



THREE HARES PRIMARY SCHOOLS COMPUTING CURRICULUM PROGRESSION

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YEAR 1			
Subject	Knowledge	Skills	Key Vocabulary
<p>Computer Science</p> <p>Computers and Hardware</p> <ul style="list-style-type: none"> Recognise common uses of information technology beyond school <p>Computational Thinking</p> <ul style="list-style-type: none"> 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 <p>Digital Literacy and Online Safety</p> <ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content 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 	<p>E-Safety</p> <ul style="list-style-type: none"> I can keep my password private. I can tell you what personal information is. I can tell an adult when I see something unexpected or worrying online. I can talk about why it's important to be kind and polite. I can recognise an age appropriate website. I can agree and follow sensible e-Safety rules. <p>Programming</p> <ul style="list-style-type: none"> I can give instructions to my friend and follow their instructions to move around. I can describe what happens when I press buttons on a robot. I can press the buttons in the correct order to make my robot do what I want. I can describe what actions I will need to do to make something happen and begin to use the word algorithm. I can begin to predict what will happen for a short sequence of instructions. I can begin to use software/apps to create movement and patterns on a screen. I can use the word debug when I correct mistakes when I program. <p>Handling Data</p> <ul style="list-style-type: none"> I can talk about the different ways in which information can be shown. I can use technology to collect information, including photos, video and sound. I can sort different kinds of information and present it to others. I can add information to a pictograph and talk to you about what I have found out. <p>Multimedia</p> <ul style="list-style-type: none"> I can be creative with different technology tools. I can use technology to create and present my ideas. I can use the keyboard or a word bank on my 	<p>Computer Science</p> <p>Hardware</p> <ul style="list-style-type: none"> Learning how to explore and tinker with hardware to find out how it works Understanding that computers and devices around us use inputs and outputs, identifying some of these Learning where keys are located on the keyboard Learning how to operate a camera <p>Computational Thinking</p> <ul style="list-style-type: none"> Learning that decomposition means breaking a problem down into smaller parts Using decomposition to solve unplugged challenges Using logical reasoning to predict the behaviour of simple programs Developing the skills associated with sequencing in unplugged activities Learning that an algorithm is a set of step by step instructions used to carry out a task, in a specific order Follow a basic set of instructions Assembling instructions into a simple algorithm <p>Programming</p> <ul style="list-style-type: none"> Programming a Bee-bot/Blue-bot to follow a planned route Learning to debug instructions when things go wrong Developing a how to video to explain how the Vee-bot/Blue-bot works. Learning to debug an algorithm in an unplugged scenario <p>Information technology</p> <p>Using Software</p> <ul style="list-style-type: none"> Using a basic range of tools within graphic editing software Taking and editing photographs Understanding how to create digital art using an online paint tool Developing control of the mouse through dragging, clicking and resizing of images to create different effects Developing understanding of different software tools <p>Using Email and the Internet</p> <ul style="list-style-type: none"> Searching and downloading images from the internet safely <p>Using Data</p> <ul style="list-style-type: none"> Introduction to spreadsheets 	<p>E-Safety</p> <ul style="list-style-type: none"> Rules Online Private information Email <p>Programming</p> <ul style="list-style-type: none"> Instructions Buttons Robots Patterns Program <p>Multimedia</p> <ul style="list-style-type: none"> Videos Camera stills Sounds Image bank Word bank Space bar <p>Technology in Our Lives</p> <ul style="list-style-type: none"> Purpose Online tools Communicate <p>Data Handling</p> <ul style="list-style-type: none"> Photographs Video Sound Data Pictogram Digitally

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	<p>device to enter text.</p> <ul style="list-style-type: none"> I can save information in a special place and retrieve it again. <p>Digital Media</p> <ul style="list-style-type: none"> I can recognise the ways we use technology in our classroom. I can recognise ways that technology is used in my home and community. I can use links to websites to find information. I can begin to identify some of the benefits of using technology. 	<ul style="list-style-type: none"> Representing data in tables, charts and pictograms Sorting data and creating branching databases Identifying where digital content can have advantages over paper when storing and manipulating data <p>Wider Use of technology</p> <ul style="list-style-type: none"> Recognising common uses of information technology, including beyond school Recognising uses of technology 	
