



The Intent of our Computing Curriculum is

At Red Hall Primary School, we believe that **all** pupils should achieve and reach their full potential. As a school we not only want our children to **achieve** now, but for their **whole lives**. We aim to provide them with an **exciting, engaging and authentic** Computing curriculum that will do just this!

Our Computing Curriculum, allows **all** pupils to develop skills and knowledge that will prepare them to be **responsible** digital citizens, in a technology rich future. By experiencing a **wide range of current technology**, such as engaging physical computing devices (Beebots, Lego Wedo 2.0 kits and MicroBits); creative software such as 3D Paint and a variety of IT software, we aim to create **confident, creative, curious** and **resilient** individuals. By experiencing the latest Computing software, we can provide pupils with **purposeful, innovative** and **exciting** opportunities in Computing learning, allowing pupils to make **memories** and **experience** things they may have never experienced before. Pupils will see the purpose of Computing and its **endless possibilities**, beyond the limited uses they are familiar with e.g. playing internet games or watching YouTube videos.

Pupils may have limited access to technology at home however we believe that Computing can provide pupils with a wide range of **cross-curricular skills** that they can use across a variety of subjects and settings. These include **problem-solving, critical thinking, resilience** and **creative thinking**.

In addition, alongside our PSHE curriculum, pupils will learn how to become **active, responsible** digital citizens online. With the majority of pupils being active online at a young age and with a lack of parental understanding, we deliver a curriculum that teaches them how to act **safely** and **responsibly** on the internet and what to do if they do not feel safe online. We also aim for our pupils to be **critical, informed users** of the internet, meaning they can identify reliable and credible information. This will help them with research as well as making responsible, informed decisions as adults.

In the EYFS provision we ensure all children are exposed to a variety of Computing equipment to prepare them for the Computing curriculum in Year 1. This includes:

- Unplugged activities to provide exposure to concepts such as sequencing and instructions.
- Tinker trays (e.g. broken pieces of machinery) to recognise different parts of technology.
- Technology placed in areas to use within role play
- Beebot continuous area to allow pupils to play with Beebots.

<p>The experiences your child will receive are</p>	<ul style="list-style-type: none"> • Based upon the National Curriculum, pupils will receive a creative, relevant curriculum that focuses on the progression of skills and knowledge. • Discrete Computing lessons, pupils will receive an equal balance of Computer Science, IT and Digital literacy teaching. • Receive high quality teaching that focuses on depth, progression and challenge. • Pupils will develop computing 'life skills'. • Receive e-safety lessons half termly to understand how to use technology safely and responsibly. • Experience and participate in creative, exciting Computing projects. • Access to a wide range of Computing software and devices. • Expert visitors to deliver interactive experiences. • Whole school events such as Safer Internet Day. • Exciting extra-curricular clubs such as Animation club and Computing Club.
<p>By the end of their time at Red Hall, we hope our children have</p>	<ul style="list-style-type: none"> • Developed skills and knowledge across the three Computing strands (Computer Science, Digital Literacy and IT). • Developed an enthusiasm for Computing. • Participated in authentic, exciting Computing learning projects. • Become confident, responsible users of the internet. • Developed a range of cross-curricular skills such as resilience and problem-solving. • A deeper understanding of the different uses of technology in our wider world.

Red Hall's Computing Curriculum Leader – Miss Johnston

Dream Believe Achieve



Year 1

Links to previous knowledge	By the end of the year your child will have covered the following 3 strands in Computing:			
<p>Pupils will have explored sequencing in EYFS using Beebots and other programmable devices.</p> <p>Pupils will have accessed a computer in the EYFS setting and developed confidence with how to use a mouse and complete simple tasks using this. For example, drawing a picture on paint.</p>	Digital Literacy	IT	Computer Science	Life Skills
	<ul style="list-style-type: none"> Keep my password private Know what personal information is and that it should not be shared online Act if they find something inappropriate online or something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc.) Know they must tell a trusted adult immediately if anyone tries to meet them via the internet Capture images with a camera Record a sound/ video and play it back Child can create original content using software e.g. art program. 	<ul style="list-style-type: none"> Children can mention some of the ways in which IT is used to communicate beyond school. E.g. They might know that some people email, video calls or online greetings Print out a page from the internet. 	<ul style="list-style-type: none"> Create a simple series of instructions to understand that algorithms are a sequence of instructions in everyday contexts. Put two instructions together to control a programmable toy- Understand forwards, backwards, up and down Begin to plan and test a Bee-bot journey to implement an algorithm Record their routes The child can explain to the teacher what they think a program will do, using a familiar piece of software (including computer games). 	<ul style="list-style-type: none"> Use ICT components- e.g. a mouse, keyboard (Pupils should be able to use left click, double click and start to understand that you can right click when needed) Explain what the basic parts of a computer are used for (mouse, screen and keyboard)

At the start of each half term, your child will also receive designate e-safety lessons.

