6.6 Computing

Strategic intent

We offer a structured sequence of lessons, helping teachers to ensure that they have covered the skills required to meet the aims of the national curriculum. The content allows for a broad, deep understanding of computing and how it links to children's lives. It offers a range of opportunities for consolidation, challenge and variety. This allows children to apply the fundamental principles and concepts of computer science. They develop analytical problem-solving skills and learn to evaluate and apply information technology. It also enables them to become responsible, competent, confident and creative users of information technology.

Implementation

Content and Sequence

Our sequence of progression can be found on the Computing Progression Maps and intends to inspire pupils to develop a love of the digital world, see its place in their future and give teachers' confidence. Cross-curricular links are also important in supporting other areas of learning and where possible lessons tie in with other topic work. Our lesson plans and resources help children to build on prior knowledge at the same time as introducing new skills and challenges.

In KS1, the focus is on developing the use of algorithms, programming and how technology can be used safely and purposefully. In KS2, lessons still focus on algorithms, programming and coding but in a more complex way and for different purposes. Children also develop their knowledge of computer networks, internet services and the safe and purposeful use of the internet and technology. Data Handling is featured more heavily in UKS2. Skills learnt through KS1 and LKS2 are used to support data presentation. We suggest a specific sequence skills for each year group, offering structure and narrative. These are not to be used exclusively but will support teachers' planning.

Impact

Learning in computing will be enjoyed across the school. 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.

Children show competences in improving their resilience and perseverance by continually evaluating and improving their work. All children in school can speak confidently about their computing work and their skills.

Nearly all children leave Hanging Heaton CE (VC) J&I School having achieved at least the expected standard with some also going on to achieve a greater depth within the standard.

SEND children make at least expected progress and reach their attainment targets.

Disadvantaged children make progress that is in line with their peers.

Children leave Hanging Heaton VC (CE) J&I School with a positive attitude towards computing.

End of Y6 Summative level

	2015-16	2016-17	2017-18	2018-19
	Expected	EXS	EXS	EXS
ICT/ Computing	88%	100%	100%	100%

Computing Progression Map

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
E-safety & E-Sense	I know that some people don't make the right choices and can be unkind. I know to ask an adult before accessing any technology. I know that some behaviour is unacceptable. I understand and can help create rules to keep myself safe.	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 their online technologies. 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.	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.	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. 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 choose a secure password when I am using a website. I can talk about the ways I can protect myself and my friends from harm online. I can use the safety features of websites as well as reporting concerns to an adult. I know that anything I post online can be seen by others.	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	I protect my password and other personal information. I can explain the consequences of sharing too much information 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

			I know that not everyone is who they say they are on the internet.	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.	I choose websites 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.	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 or game .I can explain why I need to protect my computer or device from harm. I know which resources on the internet I can download and use	communicating kindly and respectfully. I protect my computer or device from harm on the internet.
Programming	I show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. I show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. I am beginning to understand that we can control	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.				
		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	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 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 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 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 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

	something through touching a button.	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.	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.	I can describe the algorithm I will need for a simple task. I can detect a problem in an algorithm which could result in it not working.	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 can recognise that an algorithm will help me sequence more complex programs. I recognise that using algorithms will also help solve problems in other learning such as maths, science and design technology.	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.	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 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			
		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	I can 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 can talk about the different ways data can be organised. I can search a ready-made database to answer questions. I can collect data to help me answer a question. I can add to a database. I can make a branching database.	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. I can choose the best way to present data to my friends.	I can use a spreadsheet and database to collect and record data. I can choose an appropriate tool to help me collect data. I can present data in an appropriate way. I can search a database using different operators to refine my search.	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 way.

		about what I have found out.	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.	I can use a data logger to monitor changes and can talk about the information collected.	I can use a data logger to record and share my readings with my friends.	I can talk about mistakes in data and suggest how it could be checked.	I use the skills I have developed to interrogate a database.

		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.			
Multimedia	I can complete a simple program on a computer. I can use ICT hardware to interact with age-appropriate computer software.	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 device to enter text. I can save information in a special place and retrieve it again	I can use technology to organise and present my ideas in different ways. 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.	I can create different effects with different technology tools. I can combine a mixture of text, graphics and sound to share my ideas and learning. 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.	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	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 work and support others to improve their work.	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 work and the work of others.

				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.		
Technology in our lives	I can use simple ICT equipment both in school and at home to access learning such as Mathletics. I can experiment with technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.	Pupils should be taught to use technology purposefully to store and retrieve digital content and to recognise common uses of information technology beyond school. I can recognise the way 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	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.	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. 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 can think about whether can use images that I find online in my own work.	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 source on the World Wide Web.	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 can tell you the internet services I need to use for different purposes. I 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.

