

# Learn together, grow together

## Progression in Computing



In Computing, pupils will learn to be confident, safe and responsible users of technology so that they are future ready. Pupils will explore a variety of software and programmes whilst learning to become independent and resilient creators and consumers. They will leave Medina with computing skills that they can use and apply purposefully for a range of outcomes in an ever evolving society.

Computational Thinking							
Skill	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Coding and Programming</b>	<p>Follow simple oral algorithms in the classroom.</p> <p>Understand how to use simple software to make things happen.</p> <p>Understand how to input a simple sequence of commands to control a digital device (Construct'o'bot) with support.</p> <p>Understand how to spot simple patterns.</p> <p>Understand how to sequence simple familiar tasks (e.g when retelling a story).</p>	<p>Understand what algorithms are, Understand how to follow an algorithm and use algorithms for everyday tasks.</p> <p>Begin to understand how to use software to create movement and patterns on a screen.</p> <p>Understand how to input a simple sequence of commands to control a digital device (Beebot).</p> <p>Understand how to write simple algorithms.</p> <p>Use the word debug to correct any mistakes when using Discovery coding.</p> <p>Begin to predict what will happen for a short sequence of instructions in a program.</p>	<p>Understand that the sequence of algorithms is important.</p> <p>Know how to program a Beebot and predict the outcome. Be able to physically follow each other around and give each other forward, backward and right angle/ directional instructions.</p> <p>Understand how to use logical reasoning to predict the outcome of algorithms.</p> <p>Understand that decomposition is breaking objects/ processes down and apply this within the classroom (e.g to solve a problem in Maths).</p> <p>Know how to explore different input and output devices.</p>	<p>Create an algorithm to make something, e.g a jam sandwich.</p> <p>Understand how to plan and enter a sequence of instructions into a floor robot and on-screen robot.</p> <p>Understand how to debug and test to improve an algorithm where needed (including abstraction).</p> <p>Use 90° angles to create simple regular polygons using a robot.</p> <p>Control a floor robot using 90° angles (Roamer). Programme &amp; Code a simple sequence creating simple animation and simulations.</p> <p>Program and sequence a maze game, looking for patterns.</p> <p>Begin to know the meaning of <b>computational thinking</b> and give examples of what this might include.</p>	<p>Use repetition/loops to achieve solutions to tasks.</p> <p>Type logo commands including pen-up and pen-down.</p> <p>Solve open-ended problems and use efficient procedures to create shapes and letters.</p> <p>Use more complex angles and repeats/ procedures to create a repeating pattern.</p>	<p>Use Input, Process and Output. Change inputs on a model to achieve different outputs.</p> <p>Explore a computer model to control a physical system. Use a simple variable. Use variables with speed, direction and co-ordinates.</p> <p>Evaluate my work, using logical reasoning to identify errors in algorithms.</p>	<p>Control a screen mimic/model and a physical device using more than one input and predict the output.</p> <p>Explore instructions to control software and hardware with an input and output, and using 'IF/Then commands.</p> <p>Use a procedure, and procedures within a procedure, to achieve a solution to a given task.</p> <p>Use sensors and motors.</p> <p>Look at other programming languages and how they work with computers.</p> <p>Use Code to create a program using a Microbit.</p>

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<p><b>Computers and Computer Network</b></p>				<p>Understand that computers in a school are connected together in a network.</p>	<p>Begin to understand how the internet works, Know the difference between the Internet and the WWW. Look at the inside of a computer and explore the basic workings.</p>	<p>Know how computer servers, networks, packets, binary circuits work. Understand the difference between a Wide Area Network (WAN) and a Local Area Network (LAN) and how they support communication and collaboration.</p>	<p>Understand what HTML is and recognise HTML tags.</p>
<p><b>Information Technology</b></p>							
<p><b>Common use of ICT</b></p>	<p>Develop an interest in ICT by using age appropriate websites (such as CBeebies) Recognise they can use the internet to play and learn.</p>	<p>Recognise uses of IT beyond school (e.g. phones, laptops)</p>	<p>Find out about the history of computers. Recognise which appliances have a computer.</p>	<p>Understand how we use computers every day to help us.</p>	<p>Understand the history of computing and explain how computers used to work.</p>		