Year 2



<p>Links to previous knowledge</p>	<p>By the end of the year your child will have covered the following 3 strands in Computing:</p>			
<p>Pupils will be able to confidently use name the parts of a computer and be able to use a keyboard and mouse independently, with little prompting from an adult.</p> <p>Pupils will understand that the internet is a resource that is used worldwide for lots of different reasons.</p>	<p>Digital Literacy</p>	<p>IT</p>	<p>Computer Science</p>	<p>Life Skills</p>
	<ul style="list-style-type: none"> • Explain why they need to keep their password private. • Understand what personal information they should and should not share online • Understand that when content is shared online, it might not be able to be deleted. • Understand the different methods of communication (e.g. email, online forums etc) • Know the difference between email and communication systems such as blogs and wikis • Use the internet for learning and communicating with others, making choices when navigating through sites • Know that not all information online is true. • Word process/ create a slide show to present a piece of text that include pictures, clipart and the use of shape tools to draw. 	<ul style="list-style-type: none"> • Children can navigate links on a webpage (clicking links) and be able to find information on a website. • With a given purpose, the child can use a range of digital technologies to retrieve, organise and store digital content. • Children know ways to use IT to communicate beyond school e.g. adults can share work and discuss ideas in online communities; • Children should understand that photos can be taken, edited and shared easily using digital technology; • Children should understand that the web is made up of information shared by people and organisations; • Children should understand that people use email for a range of purposes and in a variety of contexts; • Children should understand that scientists use computers when collecting and analysing data. • Recognise a range of input devices (mouse, keyboard and microphone) • Recognise a range of output devices (printer, speakers, monitor and screen) 	<ul style="list-style-type: none"> • Predict what they think a program will do. • Recognise that sequences of instructions or sets of rules can be thought of as algorithms. Examples could include recipes, but might also be procedures or rules in class, spelling rules, simple arithmetic operations or number patterns. • Program on screen using sequences of instructions to implement an algorithm. (scratch), etc) • Write/ create a simple program on screen, correcting any errors. • Debug any errors in their own code. • Give logical explanations of what a program will do (predict the outcome of a similar algorithm/program). <p>Evaluate the success of an algorithm/program</p>	<ul style="list-style-type: none"> • Log in to a computer with a username and password independently.

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Year 3



Links to previous knowledge	By the end of the year your child will have covered the following 3 strands in Computing:			
<p>Pupils will be confident in defining an algorithm and be confident in sequencing and debugging a problem.</p> <p>Pupils will be able to create algorithms for programmable devices and using software.</p> <p>Pupils will start to understand that different pieces of software are used for different purposes.</p>	Digital Literacy	IT	Computer Science	Life Skills
	<ul style="list-style-type: none"> • Create a presentation that moves from slide to slide and is aimed at a specific audience. • Combine text, images and sounds and show awareness of audience. • Know how to manipulate text, underline text, centre text, change font and size and save text to a folder. • Review images on a camera and delete unwanted images • Experienced downloading images from a camera into files on the computer • Use photo editing software to crop photos and add effects • Manipulate sound when using simple recording story boarding. • Understand the need for rules to keep them safe when exchanging learning and ideas online • Understand that copyright exists on most digital images, video and recorded music • Understand the need to keep personal information and passwords private • Understand that if they make personal information available online it may be seen and used by others • Know how to respond if asked for personal information or feel unsafe about content of a message • Begin to identify when emails should not be opened and when an attachment may not be safe 	<ul style="list-style-type: none"> • Find relevant information by browsing a menu. • Search for an image, then copy and paste it into a document • Use 'save picture as' to save an image • Copy and paste text into a document • Begin to use note making skills to decide what text to copy • Input data into a prepared database • Sort and search a database to answer simple questions • Use a branching database. 	<ul style="list-style-type: none"> • Understand that we can decompose a problem into smaller parts to make it simpler. • Remix and change an existing program. • Predict the outcome of a more complex program e.g scratch. • Use 90 degree and 45 degree turns • Give an on-screen robot directional instructions • Draw a square, rectangle and other regular shapes on screen, • Using commands write more complex programs • To understand and experiment with input 	<ul style="list-style-type: none"> • Know how to save and print a document into a shared area (Microsoft word or PowerPoint.) • Use a search engine to find specific information