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YEAR 2			
Subject	Knowledge	Skills	Key Vocabulary
<p>Computer Science</p> <p>Computers and Hardware</p> <ul style="list-style-type: none"> Recognise common uses of information technology beyond school <p>Computational Thinking</p> <ul style="list-style-type: none"> 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 <p>Digital Literacy and Online Safety</p> <ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content 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 	<p>E-Safety</p> <ul style="list-style-type: none"> I can explain why I need to keep my password and personal information private. I can describe the things that happen online that I must tell an adult about. I can talk about why I should go online for a short amount of time. I can talk about why it is important to be kind and polite online and in real life. I know that not everyone is who they say they are on the Internet. <p>Programming</p> <ul style="list-style-type: none"> I can give instructions to my friend (using forward, backward and turn) and physically follow their instructions. I can tell you the order I need to do things to make something happen and talk about this as an algorithm. I can program a robot or software to do a particular task. I can look at my friend's program and tell you what will happen. I can use programming software to make objects move. I can watch a program execute and spot where it goes wrong so that I can debug it. <p>Handling Data</p> <ul style="list-style-type: none"> I talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder. I can make and save a chart or graph using the data I collect. I can talk about the data that is shown in my chart or graph. I am starting to understand a branching database. I can tell you what kind of information I could use to help me investigate a question. <p>Multimedia</p> <ul style="list-style-type: none"> I can use technology to organise and present my 	<p>Computer Science</p> <p>Hardware</p> <ul style="list-style-type: none"> Understanding what a computer is and that it's made up of different components Recognising that buttons cause effects and that technology follows instructions Learning how we know that technology is doing what we want it to do via its output. Using greater control when taking photos with tablets or computers Developing confidence with the keyboard and the basics of touch typing <p>Computational Thinking</p> <ul style="list-style-type: none"> Articulating what decomposition is Decomposing a game to predict the algorithms used to create it Using decomposition to decompose a story into smaller parts Learning what abstraction is Learning that there are different levels of abstraction Explaining what an algorithm is Following an algorithm Creating a clear and precise algorithm Learning that computers use algorithms to make predictions Learning that programs execute by following precise instructions Incorporating loops within algorithms <p>Programming</p> <ul style="list-style-type: none"> Using logical thinking to explore software, predicting, testing and explaining what it does Using an algorithm to write a basic computer program Learning what loops are Incorporating loops to make code more efficient <p>Information technology</p> <p>Using Software</p> <ul style="list-style-type: none"> Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts Using word processing software to type and reformat text Using software to create story animations Creating and labelling images <p>Using Data</p> <ul style="list-style-type: none"> Collecting and inputting data into a spreadsheet Interpreting data <p>Wider Use of technology</p> <ul style="list-style-type: none"> Learning how computers are used in the wider world 	<p>E-Safety</p> <ul style="list-style-type: none"> Appropriate and Inappropriate sites Cyber-bullying Digital footprint Keyword searching <p>Programming</p> <ul style="list-style-type: none"> Forward Backward Right-angle turn Algorithm Sequence Debug Predict <p>Multimedia</p> <ul style="list-style-type: none"> Paint effects Templates Animation Documents Index finger typing Enter/return Caps lock Backspace <p>Technology in Our Lives</p> <ul style="list-style-type: none"> Information sources Communication Purposes Website content <p>Data Handling</p> <ul style="list-style-type: none"> Capturing moments Magnified images Questions Data collection Graphs Charts Save Retrieve



	<p>ideas in different ways.</p> <ul style="list-style-type: none"> • I can use the keyboard on my device to add, delete and space text for others to read. • I can tell you about an online tool that will help me to share my ideas with other people. • I can save and open files on the device I use. <p>Digital Media</p> <ul style="list-style-type: none"> • I can tell you why I use technology in the classroom. • I can tell you why I use technology in my home and community. • I am starting to understand that other people have created the information I use. • I can identify benefits of using technology including finding information, creating and communicating. • I can talk about the differences between the Internet and things in the physical world. 		