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<p><b>Skills and knowledge</b></p>	<p>Use a mouse to click, drag, drop and select icons (e.g when using My World). Use a keyboard to type own name. Know which icon is used to print documents. Use a camera tool on an I-PAD to take a photograph. Use a simple pictogram programme. Use paint programs to create pictures.</p>	<p>Use a keyboard to type a simple sentence leaving one space between words. Use the caps lock key to use a capital for the start of the sentence (2 Simple and 2 create). Use a camera tool to take a photograph and input into software (such as Pic Collage). Create and scan a barcode or QR code and know what they are used for. Retrieve pictures. Use and sequence within animation software to tell a story. Save and retrieve a document to create a map of the local area. Record sound/voice using software to when storytelling.</p>	<p>Use a keyboard to type sentences about castles. Use more complex keys on the keyboard. (Microsoft Word). Draw, save and retrieve a photograph to use within software. Combine with text. Create a pictogram by editing and selecting images. Collect and organise data to solve own question (pictogram). Use a computer to create a musical composition.</p>	<p>Type more confidently using both hands Know how to change the size, colour and font of a text. Understand how to search for and insert picture (using online or other picture banks). Input data into a spreadsheet and use data to create a chart (Excel). Create a simple database (Data Bases) using two criteria. Use the internet for research. Know the difference between photography and video (Photostory). Confidently take a photo using a camera. Copy photos from camera and save on the computer. Begin to manipulate images and understand pixels.</p>	<p>Know how to create and explore branching databases (e.g for animal life cycles). Edit, crop and wrap images inserted into a document Know how to cut &amp; paste images and text to combine them. Understand how to manipulate shapes and create digital art including the laying of objects and images. Understand how to save to and retrieve from a memory stick.</p>	<p>Create and explore Excel Spreadsheets using formulas. Use simple searches on Databases to detect and correct errors. Understand that computers can be used to select and control sounds. Explore sound and music using a computer. Identify musical instruments/sounds played in musical software Create, edit and remix music/sound. Record music including repetition and loops in music.</p>	<p>Understand how to use complex Boolean Searches (with and/or) to sorting by more than one criterion when using databases. Edit and save an image and insert into different program. Edit a picture to remove the background. Use and edit textboxes. Understand how to use presentation software, add transitions, animations and hyperlinks. Research significant individuals of the past. Explore the history and future technology, considering how will computers be used in the future?</p>
<p><b>Digital Literacy</b></p>							

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<p><b>Identity, Online relationships and Reputation</b></p>	<p>Understand that you can say no or please stop both in real life and online. Begin to tell an adult if something online upsets you or you aren't comfortable with it (EYWorld). Describe how people can be kind and unkind both in real life and online. <b>This links to our PSHE skills progression.</b></p>	<p>Tell an adult if I find online content that makes me feel sad, worried, uncomfortable or frightened. Give examples of ways to behave online so that it does not upset others. <b>This links to our PSHE skills progression.</b></p>	<p>Explore what cyberbullying means and what to do when they encounter it. Understand the need to be safe, respectable and responsible online. Recognise that people can behave differently online and in real life and give examples. <b>This links to our PSHE skills progression.</b></p>			<p>Define the term identity, recognise there are real life identities and online identities and explain how these can be changed. Understand how to build a good/positive online digital footprint (including personal digital etiquette and online reputation). Understand that the information we put online can be found by others including future employers. Understand types of cyberbullying (Let's Fight it Together) and explain what to do in this situation. <b>This links to our PSHE skills progression.</b></p>
<p><b>Managing information online</b></p>	<p>Begin to identify good and bad choices when using websites. <b>This links to our PSHE skills progression.</b> Use the internet to find things out. Play appropriate games on the Internet (e.g C Beebies)</p>	<p>Use simple words in search engines.</p>	<p>Use key phrases in search engines. Explain what autocomplete is and how to choose the best suggestion. Open/ send an email with attachments.</p>	<p>Describe how to search for information within different technologies. Begin to understand about fake info and phishing and the consequences of this (Education City).</p>	<p>Explore and use different search technologies. Begin to evaluate digital content and explain how to make choices from search results. <b>This links to our PSHE skills progression.</b> Understand and identify scams/ phishing.</p>	<p>Use search technologies effectively find and evaluate information</p>

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<p><b>Safety/Well being Security, Copyright and Ownership</b></p>	<p>Know that we should limit the time we use technology and use it in a safe place where adults are close. <b>This links to our PSHE skills progression.</b></p> <p>Begin to understand how to keep a log in safe.</p> <p>Know that I have to name my work so that others know it belongs to me.</p>	<p>Understand the need to follow certain rules when visiting websites online. <b>This links to our PSHE skills progression.</b></p> <p>Know how to keep a log in safe.</p> <p>Know that I save my work so that other people know it belongs to me.</p>	<p>Explain why we need to keep my password and other personal information safe.</p> <p>Begin to log into an email account to compose/send and receive/open emails.</p> <p>Describe why other peoples' work belongs to them.</p> <p><b>This links to our PSHE skills progression.</b></p>	<p>Understand computers can be affected by viruses and how this happens.</p> <p>Think about E-Safety Rules and why we should use them. <b>This links to our PSHE skills progression.</b></p> <p>Understand the link between ownership of work and copyright rules.</p> <p>Explain why copying someone's work from the internet can cause problems.</p>	<p>Understand how we keep our personal information safe (including data). <b>This links to our PSHE skills progression.</b></p> <p>Explain how I would report or block someone online to an online help service (Childline/CEOP).</p> <p>Understand that too much technology can have a negative impact, e.g affect healthy sleep. <b>This links to our PSHE skills progression.</b></p>	<p>Understand how to create a good, strong, secure password (Password Checker).</p> <p>Understand and give examples of age-appropriate media and parental controls.</p> <p><b>This links to our PSHE skills progression.</b></p>	
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