

 Computing	Intent At Barley Croft, we aim to provide children with a variety of computing experiences and equip them with the skills needed for an ever-changing digital world. We intend to provide our children with opportunities to use computing across the curriculum to: enhance learning, enable them to develop problem solving skills and encourage them to think creatively. We aim to develop independent learners who are fluent in their understanding of computer science by teaching them how to use a range of programs where they are able to design, create and evaluate their work. We hope, that by providing our students with varied and frequent use of technology, they begin to understand the many ways in which technology can be used effectively both in and out of the classroom and also give them an awareness of some of the many careers that are related to computer science. With technology playing such a pivotal part in our students' lives, it is vital that we teach our students to use technology positively, responsibly and safely. We ensure our children are taught the importance of safe internet use. In every year group, e-safety is a key focus. Our ambition is for our children to leave us having an established understanding of how to stay safe while using technology and equipped with computing skills which they will be able to apply to their further education and future careers. Implementation At Barley Croft, Computing is covered in part through the themes of the REAL projects. Early Years In the Foundation Stage, children will be given the opportunity to access play-based experience of ICT in a range of context such as iPads, Bee-Bots, interactive whiteboards, cameras and battery-operated toys, metal detectors, control remotely operated toys including outdoor play. ICT will be used to support children learning in all areas of the curriculum to develop their confidence, control and communication skill s. Key Stage 1 During Key Stage 1, children will begin to develop their use of programs and apps to communicate, understand and p resent their learning in different subjects. They will be able to write and test simple programs and know how to communicate safely and respectfully online, keeping personal information private. Key Stage 2 During Key Stage 2, children will learn to use a wide range of apps and programs to accomplish specific goals. Through engaging tasks and challenges, children will develop a deep understanding of computer science, knowing how to develop and create their own programs for a range of purposes. They will also develop their digital literacy, showing they know how to use technology respectfully and safely. Impact • Children will be confident users of technology, able to use it to accomplish a wide variety of goals, both at home and in school • Children will have a secure and comprehensive knowledge of the implications of technology and digital systems. This is important in a society where technologies and trends are rapidly evolving • Children will be able to apply the British values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems • Children will know how to keep safe – protect passwords & personal information, be a good online citizen, seek help if worried and manage risk. • Children will be able to use digital devices/technology to communicate successfully eg write a letter • Children will understand the algorithms used in a coded program – being able know its purpose and to test & de-bug it. • Children will be able to use code to write algorithms and programs to make software or hardware take inputs and make things happen eg a robot to follow a line • Children will be able to use technology to search for information; checking the reliability of text, photos, video. Eg a study in propaganda (now and in WW2) • Children will know what information from the internet can be used (copyright) and acknowledge it. • Children will be able to research and evaluate images & video using digital devices and manipulate them as required • Children will be able to use and publish audio, images & video to suit a purpose and for a specific audience.							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
	NC Objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content		(Word processing/Typing skills and knowledge) Co2/1.6 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.			
	Skills and knowledge	I can play on a touch screen game and use computers/keyboards/mouse in role play I can I can type letters with increasing confidence using a keyboard and tablet.	I can type words correctly on a digital device. I can use the space bar to make space and delete to delete letters/words I can make a new line using enter/return	I can use the space bar only once between words and use touch to navigate to words letter to edit I can copy and paste images and text I can use caps locks for capital letters. I can add images alongside text in a word processed document. I can dictate longer passages into a digital device with accurate punctuation.	I can use index fingers on keyboard home keys (f/j), use left fingers for a/s/ d/f/g, and use right fingers for h/j/k/l I can edit the style and effect of my text and images to make my document more engaging and eye-catching. For example, borders and shadows. I can use cut, copy and paste to quickly duplicate and organise text.	I can combine digital images from different sources, objects, and text to make a final piece of a variety of tasks: posters, documents, eBooks, scripts, leaflets. I can confidently and regularly use text shortcuts such as cut, copy and paste and delete to organise text I can use font sizes appropriately for audience and purpose. I can use spell check and thesaurus including through Siri and other AI technology	I can start to apply other useful effects to my documents such as hyperlinks. I can import sounds to accompany and enhance the text in my document. I can organise and reorganise text on screen to suit a purpose	I can confidently choose the best application to demonstrate my learning. I can format text to suit a purpose. I can publish my documents online regularly and discuss the audience and purpose of my content.
	Resources	iPad, laptops, keyboard Purple Mash program 2type	Word documents iPad & laptops	Word documents iPad, laptops,	Word documents iPad, laptops,	Word documents iPad, laptops,	Word documents iPad, laptops,	
	EYFS	Year 1	Year 2	Year 3	Data handling Year 4	Year 5	Year 6	

