Hadley Wood Primary School

Computing- Scheme of Work

ICT Vision

Our vision is that every child will leave our school digitally literate, confident in their ability to use technology creatively in a wide range of contexts. They will be capable coders with the ability to program and control a wide variety of software, with an awareness of the benefits and possible dangers of ubiquitous internet access and communication. Most importantly they will be secure in their knowledge of how to keep themselves safe online and contribute to creating a better Internet for all.

Powered by:

Google code club THINK U KNOW Barefoot Computing COMPUTING AT SCHOOL EDUCATE · ENGAGE · ENCOURAGE Part of BCS –The Chartered Institute for IT

Curriculum Intent:

This curriculum provides teachers with a starting block to embark on teaching an effective and engaging computing curriculum. In the recent Royal Society publication 'After the reboot: computing education in UK schools (2018)', it stated that in order for children to leave school and "*to embark on successful professional careers and to become astute and responsible citizens…children should begin to study computing at the earliest age possible*". With this in mind, Hadley Wood aims to lead the way in creating a stimulating an engaging curriculum for our pupils as outlined in our ICT Vision statement.

The resources are drawn from a variety of respected and well-known sources that have been created by educators with vast experience in computing and which use research driven pedagogy. It has been divided into three sections: online safety, which is taught discreetly at the start of the autumn term; digital literacy, taught mainly in autumn and spring; and coding, taught in the remainder of the year. There is a more equal split between coding and digital literacy/online-safety emphasising the fact that computing isn't just about coding nor 'ICT'. However, in order to give children the tools they need, Digital Literacy does feature throughout. Resources and lessons are linked in the individual year group plans and it is expected that teachers will adapt these to make them appropriate for their class.

Computing Curriculum Overview: EYFS – Year 6

ICT	
Year 1 and beyond	**Early Years**
Developing cultural capital	• Link in understanding between algorithm and instructions • Link in understanding between debugging and problem solving • Recognise the importance of online safety and the vocabulary associated with it
Understand what algorithms are	• Beebots – inputting basic instructions Bee-Bot app on Ipads Scratch Jnr on Ipads Simple instructional; writing
Create and debug simple programs	• Beebots – inputting basic instructions Bee-Bot app on Ipads Scratch Jnr on Ipads
Use logical reasoning to predict the behaviour of simple programs	• Beebots – inputting basic instructions • Bee-Bot app on Ipads • Scratch Jnr on Ipads
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	• Use IPADS to take pictures of models/creations the children have produced • Design pictures on 2Publish/ Purple mash software
Recognise common uses of information technology beyond school	• Experience of interactive whiteboard during lessons to move on learning • Use of IPADs to capture learning opportunities • Technology walk to identify technology around the school
Online safety	• Smartie the Penguin. Children make masks. • Internet Safety Week • Digi Duck story

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Online safety: Using the internet safely	Digital Literacy & Online safety: : using a computer/device	Coding with Codeapillars/Beebots	Digital Literacy: bug hunters	Digital Literacy: potty painters	Coding: Scratch Jnr - introduction and fundamentals
Year 2	Online safety: Staying safe on the internet Coding - Predicting behaviour and using repeat command	Coding: Using programs to recreate shapes	Coding - Predicting behaviour and using repeat command	Digital LIteracy - Learning about development of world wide web Creating an online presentation	Online safety: Emailing as a class	Digital Literacy: Using technology purposefully
Year 3	Online safety: Use technology safely; understand what is considered as unacceptable behaviour and how to deal with it.	Coding: Sequence instructions Simple repetition	Digital Literacy: Develop an understanding of the history of computers. How computer networks including the internet work.	Digital Literacy: Using a database	Online safety: & Digital Literacy: Communication and collaboration in the wider world.	Coding: Using simple output/model to animate sprites in a variety of different programs.
Year 4	Online safety: Using technology safely, look at examples of what acceptable behaviour is. Coding: Interactive - Chatbot	Digital Literacy: Research and develop a topic	Online safety: Developing an understanding of the history of computers, networking and the internet.	Coding: Game - Boat race	Digital Literacy: Childnet video competition	Coding: Controlling simple sprites with commands and prompts.
Year 5	Online safety: Securing your secrets Digital Literacy: News Reports Using programs such as IMovie to bring learning to life	Digital Literacy: Data analysis	Coding: Scratch - Space Junk Game	Online safety: and Digital Literacy: How the internet works	Coding: Building a webpage	Coding: App design