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YEAR 3			
Subject	Knowledge	Skills	Key Vocabulary
<p>Computational Thinking</p> <ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>Computer Hardware and Digital Literacy</p> <ul style="list-style-type: none"> Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>E Safety</p> <ul style="list-style-type: none"> I can talk about what makes a secure password and why they are important. I can protect my personal information when I do different things online. I can use the safety features of websites as well as reporting concerns to an adult. I can recognise websites and games appropriate for my age. I can make good choices about how long I spend online. I ask an adult before downloading files and games from the Internet. I can post positive comments online. <p>Programming</p> <ul style="list-style-type: none"> I can break an open-ended problem up into smaller parts. I can put programming commands into a sequence to achieve a specific outcome. I keep testing my program and can recognise when I need to debug it. I can use repeat commands. I can describe the algorithm I will need for a simple task. I can detect a problem in an algorithm which could result in unsuccessful programming. <p>Handling Data</p> <ul style="list-style-type: none"> I can talk about the different ways data can be organised. I can search a ready-made database to answer questions. I can collect data help me answer a question. I can add to a database. I can make a branching database. I can use a data logger to monitor changes and can talk about the information collected. <p>Multimedia</p> <ul style="list-style-type: none"> I can create different effects with different technology tools. I can combine a mixture of text, graphics and 	<p>Computer Science</p> <p>Hardware</p> <ul style="list-style-type: none"> Understanding what the different components of a computer do and how they work together Drawing comparisons across different types of computers Learning what a server does <p>Networks and Data Representation</p> <ul style="list-style-type: none"> Learning what a network is and its purpose Identifying the key components within a network, including whether they are wired or wireless Recognising links between networks and the internet Learning how data is transferred <p>Computational Thinking</p> <ul style="list-style-type: none"> Using decomposition to explain the parts of a laptop computer Using decomposition to explore the code behind an animation Using repetition in programs Understanding that computers follow instructions Using an algorithm to explain the roles of different parts of a computer Using logical reasoning to explain how simple algorithms work Explaining the purpose of an algorithm Forming algorithms independently <p>Programming</p> <ul style="list-style-type: none"> Using logical thinking to explore more complex software; predicting, testing and explaining what it does Incorporating loops to make code more efficient Remixing existing code Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected <p>Information technology</p> <p>Using Software</p> <ul style="list-style-type: none"> Taking photographs and recording video to tell a story. Using software to edit and enhance their video adding music, sounds and text on screen with transitions <p>Using Email and the Internet</p> <ul style="list-style-type: none"> Learning to log in and out of an email account Writing an email including a subject, 'to' and 'from' 	<p>E-Safety</p> <ul style="list-style-type: none"> E-Safety rules Secure passwords Report abuse button Gaming Blogs <p>Programming</p> <ul style="list-style-type: none"> Sequence instructions Sequence debugging Test and improve Logo commands Sequence programming <p>Multimedia</p> <ul style="list-style-type: none"> Multimedia Presentations Alignment Brush size Repeats Reflections Green screening Amend Copy Paste <p>Technology in Our Lives</p> <ul style="list-style-type: none"> School network Devices Computer parts Collaborate Appropriate online communication Search tools Appropriate websites Owner <p>Data Handling</p>

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	<p>sound to share my ideas and learning.</p> <ul style="list-style-type: none"> • I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker. • I can evaluate my work and improve its effectiveness. • I can use an appropriate tool to share my work online. <p>Technology in our lives</p> <ul style="list-style-type: none"> • I can save and retrieve work on the Internet, the school network or my own device. • I can talk about the parts of a computer. • I can tell you ways to communicate with others online. • I can describe the World Wide Web as the part of the Internet that contains websites. • I can use search tools to find and use an appropriate website. • I think about whether I can use images that I find online in my own work. 	