

Mundeford Community Infants School



SUBJECT MAPPING – COMPUTING

The National Curriculum says:

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. 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.

In order to achieve this by the end of Key Stage One at Mundeford Infant School:

Our children are continuously amazed by the many wondrous benefits computing technology can bring to their lives and society as a whole. Therefore, finding out all about simple programming allows our children to develop a wide range of knowledge and skills in using logic, problem solving, following algorithms and being creative. Our children 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.

- By using the web based software PurpleMash that provides an entire suite of lessons for the national curriculum in computing
- Devices and tablets will be used at meaningful opportunities throughout the day eg: Chromebooks, Tablets, Beebots,

Aims of a learner leaving our school: (to be assessed throughout KS1)

- understand and apply the fundamental principles and concepts of computer science, including abstraction (modelling), 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

Knowledge Acquiring & Skills Development

- 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.

Sequence of Learning – When and how do we facilitate this learning in our school?		
Reception	Year 1	Year 2
<p>Children in Reception have regular access and exposure to a range of devices within their plan, work, recall sessions. Adults support children on their journey to independently use devices in a range of meaningful ways so they leave Reception with the necessary knowledge and skills that can be used to further develop their learning within computing. They will understand how technology can play an important role in their future learning. Through project based opportunities, adults will help children to learn to:</p> <ul style="list-style-type: none"> look at websites with the teacher and discuss what they see independently navigate simple educational apps or web based content (eg: Purplemash - minimash / Doodlemaths / BBC games) use art software (2paint) to create shapes and simple images describing how they did it and what they have drawn. (change colour, change brush and use an eraser according to the image being created) move images or icons on a screen (eg: as part of puzzle games) as a prerequisite to drag and drop On a keyboard, write their name and any log in details. use the spacebar, back space, enter add words to a picture (use 2story) When controlling and modelling, they understand forwards, backwards, up and down. (eg: beebots or computer alternatives within games on PurpleMash) put together at least 2 instructions to control a programmable toy. use technology for purpose in learning (eg: taking a photo, videoing a puppet show / small world, basic research with the support of an adult ie: animal images and facts) 	<p>In Key Stage 1 children will develop their knowledge of computing in discrete lessons on a typically weekly basis.</p> <ul style="list-style-type: none"> Know that an algorithm is a set of instructions used to solve a problem or achieve an objective. Know that an algorithm written for a computer is called a program. 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>) and can write their own simple algorithm (eg: <i>colouring in a bird activity</i>). 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>) Read code one line at a time and make good attempts to envision 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> Sort, collate, edit and store simple digital content - name, save and retrieve and follow simple instructions to access online resources, use <i>Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2count.</i> Identify a variety of digital technology both in and out of school. Understand the importance of keeping information, such as their username and passwords, private and actively demonstrate this in lessons. Take ownership of their work and save this in their own private space such as their <i>My Work folder on Purple Mash.</i> 	<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> Organise data using, for example, a database such as <i>2Investigate</i> and gather specific data for conducting simple searches. Edit digital data such as <i>music compositions within 2Sequence.</i> Create, name, save and retrieve content. Use a range of media in digital content including photos, text and sound. Find relevant, purposeful digital content using a search engine. Share knowledge digitally, e.g. <i>2Publish example template.</i> Make links between technology they see around them, coding and multimedia work they do in school e.g. <i>animations, interactive code and programs.</i> Know the potential consequences of inappropriate online searches.

<ul style="list-style-type: none">• stay within the activities provided by the adult on the device• tell an adult if I see something that I am unsure about		<ul style="list-style-type: none">• Understand how things are shared electronically such as posting work to the Purple Mash display board.• Understand email and how to send it safely by using 2Respond activities on Purple Mash• Know ways of reporting inappropriate behaviours and content.
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