Cheriton Bishop Community Primary School Primary Computing Curriculum Plan

We recognise Computing as a valuable part of the children's entitlement to a broad and balanced curriculum. Computing provides the children with the opportunities to develop and extend lifelong skills, which will evolve with the rapidly changing technology in our world. Our high-quality computing curriculum aims to engage, inspire and challenge pupils, equipping them with the knowledge and skills required to be both digitally literate and digitally resilient, and safe, in the modern world.

As pupils progress, they can think critically and creatively to develop a more rigorous understanding of computing. They will think like a computing scientist, developing their skills to digitally create and their ability to solve (debug) problems. An integral part of our Computing curriculum is online safety and our digital footprint where we equip the children with the knowledge, skills and confidence of how to stay safe and responsibly use the technological resources available to them and others.

Vocabulary

Children's command of vocabulary is fundamental to learning and progress across the curriculum. Vocabulary is developed actively, building systematically on pupil's current knowledge and deepening their understanding of etymology and morphology (word origins and structures) to increase their store of words. Simultaneously, pupils make links between known and new vocabulary and discuss and apply shades of meaning. In this way, children expand the vocabulary choices that are available to them. It is essential to introduce technical vocabulary which define each curriculum subject. Vocabulary development is underpinned by an oracy culture and a tiered approach. High value is placed on the conscious, purposeful selection of well-chosen vocabulary and appropriate sentence structure to enrich access to learning and feed into written work across the curriculum.

Please click here for the KS1 vocabulary list and here for the KS2 vocabulary list.

The learning within mixed-age classes is taught as a phase through a two-year rolling programme. Teachers use Teach Computing schemes of work as the core planning documents, in conjunction with the progression of skills outlined below, to ensure extensive, varied and progressive computing curriculum coverage. Computing is taught weekly. Internet Safety sessions are taught with each class at the beginning of each half term and are highlighted in assemblies and whole school events such as 'internet safety day' 'mental health awareness week' and specific safeguarding foci. E-safety is also taught as part of the school's PSHE curriculum.

The National Curriculum

Key Stage 1
Pupils should be taught to;
- **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**

Key Stage 2
Pupils should be taught to:
- **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**
- **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.**