Year 6	Online safety: Google It's cool to be kind	Digital Literacy: Explore a Topic with Research and Collaboration	Coding: scratch maths Building with Numbers	Coding: Scratch Memory game	Digital Literacy: Childnet video competition	Digital Literacy: using a data analysis program

Computing Progression of Skills: EYFS – Year 6

EYFS		
30-50 Months	**40-60 Months**	**ELG**
Understanding the World	**Understanding the World**	**Understanding the World**
Technology	**Technology**	**Technology**
- To know how to operate simple equipment. - To show an interest in technological toys with knobs or pulleys, or real objects. - To show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. - To know that information can be retrieved from computers.	- To complete a simple program on a computer. - To interact with age-appropriate computer software.	- To recognise that a range of technology is used in places such as homes and schools. To select and use technology for particular purposes.

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Digital Literacy	– I can use simple navigation skills to open a web browser. – I can click on links on a webpage to navigate forward and back. – I know that emails are a way to send and receive messages digitally, which is different to sending a letter. – I know who to tell if I see something I do not like online. – I understand that I	– I understand that people you communicate with online may not always be who they say they are. – I understand not to share any personal information online. – I can explain the importance of keeping my password secret. – I know how to follow our school's acceptable use policy to stay safe online.	– I know how to respond to unpleasant communications via mobile phone, text, IM, email or chat rooms. – I understand that school some computers are networked so that they can share information – e.g. a class shared area. – I can add websites to bookmark / favourites. – I can copy and	– I can use the internet independently to gather information safely for my own work – Identifies a range of ways to report concerns about content – Recognises acceptable/unacceptable behaviour	– I know how to search for a file/program on a school computer/network – I understand and can explain how search results are selected and ranked – I understand that the internet is a global computer network – I understand the importance of appropriate online behaviour and that online (cyber-)	– I understand the opportunities computer networks offer for collaboration – I can evaluate the effectiveness of digital content

	must keep my personal information private online.	– I know what to do if I see something I do not like online. – I can open a web browser and search online safely. – I can navigate to a website by entering a simple web address into a browser. – I know how to send and receive an online message.	paste images/text from the internet. – I can upload a file onto the school MLE. – I understand the difference between publishing on the school MLE and an open public site. – I understand that taking lots of text from websites is stealing other people's work. – I understand that the Internet contains fact, fiction and opinion and begin to distinguish between them. – I know how to respond online if I am asked for personal details.		bullying is unacceptable – I am aware that file sharing is usually illegal due to copyright laws and can also spread viruses – I know the importance of not deleting inappropriate electronic communications – I understand that you should not publish other peoples' material on the Internet without their permission but you can hyperlink to their websites – I can select appropriate images and information for my own personal page on the MLE	
ICT	– I can independently open a program and save my work. – I am beginning to type with two hands. – I can use the shift, space and enter key correctly. – I can use a paint program to create a picture using different sized brushes and colours. – I can enter data into a simple pictogram	– I can insert basic punctuation using the shift key including: commas, speech marks, question and exclamation marks. – I can insert a text box and an image into a word processing program. – I can edit and correct my own work by using the spell check function. – I can cut, copy and paste text.	– I can use a range of programs independently. – I can create e-books using simple apps which include images text sound and video. E.g. Book Creator – I can independently present information using a presentational program. – I can create and edit text effectively with appropriate use	– I can select from a range of software applications independently. – I can present results of a research project in a presentation format. (PowerPoint) – I can use a variety of colours / texture and brush tools within an art & design program to create an image. – I can import images into a desk top	– I can plan and design a simple app to address a particular need – I can use software to create my own sounds by recording, editing and playing. – I can use software to create and present digital content for a radio podcast or jingle. – I can create film footage independently to	– I can combine a variety of software to accomplish given goals – I can select, uses and combines software on a range of digital devices – I can analyse and evaluate data – I can design and creates systems