Long Term Computing Plan
This plan can be adapted to suit the topics covered each half term

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**E-Safety** • 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.	**Finding things out: Research**	**Programming** • 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.	**Multimedia** • 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 device to enter text. • I can save information in a special place and retrieve it again.	**Handling Data** •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.	**Technology in our Lives** • 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.

Year 2	E-Safety	Finding things out: Research	Programming	Multimedia	Handling Data	Technology in our Lives
	• 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.		• 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.	• I can use technology to organise and present my ideas in different ways. • 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.	• 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.	• 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.
Year 3	E-Safety	Finding things out: Research	Programming	Multimedia	Handling Data	Technology in our Lives
	• 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 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 create different effects with different technology tools. • I can combine a mixture of text, graphics and sound to share my ideas and learning. • I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker.	• 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	• 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.

	E-Safety	Finding things out: Research	Programming	Multimedia	Handling Data	Technology in our Lives
	• 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.		• 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.	• I can evaluate my work and improve its effectiveness. • I can use an appropriate tool to share my work online.	can talk about the information collected.	• I can use search tools to find and use an appropriate website. I • I think about whether I can use images that I find online in my own work.
Year 4	**E-Safety** • I choose a secure password and appropriate 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.	**Finding things out: Research**	**Programming** • 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.	**Multimedia** • 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.	**Handling Data** • 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. • 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.	**Technology in our Lives** • 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.

Year 5	E-Safety	Finding things out: Research	Programming	Multimedia	Handling Data	Technology in our Lives
	• 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.		• 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.	• 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.	• I can use a spreadsheet and database to collect and record data. • I can choose an appropriate tool to help me collect data. • 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.	• 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.
Year 6	E-Safety	Finding things out: Research	Programming	Multimedia	Handling Data	Technology in our Lives
	• I protect my password and other personal information. • I can explain the consequences of sharing		• I can deconstruct a problem into smaller steps, recognising similarities to solutions used before.	• I can talk about audience, atmosphere and structure when planning a particular outcome. • I can confidently identify the potential of unfamiliar	• I can plan the process needed to investigate the world around me. • I can select the most effective tool to collect	• I can tell you the Internet services I need to use for different purposes. • I can describe how information is

	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.		• 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 algorithms and programs.	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.	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 way. • I use the skills I have developed to interrogate a database.	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.

Computing subject curriculum map

Year 1/2

Cycle 1	Statutory programmes of study	Ideas	Resources/trips
Autumn 1	E safety 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	Create a poster Make a list of passwords. Can you decide which ones are strong passwords and which ones are weak? Imagine that your friend is being bullied online? How could you try to you help them? (PSHE link)	*Hectors world - http://www.thinkuknow.co.uk/ www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s www.childnet.com/resources/online-safety-activities-you-can-do-from-home/for-3-7-year-olds-
Autumn 2	Digital literacy and ICT (Research) use technology purposefully to create, organise, store, manipulate and retrieve digital content	Switching a computer on/off, Logging on/off, Saving work, Printing, Copy and pasting images/saving images. Resizing images.	Laptops, IPads, Word, PowerPoint, Publisher.
Spring 1	Computer science (Programming) understand what algorithms are; how they are implemented as programs on digital devices; and that	Bee Bots – writing algorithms on flashcards then programming the Bee Bots. Debug (fix) algorithms where necessary to achieve desired goal.	www.kodable.com

	programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs		
Spring 2	Digital literacy and ICT (Multimedia) use technology purposefully to create, organise, store, manipulate and retrieve digital content	Typing skills, correcting spellings automatically. Switching on, closing Apps, saving images, downloading and deleting Apps.	Powerpoint, Word, Publisher Computers/laptops. IPads
Summer 1	Digital literacy and ICT (Handling Data) use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school	Researching for information independently, Using key words for refined results 'Lion facts **for kids**' will bring back more appropriate content. Opening multiple web pages for more searches. Coping and pasting text Emoticons which are used to convey meaning. ☺ ☹ :'(:x :/	www.safesearchkids.com *internet Laptops/IPads
Summer 2	Digital literacy and ICT (Technology in our lives) use technology purposefully to create, organise, store, manipulate and retrieve digital content	Researching information independently Filtering results for specific images and content.	