Progression of Key Skills

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
E-safety & E-sense	Pupils should be taught to 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.		Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about content and contact? Be discerning in evaluating digital content.			
	Can I keep my password private? Can I tell you what personal information is? Can I tell an adult when I see something unexpected or worrying online? Can I talk about why it's important to be kind and polite? Can I recognise an age appropriate website? Can I agree and follow sensible e-safety rules?	Can I explain why I need to keep my password and personal information private? Can I describe the things that happen online that I must tell an adult about? Can I talk about why I should go online for a short amount of time? Can I talk about why it is important to be kind and polite online and in real life? Can I understand that not everyone is who they say they are on the internet?	Can I talk about what makes a secure password and why they are important? Can I protect my personal information when I do different things online? Can I use the safety features of websites as well as reporting concerns to an adult? Can I recognise websites and games appropriate for my age? Can I make good choices about how long I spend online? Can I ask an adult before downloading files and games from the internet? Can I post positive comments online?	Can I choose a secure password when I am using a website? Can I talk about the way I protect myself and my friends from harm online? Can I use the safety features of websites as well as reporting concerns to an adult? Can I understand that anything I post online can be seen by others? Can I choose websites and games that are appropriate for my age? Can I help my friends make good choices about the time they spend online? Can I talk about why I need to ask a trusted adult before downloading files and games from the internet? Can I comment positively and respectfully online?	Can I protect my password and other personal information? Can I explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult? Can I understand that anything I post online can be seen, used and may affect others? Can I talk about the dangers of spending too long online or playing a game? Can I explain the importance of communicating kindly and respectfully? Can I discuss the importance of choosing an age-appropriate website or game? Can I explain why I need to protect my computer or device from harm? Can I understand which resources on the internet Can I download and use?	Can I protect my password and other personal information? Can I explain the consequences of sharing too much information about myself online? Can I support my friends to protect themselves and make good choices online, including reporting concerns to an adult? Can I explain the consequences of spending too much time online or on a game? Can I explain the consequences to myself and others of not communicating kindly and respectfully? Can I protect my computer or device from harm on the internet?
Programming	Pupils should be taught to 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.		Pupils should be taught to 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? 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.			
	Can I give instructions to my friend and follow their instructions to move around? Can I describe what happens when I press buttons on a robot? Can I press the buttons in the correct order to make my robot do what I want? Can I describe what actions I will need to do to make something happen and begin to use the word 'algorithm'? Can I begin to predict what will happen for a short sequence of instructions? Can I begin to use software/apps to create movement and patterns on a screen? Can I use the word 'debug' when I correct mistakes when I program?	Can I give instructions to my friend (using forward, backward and turn) and physically follow their instructions? Can I tell you the order I need to do things to make something happen and talk about this as an algorithm? Can I program a robot or software to do a particular task? Can I look at my friend's program and tell you what will happen? Can I use programming software to make objects move? Can I watch a program execute and spot where it goes wrong so that Can I debug it?	Can I break an open-ended problem up into smaller parts? Can I put programming commands into a sequence to achieve a specific outcome? Can I keep testing my program and can recognise when I need to debug it? Can I use repeat commands? Can I describe the algorithm I will need for a simple task? Can I detect a problem in an algorithm which could result in unsuccessful programming?	Can I use logical thinking to solve an open-ended problem by breaking it up into smaller parts? Can I use an efficient procedure to simplify a program? Can I use a sensor to detect a change which can select an action within my program? Can I know that I need to keep testing my program while I am putting it together? Can I use a variety of tools to create a program? Can I recognise an error in a program and debug it? Can I recognise that an algorithm will help me sequence more complex programs? Can I recognise that using algorithms will also help solve problems in other learning such as maths, science and design technology?	Can I decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program? Can I refine a procedure using repeat commands to improve a program? Can I use a variable to increase programming possibilities? Can I change an input to a program to achieve a different output? Can I use 'if' and 'then' commands to select an action? Can I talk about how a computer model can provide information about a physical system? Can I use logical reasoning to detect and debug mistakes in a program? Can I use logical thinking,	Can I deconstruct a problem into smaller steps, recognising similarities to solutions used before? Can I explain and program each of the steps in my algorithm? Can I evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm? Can I recognise when I need to use a variable to achieve a required output? Can I use a variable and operators to stop a program? Can I use different inputs (including sensors) to control a device or onscreen action and predict what will happen? Can I use logical reasoning to detect and correct errors in