NC objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. Collect information as photos or sound files	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content. Look at how data is representing digitally	Co2/1.6 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.				
Skills and knowledge	I can use a simple pictogram or set of photos to count and organise information	I can sort images or text into two or more categories on a digital device. I can collect data on a topic. I can create a pictogram. I can record myself explaining what I have done and what it shows me.	I can sort digital objects into a range of charts such as Venn diagrams, Carroll diagrams and bar charts using different apps and software. I can orally record myself explaining what the data shows me.	I can start to input simple data I can present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool)	I can input data into a spreadsheet and export the data in a variety of ways: charts, bar charts, pie charts. I understand how data is collected.	I can create and publish my own online questionnaire and analyse the results. I can use simple formulae to solve calculations including =sum and other statistical functions I can edit and format difference cells in a spreadsheet.	I can write spreadsheet formula to solve more challenging maths problems. I can create and publish my own online quiz with a range of media (images and video) I can compare a range of digital content sources and rate them in terms of content quality and accuracy.
Resources	2count	2 count	2investigate 2count SeeSaw	Data handling tool	Data handling tool	Data handling tool	Data handling tool
	EYFS	Year 1	Year 2	Computer Science Year 3	Year 4	Year 5	Year 6
NC Objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content.		Co2/1.6 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.			
Skills and knowledge	I can record my voice over a picture. I can create a simple digital collage. I can move and resize images with my fingers or mouse.	I can add sound, pictures and text to a program such as 2Create a Story.	I can include photos, text and sound in my creations.	I can annotate an image with videos I can create a simple digital timeline/mind map I can create a simple web page.	I can share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards. (Across units)	I can use the most appropriate form of online communication according to the digital content. For example, use 2Email, 2Blog and Display Boards. I can make appropriate improvements to digital work I have created.	I can create a web site which includes a variety of media. I can design an app prototype that links multimedia pages together with hyperlinks. I can design and create my own online blogs. I can evaluate my own content and consider ways to improvements. I can explain the difference between the internet and the World Wide Web.
Resources	iPad, Audio apps, Talking Tins	iPad scratch junior , Audio apps	iPad scratch junior, Audio apps	iPad, Scratch program , Audio apps	iPad, Scratch program , Audio apps	iPad, Scratch program , Audio apps	iPad, Scratch program , Audio apps
	EYFS	Year 1 Year 2		Coding and Programming Year 3 Year 4 Year 5 Year 6			
NC Objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Co2/1.1 understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Co2/1.2 create and debug simple programs Co2/1.3 use logical reasoning to predict the behaviour of simple programs		Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Co2/1.4 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			
Skills and knowledge	I can use a mouse, touch screen or appropriate access device to target and select options on screen	I can create a simple program e.g. sequence of instructions for a Bee Bot	I can explain an algorithm is a set of instructions to complete a task. I know I need to carefully plan my algorithm so it will work when I make it into code.	I can design an algorithm carefully, thinking about what I want it to do and how I can turn it into code.	I can turn a real-life situation to solve into an algorithm, using a design that shows how I can accomplish this in code.	I can make more complex real-life problems into algorithms for a program. I can test and debug my programs as I work.	I can turn a complex programming task into an algorithm. I can identify the important aspects of a programming task (abstraction).