<ul style="list-style-type: none"> • Sending an email with an attachment • Replying to an email <p>Using Data</p> <ul style="list-style-type: none"> • Understanding the vocabulary associated with databases: field, record, data • Learning about the pros and cons of digital versus paper databases • Sorting and filtering databases to easily retrieve information • Creating and interpreting charts and graphs to understand data <p>Digital Literacy</p> <p>Wider Use of technology</p> <ul style="list-style-type: none"> • Understanding the purpose of emails. • Learning to be a responsible digital citizen; understanding their responsibilities to treat others respectfully and recognising when digital behaviour is unkind • Learning about cyberbullying • Learning that not all emails are genuine, recognising when an email might be fake and what to do about it. 	<ul style="list-style-type: none"> • Questioning • Database • Construct • Contribute • Recording data • Data logger • Present data
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YEAR 4			
Subject	Knowledge	Skills	Key Vocabulary
<p>Computational Thinking</p> <ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>Computer Hardware and Digital Literacy</p> <ul style="list-style-type: none"> Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>E Safety</p> <ul style="list-style-type: none"> I choose a secure password and screen name when I am using a website. I can talk about the ways I can protect myself and my friends from harm online. I use the safety features of websites as well as reporting concerns to an adult. I know that anything I share online can be seen by others. I choose websites, apps and games that are appropriate for my age. I can help my friends make good choices about the time they spend online. I can talk about why I need to ask a trusted adult before downloading files and games from the Internet. I comment positively and respectfully online and through text messages. <p>Programming</p> <ul style="list-style-type: none"> I can use logical thinking to solve an open-ended problem by breaking it up into smaller parts. I can use an efficient procedure to simplify a program. I can use a sensor to detect a change which can select an action within my program. I know that I need to keep testing my program while I am putting it together. I can use a variety of tools to create a program. I can recognise an error in a program and debug it. I recognise that an algorithm will help me to sequence more complex programs. I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology. <p>Handling Data</p> <ul style="list-style-type: none"> I can organise data in different ways. I can collect data and identify where it could be inaccurate. I can plan, create and search a database to answer questions. 	<p>Computer Science</p> <p>Hardware</p> <ul style="list-style-type: none"> Learning about the purpose of routers <p>Networks and Data Representation</p> <ul style="list-style-type: none"> Consolidating understanding of the key components of a network Understanding that websites & videos are files that are shared from one computer to another Learning about the role of packets Understanding that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration <p>Computational Thinking</p> <ul style="list-style-type: none"> Solving unplugged problems by decomposing them into smaller parts Using decomposition to understand the purpose of a script of code Using decomposition to help solve problems Identifying patterns through unplugged activities Using past experiences to help solve new problems Using abstraction to identify the important parts when completing both plugged and unplugged activities Creating algorithms for a specific purpose <p>Programming</p> <ul style="list-style-type: none"> Understanding that websites can be altered by exploring the code beneath the site Coding a simple game Using abstraction and pattern recognition to modify code <p>Information technology</p> <p>Using Software</p> <ul style="list-style-type: none"> Building a web page and creating content for it Designing and creating a webpage for a given purpose Use Google online software for documents, presentations, forms and spreadsheets. Work collaboratively with others <p>Using Data</p> <ul style="list-style-type: none"> Designing a weather station which gathers and records sensor data <p>Digital Literacy</p> <p>Wider Use of technology</p> <ul style="list-style-type: none"> Understanding that software can be used collaboratively online to work as a team 	<p>E-Safety</p> <ul style="list-style-type: none"> E-Safety rules Secure passwords Report abuse button Gaming Blogs <p>Programming</p> <ul style="list-style-type: none"> Type and edit logo commands Sensors Open-ended problems Bugs in programs Complex programming <p>Multimedia</p> <ul style="list-style-type: none"> Creating and modifying Specific purpose Photo modifying Keyboard shortcuts Bullet points Spell check Constructive feedback <p>Technology in Our Lives</p> <ul style="list-style-type: none"> Different networks Information collection Reliability Owners <p>Data Handling</p> <ul style="list-style-type: none"> Database creation Database searches Inaccurate data