						imagination and creativity to extend a program?	algorithms and programs?
Handling Data	Pupils should be taught to use technology purposefully to organise and manipulate digital content.		Pupils should be taught to 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.				
	Can I talk about the different ways in which information can be shown? Can I use technology to collect information, including photos, video and sound? Can I sort different kinds of information and present it to others? Can I add information to a pictograph and talk to you about what I have found out?	Can I talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder? Can I make and save a chart or graph using the data I collect? Can I talk about the data that is shown in my chart or graph? Can I start to understand a branching database? Can I tell you what kind of information I could use to help me investigate a question?	Can I talk about the different ways data can be organised? Can I search a ready-made database to answer questions? Can I collect data to help me answer a question? Can I add to a database? Can I make a branching database? Can I use a data logger to monitor changes and can talk about the information collected?	Can I organise data in different ways? Can I collect data and identify where it could be inaccurate? Can I plan, create and search a database to answer questions? Can I choose the best way to present data to my friends? Can I use a data logger to record and share my readings with my friends?	Can I use a spreadsheet and database to collect and record data? Can I choose an appropriate tool to help me collect data? Can I present data in an appropriate way? Can I search a database using different operators to refine my search? Can I talk about mistakes in data and suggest how it could be checked?	Can I plan the process needed to investigate the world around me? Can I select the most effective tool to collect data for my investigation? Can I check the data I collect for accuracy and plausibility? Can I interpret the data I collect? Can I present the data I collect in an appropriate way? Can I use the skills I have developed to interrogate a database?
Multimedia	Pupils should be taught to use technology purposefully to create digital content.		Pupils should be taught to 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.				
	Can I be creative with different technology tools? Can I use technology to create and present my ideas? Can I use the keyboard or a word bank on my device to enter text? Can I save information in a special place and retrieve it again?	Can I use technology to organise and present my ideas in different ways? Can I use the keyboard on my device to add, delete and space text for others to read? Can I tell you about an online tool that will help me to share my ideas with other people? Can I save and open files on the device I use?	Can I create different effects with different technology tools? Can I combine a mixture of text, graphics and sound to share my ideas and learning? Can I use appropriate keyboard commands to amend text on my device, including making use of a spellchecker? Can I evaluate my work and improve its effectiveness? Can I use an appropriate tool to share my work online?	Can I use photos, video and sound to create an atmosphere when presenting to different audiences? Can I explore new media to extend what I achieve? Can I change the appearance of text to increase its effectiveness? Can I create, modify and present documents for a particular purpose? Can I use a keyboard confidently and make use of a spellchecker to write and review my work? Can I use an appropriate tool to share my work and collaborate online? Can I give constructive feedback to my friends to help them improve their work and refine my own work?	Can I use text, photo, sound and video editing tools to refine my work? Can I use the skills I have already developed to create content using unfamiliar technology? Can I select, use and combine the appropriate technology tools to create effects that will have an impact on others? Can I select an appropriate online or offline tool to create and share ideas? Can I review and improve my work and support others to improve their work?	Can I talk about audience, atmosphere and structure when planning a particular outcome? Can I confidently identify the potential of unfamiliar technology to increase my creativity? Can I combine a range of media, recognising the contribution of each to achieve a particular outcome? Can I tell you why I select a particular online tool for a specific purpose? Can I be digitally discerning when evaluating the effectiveness of my work and the work of others?
Technology in our lives	Pupils should be taught to use technology purposefully to store and retrieve digital content and to recognise common uses of information technology beyond school.		Pupils should be taught to 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.				

Can I recognise the way we use technology in our classroom? Can I recognise ways that technology is used in my home and community? Can I use links to websites to find information? Can I begin to identify some of the benefits of using technology?	Can I tell you why I use technology in the classroom? Can I tell you why I use technology in my home and community? Can I start to understand that other people have created the information I use? Can I identify benefits of using technology including finding information, creating and communicating? Can I talk about the differences between the internet and things in the physical world?	Can I save and retrieve work on the internet, the school network or my own device? Can I talk about the parts of a computer? Can I tell you ways to communicate with others online? Can I describe the World Wide Web as the part of the internet that contains websites? Can I use search tools to find and use an appropriate website? Can I think about whether I can use images that I find online in my own work?	Can I tell you whether a resource I am using is on the internet, the school network or my own device? Can I identify key words to use when searching safely on the World Wide Web? Can I think about the reliability of information I read on the World Wide Web? Can I tell you how to check who owns photos, text and clipart? Can I create a hyperlink to a resource on the World Wide Web?	Can I describe different parts of the internet? Can I use different online communication tools for different purposes? Can I use a search engine to find appropriate information and check its reliability? Can I recognise and evaluate different types of information I find on the World Wide Web? Can I describe the different parts of a webpage? Can I find out who the information on a webpage belongs to?	Can I tell you the internet services I need to use for different purposes? Can I describe how information is transported on the internet? Can I select an appropriate tool to communicate and collaborate online? Can I talk about the way search results are selected and ranked? Can I check the reliability of a website? Can I tell you about copyright and acknowledge the sources of information that I find online?

In order to assess impact - a guide

Learning in computing will be enjoyable, challenging and progressive within the classroom and online home learning. Teachers will have high expectations and quality evidence will be presented in a variety of forms. Children will use digital and technological vocabulary accurately, alongside a progression in their technical skills. They will be confident using a range of hardware and software and will produce high-quality purposeful products. Children will see the digital world as part of their world, extending beyond school, and understand that they have choices to make. They will be confident and respectful digital citizens going on to lead happy and healthy digital lives. Evidence and assessment of learning outcomes are detailed in children's individual work saved on Teams, in ongoing formative assessment, and through the completion of summative assessments at the end of each unit of work.