	I can input a simple sequence of commands to control a digital device with support (Bee Bot)	I can use sequence in programs I can locate and fix bugs in my program	I can design a simple program using 2Code that achieves a purpose. I can find and correct some errors in my program. I can say what will happen in a program. I can spot something in a program that has an action or effect (does something).	I can identify an error in my program and fix it.		I can convert (translate) algorithms that contain sequence, selection and repetition into code that works. I can use sequence, selection, repetition, and some other coding structures in my code. I can organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently. I can use logical methods to identify the cause of any bug with support to identify the specific line of code.	I can decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work. I can test and debug my program as I work on it and use logical methods to identify a cause of a bug. I can identify a specific line of code that is causing a problem in my program and attempt a fix. I can translate algorithms that include sequence, selection and repetition into code and nest these structures within each other. I can use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object
Resources	Bee-Bot	Bee bot , Daisy the Dino, Scratch Junior	Bee Bot, Scratch Junior	Scratch /code.org	Scratch /code.org	Scratch /code.org	Scratch /code.org
				Computer Networks Year 3	Year 4	Year 5	Year 6
NC Objectives				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			
Skills and knowledge				I can understand that computers in a school are connected together in a network I can understand why computers are networked I can identify different ways that the internet can be used for communication. I can use email such as 2Email to respond to others appropriately and attach files.	I can understand that servers on the Internet are located across the planet I can understand how email is sent across the Internet	I can understand how we view web pages on the Internet I can use search technologies effectively I can appreciate how pages are ranked in a search engine	I can explain the difference between the internet and the World Wide Web. I can explain what a WAN and LAN is and describe the process of how access to the internet in school is possible.
Resources				Laptops,ipads,code.org	Laptops,ipads,code.org	Laptops,ipads,code.org	Laptops,ipads,code.org
	EYFS	Year 1	Year 2	Digital Literacy and E-Safety Year 3	Year 4	Year 5	Year 6
NC Objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies		Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact			
Skills and knowledge	I can recognise that I can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who asks me to do something that makes me feel sad, embarrassed or upset. I can explain how this could be either in real life or online.	I can recognise that there may be people online who could make me feel sad, embarrassed or upset. If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust.	I can explain how other people's identity online can be different to their identity in real life. I can describe ways in which people might make themselves look different online. I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help.	I can explain what is meant by the term 'identity'. I can explain how I can represent myself in different ways online. I can explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media).	I can explain how my online identity can be different to the identity I present in 'real life' Knowing this, I can describe the right decisions about how I interact with others and how others perceive me.	I can explain how identity online can be copied, modified or altered. I can demonstrate responsible choices about my online identity, depending on context	I can describe ways in which media can shape ideas about gender. I can identify messages about gender roles and make judgements based on them. I can challenge and explain why it is important to reject inappropriate messages about gender online. I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline.

							I can explain why I should keep asking until I get the help I need.
Resources	e-Safety – Stranger danger	Hectors world	Smart crew videos, online safety resources	Use Smart Crew and appropriate KS2 videos e.g. Lee and Kim, to discuss e-Safety issues – safe and unsafe practices. Episodes 1-5 https://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew/chapter5 Use KS2 videos to discuss themes in the videos http://www.bbc.co.uk/cbbc/clips/p01g2pt6 Newsround: Caught in the Web: http://www.youtube.com/watch?v=kgCNGvL0g1g Lily's Story			

Digital Literacy and E-Safety (**Online Relationship**)

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies		Co2/1.4 understand computer networks including the internet; how they can provide multiple services, such as the worldwide web; and the opportunities they offer for communication and collaboration Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact			
Skills and knowledge	I can recognise some ways in which the internet can be used to communicate. I can give examples of how I (might) use technology to communicate with people I know.	I can use the internet with adult support to communicate with people I know. I can explain why it is important to be considerate and kind to people online.	I can use the internet to communicate with people I don't know well (e.g. email a pen pal in another school/ country). I can give examples of how I might use technology to communicate with others I don't know well.	I can describe ways people who have similar likes and interests can get together online. I can explain some risks of communicating online with others I don't know well. I can explain how my and other people's feelings can be hurt by what is said or written online.	I can describe strategies for safe and fun experiences in a range of online social environments I can give examples of how to be respectful to others online.	I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault. I can make positive contributions and be part of online communities. I can describe some of the communities in which I am involved and describe how I collaborate with others positively.	I can show I understand my responsibilities for the well-being of others in my online social group. I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming). I can demonstrate how I would support others (including those who are having difficulties) online. I can demonstrate ways of reporting problems online for both myself and my friends.
Resources	E-Safety discussion	online safety resources	online safety resources	online safety resources	online safety resources	online safety resources	online safety resources
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC Objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies		Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact			
Skills and knowledge	I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel.	I can describe how to behave online in ways that do not upset others and can give examples.	I can give examples of bullying behaviour and how it could look online. I understand how bullying can make someone feel. I can talk about how someone can/would get help about being bullied online or offline.	I can explain what bullying is and can describe how people may bully others. I can describe rules about how to behave online and how I follow them.	I can identify some online technologies where bullying might take place. I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation).	I can recognise when someone is upset, hurt or angry online. I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. I can explain how to block abusive users. I can explain how I would report online bullying on the apps and platforms that I use.	I can describe how to capture bullying content as evidence (e.g. screen-grab, URL, profile) to share with others who can help me. I can identify a range of ways to report concerns both in school and at home about online bullying
Resources	Discussion	Discussion, assembly, online safety resources		Discussion, assembly, online safety resources			
	EYFS	Year 1	Year 2	Digital Literacy and E-Safety (Privacy and Security) Year 3		Year 5	Year 6
NC Objectives	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies		Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact			
Skills and knowledge	I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). I can describe the people I can trust and can share this with; I can explain why I can trust them.	I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school). I can explain why I should always ask a trusted adult before I share any information about myself online. I can explain how passwords can be used to protect information and devices.	I can describe why other people's work belongs to them. I can recognise that content on the internet may belong to other people.	I can give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. I can understand and can give reasons why passwords are important. I can describe simple strategies for creating and keeping passwords private. I can describe how connected devices can collect and share my information with others.	I can explain what a strong password is. I can describe strategies for keeping my personal information private, depending on context. I can explain that others online can pretend to be me or other people, including my friends I can suggest reasons why they might do this I can explain how internet use can be monitored.	I can create and use strong and secure passwords. I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geo location) with others. I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing	I can use different passwords for a range of online services. I can describe effective strategies for managing those passwords (e.g. password managers, acronyms, stories). I know what to do if my password is lost or stolen. I can explain what app permissions are and can give some examples from the technology or services I use. I can describe simple ways to increase privacy on apps and services that provide privacy settings.