	<ul style="list-style-type: none"> • I can choose the best way to present data to my friends. • I can use a data logger to record and share my readings with my friends. <p>Multimedia</p> <ul style="list-style-type: none"> • I can use photos, video and sound to create an atmosphere when presenting to different audiences. • I am confident to explore new media to extend what I can achieve. • I can change the appearance of text to increase its effectiveness. • I can create, modify and present documents for a particular purpose. • I can use a keyboard confidently and make use of a spellchecker to write and review my work. • I can use an appropriate tool to share my work and collaborate online. • I can give constructive feedback to my friends to help them improve their work and refine my own work. <p>Technology in Our Lives</p> <ul style="list-style-type: none"> • I can tell you whether a resource I am using is on the Internet, the school network or my own device. • I can identify key words to use when searching safely on the World Wide Web. • I think about the reliability of information I read on the World Wide Web. • I can tell you how to check who owns photos, text and clipart. • I can create a hyperlink to a resource on the World Wide Web. • I can recognise that websites use different methods to advertise products 	<ul style="list-style-type: none"> • Recognising what appropriate behaviour is when collaborating with others online • Recognising that information on the Internet might not be true or correct and that some sources are more trustworthy than others 	
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YEAR 5			
Subject	Knowledge	Skills	Key Vocabulary
<p>Computational Thinking</p> <ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>Computer Hardware and Digital Literacy</p> <ul style="list-style-type: none"> Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>E Safety</p> <ul style="list-style-type: none"> I can choose a secure password and screen name. I protect my password and other personal information. I can explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult. I know that anything I post online can be seen, used and may affect others. I can talk about the dangers of spending too long online or playing a game. I can explain the importance of communicating kindly and respectfully. I can discuss the importance of choosing an age-appropriate website, app or game. I can explain why I need to protect my computer or device from harm. <p>Programming</p> <ul style="list-style-type: none"> I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. I can refine a procedure using repeat commands to improve a program. I can use a variable to increase programming possibilities. I can change an input to a program to achieve a different output. I can use 'if' and 'then' commands to select an action. I can talk about how a computer model can provide information about a physical system. I can use logical reasoning to detect and debug mistakes in a program. I use logical thinking, imagination and creativity to extend a program. <p>Handling Data</p> <ul style="list-style-type: none"> I can use a spreadsheet and database to collect and record data. I can choose an appropriate tool to help me collect data. 	<p>Computer Science</p> <p>Hardware</p> <ul style="list-style-type: none"> Learning that external devices can be programmed by a separate computer Learning the difference between ROM and RAM Recognising how the size of RAM affects the processing of data Understanding the fetch, decode, execute cycle <p>Networks and Data Representation</p> <ul style="list-style-type: none"> Learning the vocabulary associated with data: data and transmit Learning how the data for digital images can be compressed Recognising that computers transfer data in binary and understanding simple binary addition Relating binary signals (Boolean) to the simple character-based language, ASCII Learning that messages can be sent by binary code, reading binary up to 8 characters and carrying out binary calculations Understanding how bit patterns represent images as pixels <p>Computational Thinking</p> <ul style="list-style-type: none"> Decomposing animations into a series of images Decomposing a program without support Decomposing a story to be able to plan a program to tell a story Predicting how software will work based on previous experience Writing more complex algorithms for a purpose <p>Programming</p> <ul style="list-style-type: none"> Programming an animation Iterating and developing their programming as they work Beginning to use nested loops (loops within loops) Debugging their own