		– I can use presentational software e.g. PowerPoint to present information to an audience. – I can import images and sounds into a presentation. – I can create and modify pictures using a paint program by selecting appropriate brush size, texture, spray, shape and palette. – I can print my own work independently.	of tools e.g. Spell-check, cut and paste. – I can contribute to my class page on a learning platform or e-safety blog. – I can create images using a range of paint programs using the select, draw, paint and repeat tools. – I can use music software to create a sequence of musical phrases. – I can shoot film, exploring a range of techniques e.g. long and close up shots. – I can upload, open and edit video files e.g. using Windows Movie Maker or iMovie. – I can collect data to enter into a spreadsheet/database (Excel). – I can select and change cell colour, size, text and number format appropriately (Excel) – I can use and explain terminology associated with spreadsheets e.g. columns, rows, cells, cell reference (Excel)	publisher. – I can create a comic strip layout using photos in a desk top publisher – I can record short video clips, combine and edit film, adding titles and credits – I can create a stop-frame animation – I can collate data using a database/spreadsheet – I can analyse data and present to audience graphically -including bar graphs and pie chart formats (Excel) – I can enter data and simple formulae +/- into cells (Excel) – I can use sum and sort functions (Excel)	include title screen, text, transitions and a soundtrack. – I can use a graphical modelling package to inform my decisions and design e.g. use of Purple Mash D&T program – I can input formulae to create a results table (Excel) – I can use spreadsheets to solve problems by using the filter and sort functions (Excel)	

Computer Science	– I understand that an algorithm is a set of instructions which a program/computer needs to work. – I can follow a set of spoken instructions (an algorithm) accurately when 'playing robot'. – I can program a floor robot to follow a sequence of instructions. – I can write a simple algorithm. – I can give simple directional instructions to move an on screen character (sprite). – I can explain what the term 'debugging' means. – I can predict the behaviour of simple programs. – I can give explanations for what I think a program will do.	– I can create an algorithm to move or rotate an on screen character (sprite). – I can explain the function of the repeat command. – I can create an efficient algorithm using the repeat function. – I can write an algorithm to add sound to my program. – I can test and evaluate a partner's algorithm. – I can use logical reasoning to predict the behaviour of simple programs. – I can compare the efficiency of different sets of instructions. – I can edit and debug programs to change or improve the outcome.	– I can create and debug an algorithm using the move, rotate and repeat commands. – I can explain a simple sequence-based algorithm in my own words. – I can program multiple on screen characters to move and interact, using a sequence of commands. – I can create an algorithm to draw a 2D shape. – I can input a range of variables including wait, sound and change of costume. – I can use logical reasoning to detect errors in my program. – I can predict what will happen when I input an algorithm, giving reasons for my answers. – I can save, retrieve, edit and debug my program.	– I can design programs that accomplish specific goals – I can design and creates programs – I can debugs programs that accomplish specific goals – I can use repetition in programs – I can control or simulate physical systems – I can use logical reasoning to detect and correct errors in programs – I understand how computer networks can provide multiple services, such as the World Wide Web	– I can use sequence, selection and repetition in programs e.g. repeat…until…if… blocks – I can design and program a character game – I can add point-scoring and levels to game code – I can write a program that accepts keyboard and mouse input and output – I can use logical reasoning to explain a rule based algorithm in my own words – I can use logical reasoning to detect errors in algorithms.	– I can solves problems by decomposing them into smaller parts – I can use selection in programs – I can work with variables – I can uses logical reasoning to explain how some simple algorithms work – I can use logical reasoning to detect and correct errors in algorithms – I understands computer networks, including the internet – I understand how search results are ranked
Vocabulary	KS1 subject related vocabulary • Algorithm • Implemented • Executed • Program • Instructions • Debug • Predict • Logical reasoning		KS2 subject related vocabulary • Control • Simulate • Decompose • Sequence • Select • Selection • Repetition • Variables			

	• Technology • Create • Organise • Store • Manipulate • Retrieve • Digital content • Personal information • Private • Internet	• Detect • Correct • Error • Computer networks • World wide web • Communication • Collaboration • Search engine • Evaluating • Analyse • Present