Resources	Discussion	Discussion, assembly and online safety resources	Discussion, assembly and online safety resources
	Vocabulary		
EYFS	Choices, Internet , Website, Equipment , Buttons, Movement, Screen, Mouse, Images, Keyboard Paint, Share, Collect, set of photos, create, Internet, Count , Organise		
Year 1	Online Safety and Exploring Purple Mash: Log in, Username, password, Avatar, Log out, Save, Notification Technology Outside of School: Technology Animated Story Books: Animation, E-Book, Font, File, Sound Effect, Display Boar Coding: Action, Button, Character, Coding, Command, Debug/ Debugging, Input, Object		
Year 2	Online Safety: Search, Internet, Sharing, Digital footprint, Email Effective Searching: Internet, Search, Search engine Coding: Action, Algorithm, Bug, Character, Code block, Debug/Debugging, Input, Object Presenting Ideas: Concept map, Presentation, Audience		
Year 3	Touch typing- Posture, Top/ Home/Bottom row keys, Space bar Coding- Action, Algorithm, Bug, Code Block, Code design, Command, Control, Debug/Debugging, Event, If, Input, Output, Object, Properties, Repeat, Selection, Timer, Variable Emails- Communication, Email, Send, Attachment, Address Book, Password Branching Databases- Branching Database, Data, Database Hardware detectives- Motherboard, CPU, RAM, Graphics card, Network Card, Monitor, Speakers, Keyboard, Mouse		
Year 4	Coding- Action, Alert, Algorithm, Bug, Command, Control, Debug/Debugging, Event, Get input, If, If/Else, Input, Output, Object, Repeat, Selection, Timer, Variables Animation- Animation, Frame, Onion skinning, Background, Play, stop motion 3D Modelling- CAD(Computer aided design, Modelling, 3D, Viewpoint, 2D, Net, Points, Template Effective Searching- Easter Egg, Internet, Internet Browser, Search, Search Engine, Spoof website, Website		
Year 5	Coding- Action, Alert, Algorithm, Bug, Code Design, Command, Control, Debug/ Debugging, Design Mode, Event, Get input, If, If/Else, Input, Output, Object, Repeat, Sequence, Selection, Timer, Variable Databases- Avatar, Branching Database, Charts, Collaborative, Data, Database, Find, Record, Sort, Group, Arrange, Reports, Table Game Creator- Animation, Computer Game, Customise, Evaluation, Image, Instructions, Interactive, Screenshot, Texture, Perspective, Playability		
Year 6	Coding- Action, Alert, Algorithm, Bug, Code Design, Command, Control, Debug/Debugging, Event, Function, Get Input, If, If/Else, Input, Output, Object, Repeat, Sequence, Selection, Timer, Variable Blogging- Audience, Blog, Blog Page, Blog Post, Collaborative, Icon Quizzing- Audience, Collaboration, Concept Map, Database, Quiz Networks- Internet, World Wide Web, Network, Local Area Network (LAN), Wide area Network (WAN), Router, Network Cable, Wireless		