code Writing code to create a desired effect Using a range of programming commands Using repetition within a program Amending code within a live scenario <p>Information technology</p> <p>Using Software</p> <ul style="list-style-type: none"> Using logical thinking to explore software more independently, making predictions based on their previous experience Using software programme Sonic Pi to create music Using the animation software: Stop Motion to create video animation Identify ways to improve and edit final products 	<p>E-Safety</p> <ul style="list-style-type: none"> Responsible online communication Informed choices Virus threats Blogs Messaging <p>Programming</p> <ul style="list-style-type: none"> Explore procedures Refine procedures Variable Hardware and software control Change inputs Different outputs Articulate solutions Commands <p>Multimedia</p> <ul style="list-style-type: none"> Online sharing Multimedia effects Multimedia modification Transitions Hyperlinks Editing tools Refining Online sharing <p>Technology in Our Lives</p> <ul style="list-style-type: none"> Computing devices Internet parts Collaboration Responsibility Searching strategies Webpages <p>Data Handling</p> <ul style="list-style-type: none"> Spreadsheets Complex searches (and/or: </>)



	<ul style="list-style-type: none"> • I can present data in an appropriate way. • I can search a database using different operators to refine my search. • I can talk about mistakes in data and suggest how it could be checked. <p>Multimedia</p> <ul style="list-style-type: none"> • I can use text, photo, sound and video editing tools to refine my work. • I can use the skills I have already developed to create content using unfamiliar technology. • I can select, use and combine the appropriate technology tools to create effects that will have an impact on others. • I can select an appropriate online or offline tool to create and share ideas. • I can review and improve my own work and support others to improve their work. <p>Technology in Our Lives</p> <ul style="list-style-type: none"> • I can describe different parts of the Internet. • I can use different online communication tools for different purposes. • I can use a search engine to find appropriate information and check its reliability. • I can recognise and evaluate different types of information I find on the World Wide Web. • I can describe the different parts of a webpage. • I can find out who the information on a webpage belongs to • I know which resources on the Internet I can download and use. • I can describe the ways in which websites advertise their products to me. 	<ul style="list-style-type: none"> • Independently learning how to use 3D design software package TinkerCAD <p>Using Email and Internet</p> <ul style="list-style-type: none"> • Developing searching skills to help find relevant information on the internet • Learning how to use search engines effectively to find information, focussing on keyword searches and evaluating search returns <p>Using Data</p> <ul style="list-style-type: none"> • Understanding how data is collected <p>Digital Literacy</p> <p>Wider Use of technology</p> <ul style="list-style-type: none"> • Learning what a search engine is • Identifying possible dangers online and learning how to stay safe. • Creating an animation about digital safety • Recognising that information on the Internet might not be true or correct and learning ways of checking validity • Learning to use an online community 	<ul style="list-style-type: none"> • Problem solving • Present answers • Analyse information • Question data • Interpret
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YEAR 6			
Subject	Knowledge	Skills	Key Vocabulary
<p>Computational Thinking</p> <ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>Computer Hardware and Digital Literacy</p> <ul style="list-style-type: none"> Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>E-Safety</p> <ul style="list-style-type: none"> I protect my password and other personal information. I can explain the consequences of sharing too much about myself online. I support my friends to protect themselves and make good choices online, including reporting concerns to an adult. I can explain the consequences of spending too much time online or on a game. I can explain the consequences to myself and others of not communicating kindly and respectfully. I protect my computer or device from harm on the Internet. <p>Programming</p> <ul style="list-style-type: none"> I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. I can explain and program each of the steps in my algorithm. I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. I can recognise when I need to use a variable to achieve a required output. I can use a variable and operators to stop a program. I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen. I can use logical reasoning to detect and correct