Cycle 2	Statutory programmes of study	Ideas	Resources/trips
Autumn 1	E safety	Create a poster	*Hectors world - http://www.thinkuknow.co.uk/

		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	Make a list of passwords. Can you decide which ones are strong passwords and which ones are weak? Imagine that your friend is being bullied online? How could you try to you help them (PSHE link)	https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s https://www.childnet.com/resources/online-safety-activities-you-can-do-from-home/for-3-7-year-olds-
Autumn 2	Digital literacy and ICT (Research) use technology purposefully to create, organise, store, manipulate and retrieve digital content	Word processing and presentation software Using an IPads/IPod/device Recording sounds, create a video, take a screen shot.	Powerpoint, Word, Publisher IPads
Spring 1	Computer science (Programming) 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	Bee Bots – writing algorithms on flashcards then programming the Bee Bots. Debug (fix) algorithms where necessary to achieve desired goal. Talk through algorithms with children, predicting what will happen.	*Bee Bots Flashcards (premade algorithms) Flashcards (to write algorithms)
Spring 2	Digital literacy and ICT (Multimedia) Recognise common uses of information technology beyond the classroom.	Using the school website	Leave a comment on the school website

Summer 1	Digital literacy and ICT (Handling Data) use technology purposefully to create, organise, store, manipulate and retrieve digital content	Researching for information independently, Creating documents using the internet and publishing software (Word, Publisher and PowerPoint). Formatting the document appropriately to present information.	Laptops/IPads
Summer 2	Digital literacy and ICT (Technology in our lives) use technology purposefully to create, organise, store, manipulate and retrieve digital content	Linked to instruction writing ∗ Cross-curricular links Examples: • Cake recipe • How to draw a square • Instructions to move your robot https://www.youtube.com/watch?v=2zVpWu1i5qM	http://code-it.co.uk/csplanning.html Write an algorithm to make a simple Lego model or a tower of bricks http://code-it.co.uk/ks1/supermarket/supermarket

Year 3/4

Cycle 1	Statutory programmes of study	Ideas	Resources/trips
Autumn 1	E-safety use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Internet safety display Create a 'how to be safe online' presentation Being safe using mobile phones and multimedia devices. Make two social media profiles for fictional characters. Can you make one which is safe and another that is unsafe? Design a 'Safer Internet Day' greeting card that could be sold in the shops. Could you design a board or game that teaches children how to stay safe online (DT link): www.teachingideas.co.uk/the-internet/esafety-game Could you make a song based on an internet safety theme (Music link)	https://www.childnet.com/resources/be-smart-online http://www.saferinternet.org.uk welcome to the web www.w2tw.uk www.childnet.com/resources/online-safety-activities-you-can-do-from-home/for-7-11-year-olds-
Autumn 2	Digital Literacy and ICT (70% of computing curriculum) (Research) 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	'Using ICT and exploring it' *Provide opportunities to explore (the internet)	
Spring 1	Computer science (25% of computing curriculum) (Programming) design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	Predicting what will happen – talking through an algorithm. Flashcards for algorithms 'getting up and going to school' algorithm. Algorithms created for favourite pop songs,	*lightbot *Hour of code *Code academy *Beebots

	use sequence, selection, and repetition in programs; work with variables and various forms of input and output	'*Jam sandwich*' - clear, concise and precise instruction 'algorithms – children given language to choose from.	
	use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs		
Spring 2	Digital Literacy and ICT (Multimedia) 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	*Provide opportunities to explore (the internet) How to search for information, How the searched information is sorted, How to find a specific picture, What the numbers mean on a picture (picture resolution/size). Texts boxes, Clip art, Formatting, Changing text types; fonts and sizes. Use photos/videos and sound to create effect	*word *PowerPoint *Publisher *Using key words to find a given/obscure picture
Summer 1	Digital Literacy and ICT (Handling Data) 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	Exploring the internet, refining searches. Coding programmes with increasing complexity (including 'if, when' statements). -organise data in different ways -plan, create and search a database to answer questions	*Purple mash coding *Internet
Summer 2	Digital Literacy and ICT (Technology in our lives) 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	Identify key words to use when searching safely on the World Wide Web Create a hyperlink to a source on the World Wide Web	

Cycle 2	Statutory programmes of study	Ideas	Resources/trips
Autumn 1	E-safety use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Fake accounts, false information. Design a 'mascot' that could be used to promote Safer Internet Day around the world.	Tell children to find out about the tree octopus – set up and designed as a fake website story. Teach the children to use common sense rather than rely on what the internet tells us. http://zapatopi.net/treeoctopus/ *Smart rules *lightbot *Hour of code *Code academy https://www.childnet.com/resources/online-safety-activities-you-can-do-from-home/for-7-11-year-olds-
Autumn 2	Digital Literacy and ICT (70% of computing curriculum) (Research) 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 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	Research information on a theme (Carl Linnaeus in Science/topic links) Search for appropriate pictures – save, edit, format them. Word process a script of what you will say in the video Create professional videos to explain and inform on a topic.	*IPads *Videolicious *iMovie PowerPoint
Spring 1	Computer science (25% of computing curriculum) (Programming) design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	Create flowcharts for favourite pop songs (algorithms), Talk through each step, predicting the behaviour of code – what effect it will have. Algorithms for simple tasks,	*lightbot *Hour of code *Code academy *Beebot app. More able – introduced to scratch (secured in upper key stage 2).