	<ul style="list-style-type: none">• Explain how to use email safely, Use the email address book; open and send an attachment			
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Year 4



At the start of each half term, your child will also receive designate e-safety lessons.

<p>Links to previous knowledge</p>	<p>By the end of the year your child will have covered the following 3 strands in Computing:</p>			
<p>Pupils will be confident with IT skills, such as copy and paste, save, print and their typing speed is developing.</p> <p>Pupils now understand more complex software such as Excel and how this is used to record data.</p> <p>Pupils are starting to develop confidence with using physical inputs, when programming.</p>	<p style="text-align: center;">Digital Literacy</p> <ul style="list-style-type: none"> ● Insert sound recordings into a multimedia presentation ● Download images from the camera into files on the computer ● Copy graphics from a range of sources and paste into a desktop publishing program. ● Use strategies to verify information eg cross checking. ● Know how to report an incident of cyber bullying ● Know the difference between online communication tools used in school and those used at home ● Understand the need to develop an alias for some public online use ● Recognise what kinds of websites are trustworthy sources of information. ● Recognise that information on the internet may not be accurate or reliable and may be used for bias, manipulation or persuasion ● Understand that the internet contains fact, fiction and opinion and begin to distinguish between them 	<p style="text-align: center;">IT</p> <ul style="list-style-type: none"> ● Understand that the outcome of internet searches at home may be different than at school ● Capture images using webcams, screen capture, scanning, visualiser and internet. ● Choose images and download into a file. ● Use different search engines and use a search engine to find a specific website ● Use note-taking skills to decide which text to copy and paste into a document ● Use tabbed browsing to open two or more web pages at the same time ● Open a link to a new window ● Open a document (pdf) and view it ● Input data into a prepared database ● Sort and search a database to answer simple questions ● Recognise what a spread sheet is ● Use the terms 'cells', 'rows' and 'columns' ● Enter data, highlight it and make bar charts ● Appreciate the benefits of ICT to send messages and to communicate 	<p style="text-align: center;">Computer Science</p> <ul style="list-style-type: none"> ● Use repeat instructions to draw regular shapes on screen, using commands (loops) ● Use forever loops in a program ● Use diagrams to represent an algorithm. ● Use selection in algorithms and programs e.g. if... then... ● Make accurate predictions about the outcome of a program they have written ● Make turns specifying the degrees ● Give an on-screen robot specific directional instructions that takes them from x to y 	<p style="text-align: center;">Life Skills</p> <ul style="list-style-type: none"> ● Create folders in their personal area and save documents into this. ● Delete, move and copy files. ● Use the automatic spell checker to edit spellings