errors in a algorithms and programs. <p>Handling Data</p> <ul style="list-style-type: none"> I can plan the process needed to investigate the world around me. I can select the most effective tool to collect data for my investigation. I can check the data I collect for accuracy and plausibility. I can interpret the data I collect. I can present the data I collect in an appropriate 	<p>Computer Science</p> <p>Hardware</p> <ul style="list-style-type: none"> Learning about the history of computers and how they have evolved over time Using the understanding of historic computers to design a computer of the future Learning how barcodes, QR codes and RFID work Learning about some of the methods which cause data corruption <p>Networks and Data Representation</p> <ul style="list-style-type: none"> Understanding that computer networks provide multiple services <p>Computational Thinking</p> <ul style="list-style-type: none"> Decomposing a program into an algorithm Using past experiences to help solve new problems Writing increasingly complex algorithms for a purpose <p>Programming</p> <ul style="list-style-type: none"> Debugging quickly and effectively to make a program more efficient Remixing existing code to explore a problem Using and adapting nested loops Programming using the language Python Changing a program to personalise it Evaluating code to understand its purpose Predicting code and adapting it to a chosen purpose Altering a website's code to create changes <p>Information technology</p> <p>Using Software</p> <ul style="list-style-type: none"> Using logical thinking to explore software independently, iterating ideas and testing continuously Using search and word processing skills to create a presentation Planning, recording and editing a radio play Creating and editing sound recordings for a specific purpose Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions to create a video advert Using design software TinkerCAD to design a product Creating a website with embedded links and multiple pages <p>Using Email and Internet</p> <ul style="list-style-type: none"> Understanding how search engines work <p>Using Data</p>	<p>E-Safety</p> <ul style="list-style-type: none"> Responsible online communication Informed choices Virus threats Blogs Messaging <p>Programming</p> <ul style="list-style-type: none"> Predicting outputs Plan, program, test and review a program Program writing Control mimics and devices Sensors Measure input Create variables Link errors <p>Multimedia</p> <ul style="list-style-type: none"> Appropriate online tools Audience Atmosphere Structure Copyright Information collection HTML code Storing <p>Technology in Our Lives</p> <ul style="list-style-type: none"> Information movement Connecting devices Different audiences Research strategies Search result rankings Acknowledge resources



	<p>way.</p> <ul style="list-style-type: none"> I use the skills I have developed to interrogate a database. <p>Multimedia</p> <ul style="list-style-type: none"> I can talk about audience, atmosphere and structure when planning a particular outcome. I can confidently identify the potential of unfamiliar technology to increase my creativity. I can combine a range of media, recognising the contribution of each to achieve a particular outcome. I can tell you why I select a particular online tool for a specific purpose. I can be digitally discerning when evaluating the effectiveness of my own work and the work of others. <p>Technology in Our Lives</p> <ul style="list-style-type: none"> I can tell you the Internet services I need to use for different purposes. I can describe how information is transported on the Internet. I can select an appropriate tool to communicate and collaborate online. I can talk about the way search results are selected and ranked. I can check the reliability of a website. I can tell you about copyright and acknowledge the sources of information that I find online. I know that websites can use my data to make money and target their advertising 	<ul style="list-style-type: none"> Understanding how barcodes, QR codes and RFID work Gathering and analysing data in real time Creating formulas and sorting data within spreadsheets <p>Digital Literacy</p> <p>Wider Use of technology</p> <ul style="list-style-type: none"> Learning about the Internet of Things and how it has led to 'big data'. Learning how 'big data' can be used to solve a problem or improve efficiency <p>Digital Literacy</p> <ul style="list-style-type: none"> Understanding the importance of secure passwords and how to create them Using search engines safely and effectively Recognising that updated software can help to prevent data corruption and hacking 	<p>Data Handling</p> <ul style="list-style-type: none"> Generate Process Interpret Store Present information Plausibility Appropriate data tool Interrogate Investigations
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