	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	Programme another human to do 'the time warp, make a sandwich' write algorithms on flashcards, debag and manipulate where necessary. More advanced coding applications – link with flashcards, writing out the code explicitly.	
Spring 2	Digital Literacy and ICT (Multimedia) 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	Searching for specific images/content, Search races, searching for an image in class on internet – who and how will it be found? Refine search criteria etc… How to search for information, How the searched information is sorted, How to find a specific picture, What the numbers mean on a picture (picture resolution/size). Texts boxes, Clip art, Formatting, Changing text types; fonts and sizes. Use photos/videos and sound to create effect	Show children a very specific image on screen, children 'race' each other online to find it using vocabulary in search engines. Search for the same images on different search engines, how/why do they not appear in the same places? http://www.code-it.co.uk/netintsearch.html *purple mash coding.
Summer 1	Digital Literacy and ICT (Handling Data) 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	-organise data in different ways -plan, create and search a database to answer questions	
Summer 2	Digital Literacy and ICT (Technology in our lives) 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	Make simple sprites/characters, Complete simple commands for the character to follow,	*Purple mash coding Moving onto scratch coding (preparing for upper key stage 2).

Year 5/6

Cycle 1	Statutory programmes of study	Ideas	Resources/trips
Autumn 1	**E safety** use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Could you write a story that teaches young children about the potential dangers of the Internet (Literacy link) Carry out a survey of your children's favourite online activities (Maths link) Review a web site that is popular with children in your class. How does it encourage users to stay safe? Are there any potential dangers? Find out about the history of the Internet. How has it changed during the years that you have been alive? (History link)	www.childnet.com/resources/young-people-and-social-networking-sites http://www.digizen.org/ https://www.teachingpacks.co.uk/the-internet-safety-pack/ https://www.childnet.com/resources/online-safety-activities-you-can-do-from-home/for-7-11-year-olds- https://www.thinkuknow.co.uk/8_10/stay-safe/
Autumn 2	**Digital literacy and ICT (Research)** 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 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	Searching information, using and refining searches Importing sounds, images and media Creating professional presentations on Keynote	*Keynote app/IPads
Spring 1	**Computer science (Programming)** 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	Scratch Complete 'if/when' statements online. Debug (fix) programmes/algorithms, Programmes of increasing complexity. Starting to write out code using technical coding language.	Introduce Scratch. A.L.E.X app. *Faulty algorithms which need fixing (on computers and not on computers – flashcards?)

	use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs		
Spring 2	Digital Literacy and ICT (Multimedia) 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	Searching for specific images/content. Select, use and combine the appropriate technology tools to create effects	
Summer 1	Digital literacy and ICT (Handling Data) 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 a spreadsheet and database to collect and record data	
Summer 2	Digital literacy and ICT (Technology in our lives) 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	Recognise and evaluate different types of information found on the World Wide Web	Search for the same images on different search engines, how/why do they not appear in the same places?

Cycle 1	Statutory programmes of study	Ideas	Resources/trips
Autumn 1	E safety use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Year 6 E-safety. Social media? Evaluate effectiveness of school website for e-safety.	*Take a picture of your teacher, see how far you can send it in the space of your lesson by emailing, sharing it etc... https://www.childnet.com/resources/online-safety-activities-you-can-do-from-home/for-7-11-year-olds-

Autumn 2	Digital literacy and ICT (Research) 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 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	Evaluate effectiveness of school website for target audience, Children write questionnaire to give to parents, Show children an image, create keywords #hashtags, write a sentence about the picture and group the hashtags together. Are all of the sentences on a similar theme?	*internet/school website
Spring 1	Computer science (Programming) 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	Focus on writing elaborate algorithms, debugging (fixing) as you go.	*Scratch. A.L.E.X app. Faulty algorithms which need fixing (on computers and not on computers – flashcards?) Scratch planning: http://code-it.co.uk/scratch/scratchplan
Spring 2	Digital literacy and ICT (Multimedia) understand computer networks including the internet; how they can provide multiple services, such as the world wide	Searching for specific images/content. Select, use and combine the appropriate technology tools to create effects	

	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		
Summer 1	Digital literacy and ICT (Handling Data) 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	Use a spreadsheet and database to collect and record data	
Summer 2	Digital literacy and ICT (Technology in our lives) 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	Recognise and evaluate different types of information found on the World Wide Web	