Year 5



Links to previous knowledge	By the end of the year your child will have covered the following 3 strands in Computing:			
<p>Pupils can organise their work independently in their work area e.g. appropriate file names and folders.</p> <p>Pupils will be able to access the benefits of the internet when completing research and creating documents. E.g. knowing how to select appropriate information.</p>	Digital Literacy	IT	Computer Science	Life Skills
	<ul style="list-style-type: none"> • Use a range of presentation applications • Consider audience when editing a simple film • Know how to prepare and then present a simple film • Use the word count tool to check the length of a document • Use bullets and numbering tools • Manipulate sounds using Audacity • Select music from open sources and incorporate it into multimedia presentations • Work on simple film editing • Understand the potential risk of providing personal information online • Understand the benefits of developing a 'nickname' for online use • Understand that some malicious adults may use various techniques to make contact and elicit personal information • Know that it is unsafe to arrange to meet unknown people online • Know how to report any suspicions • Understand they should not publish other people's pictures or tag them on the internet without permission • Know that content put online is extremely difficult to remove • Know what to do if they discover something malicious or inappropriate • Understand that some messages may be malicious and know how to deal with this 	<ul style="list-style-type: none"> • Conduct a video chat with someone elsewhere in the school or in another school. • Independently, and with regard for e-safety, select and use appropriate communication tools to solve problems by collaborating and communicating with others within and beyond school. • Use a search engine using keyword searches • compare the results of different searches • Understand that some material on the internet is copyrighted and may not be copied or downloaded • download a document and save it to the computer • Create a formula in a spreadsheet and then check for accuracy and plausibility • Search databases for information using symbols such as = > or < • Create databases planning the fields, rows and columns • Create graphs and tables to be copied and pasted into other documents • Make a home page for a website that contains links to other pages • Produce and upload a podcast/ create and edit a school blog 	<ul style="list-style-type: none"> • Combine <i>sequences</i> of instructions and procedures to turn devices on or off • Understand <i>input</i> and <i>output</i> • Use an ict program to control an external device that is electrical and/or mechanical • Use ict to measure sound or light or temperature using sensors • Explore 'what if' questions by playing adventure or quest game • Write programs that have sequences and repetitions • Recognise variables in a program <p>Use two-way selection</p>	<ul style="list-style-type: none"> • Use common keyboard shortcuts

	<ul style="list-style-type: none">• <i>Make safe choices about use of technology</i>• <i>Create strong passwords and manage them so that they remain strong.</i>			
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At the start of each half term, your child will also receive designate e-safety lessons.

Year 6



Links to previous knowledge	By the end of the year your child will have covered the following 3 strands in Computing:			
<p>Pupils will be confident using a range of software with ease e.g. Microsoft Word, Powerpoint and Excel.</p> <p>Pupils will be confident in explaining the positives and negatives of the internet.</p> <p>Pupils will be responsible digital citizens.</p>	Digital Literacy	IT	Computer Science	Life Skills
	<ul style="list-style-type: none"> ● Present a film for a specific Audience and then adapt same film for a different audience ● Create a sophisticated multimedia presentation ● Confidently choose the correct page set up option when creating a document ● Confidently use text formatting tools, including heading and body text ● Use the 'hanging indent' tool to help format work where appropriate (e.g. A play script) ● Explore the menu options and experiment with images (colour effects, options, map to grid, grid settings etc.) ● Add special effects to alter the appearance of a graphic ● 'Save as' gif or i pag. wherever possible to make the file size smaller (for Emailing or downloading) ● Make an information poster using their graphics skills to good effect ● Discuss the positive and negative impact of the use of ict in their own lives and those of their peers and family ● Recognise the potential risks of using internet communication tools and understand how to minimise those risks (including scams and phishing) ● Use technology in ways which minimises risk, e.g. responsible use of online discussions, etc ● Understand that online environments have security settings, which can be altered, to protect the user 	<ul style="list-style-type: none"> ● Use complex searches using such as '+' 'or' "find the phrase in inverted commas" ● Recognise why people may publish content that is not accurate and understand the need to be critical evaluators of content ● Understand that some websites and/or pop-ups have commercial interests that may affect the way the information is presented ● Use appropriate strategies for finding, critically evaluating, validating and verifying information, e.g. using different keywords, skim reading to check relevance of information, cross checking with different websites or other non ict resources. ● Reference information sources ● Use knowledge of the meaning of different domain names and common website extensions (e.g. .co.uk; .com; .ac; .sch; .org; .gov; .net) to support validation of information ● Collect live data using data logging equipment ● Identify data error, patterns and sequences ● Use the formulae bar to explore mathematical scenarios 	<ul style="list-style-type: none"> ● Explain how an algorithm works ● Detect errors in a program and correct them ● Experiment with variables to control models ● Use an ict program to control a number of events for an external device ● Use ict to measure sound, light or temperature using sensors and interpret the data ● Explore 'what if' questions by planning different scenarios for controlled device ● Use input from sensors to trigger events ● Check and refine a series of instructions 	<ul style="list-style-type: none"> ● Use more advanced searching techniques when using a search engine. ● Recognise common file types and extensions.

		<ul style="list-style-type: none">• Create their own database and present information from it.		
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At the start of each half term, your child will also receive designated e-safety lessons.