2Paint</i> (2.6) • Edit and create digital sounds <i>such as music compositions within 2Sequence.</i> (2.7) • Create, name, save and retrieve content. (2.3, 2.4, 2.7, 2.8) • Use a range of media in digital content including clipart, text, font tools (2.8) • Share knowledge digitally, <i>e.g. 2Publish example template.</i> (2.8) • Make links between technology they see around them, coding and multimedia work they do in school <i>e.g. animations, interactive code and programs.</i> (all units)
Digital Literacy	<ul style="list-style-type: none"> • Identify a variety of digital technology both in and out of school and explain how it is helpful (1.9) • It is important to log in and out of a site safely and the importance of keeping information such as username and passwords private (1.1) • Take ownership of their work and save this in their own private space <i>such as their My Work folder on Purple Mash.</i> (1.1) • By making their own avatar, understand that it is a virtual representation of them suitable for use online (1.1) 	<p>Online Safety: (Autumn 1)</p> <ul style="list-style-type: none"> • Explain why a search on the Internet may not be a safe search (2.2) • Understand how things are shared electronically <i>such as posting work to the Purple Mash display board.</i> (2.2) • Understand email and how to send it safely <i>by using 2Respond / 2email activities on Purple Mash</i> (2.2) • Know to tell a trusted adult if they search for something the results are inappropriate or upsetting. (2.2) • Keep personal information private (2.2) <p>Effective searching:</p> <ul style="list-style-type: none"> • Use a web browser and search engine to research specified information (2.5)