Curriculum plan- Computing

Year 1	Autumn	Spring	Summer
Digital Literacy https://www.commonsense.org/education/digital-citizenship/curriculum	**Media balance is important** How do we find a happy balance between our online and offline activities? Progression of skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not -Pupils learn to explore websites and to say whether they like them or not and why Skills from NC: -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies	**Pause for people** How do you say goodbye to technology when you don't want to? Progression of skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not -Pupils learn to explore websites and to say whether they like them or not and why Skills from NC: -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies	**Safety in my online neighbourhood** How do you go places safely online? Progression of skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not -Pupils are introduced to the basics of online searching -Pupils learn to explore websites and to say whether they like them or not and why Skills from NC: -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies
1st Half term	***Teach computing- Programming A- Moving a Robot*** How do we make the robot move? **What do the buttons on a floor robot do?** **What language is used to give directions?** **How can we program the robot to move forwards and backwards?** **How can we make the robot turn left and right?** **How does the robot get from one place to another?** **Can I plan a route for the robot to take?** Progression of Skills:	***Teach computing – Programming B- Programming Animations*** How do commands work? **How can I use on screen commands to move the sprite?** **Can I join a series of commands together?** **What is the effect of changing a value?** **Can I give each sprite their own instructions?** **Can I choose appropriate backgrounds and movements?** **Is my algorithm effective?** Progression of Skills: - Learners will explore the way a project looks by investigating sprites and backgrounds. They will use	***Teach computing – Data and information Grouping Data*** What is data and how can it be grouped? **Can I label and match different objects?** **How can objects with the same label be counted?** **How can we describe objects in different ways?** **Can I count objects with the same properties?** **Can I compare groups of objects?** **Can I answer questions about groups of objects?** Progression of Skills: - Pupils will demonstrate that they can count a small number of objects, before and after the

	- Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms. Skills from NC: -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	programming blocks to use, modify, and create programs. Learners will also be introduced to the early stages of program design through the introduction of algorithms. Skills from NC: -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	objects are grouped. They will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data. Skills from NC: - use technology purposefully to create, organise, store, manipulate and retrieve digital content
2nd Half Term	***Teach computing- Computing systems and networks- technology around us*** How do we use a computer effectively? **What is technology?** **How is technology used?** **What are the main parts of a computer?** **What is a mouse used for?** **Can I use the keyboard to edit text?** **How should we use technology responsibly?** Progression of Skills: -Pupils will become more familiar with the different components of a computer by developing their keyboard and mouse skills, and also start to consider how to use technology responsibly. Skills from NC: -use technology purposefully to create, organise, store, manipulate and retrieve digital content -recognise common uses of information technology beyond school	***Teach computing - Creating media- Digital painting*** Can computers be used to create artwork? **How can we paint using computers?** **Can I use the shape and line tools to recreate an image?** **What careful choice should I make when painting?** **Why did I choose that?** **Can I paint my own picture on a computer?** **What are the differences when painting on paper and painting on a computer?** Progression of Skills: - Pupils learn to create a simple digital painting. Empower them to create their own paintings, while getting inspiration from a range of other artists. Conclude by asking them to consider their preferences when painting with, and without, the use of digital devices. Skills from NC: -use technology purposefully to create, organise, store, manipulate and retrieve digital content	***Teach computing- Creating media- Digital writing*** Is it better to write or type? **Can I recognise, find and use keys on a keyboard?** **Can I add and remove text on a computer?** **How can I use the toolbar to edit my writing?** **How can I make changes to my text?** **Why did I use the tools that I did?** **What are the differences between typing and writing on paper?** Progression of Skills: - Learners will familiarise themselves with typing on a keyboard and begin using tools to change the look of their writing, and then they will consider the differences between using a computer and writing on paper to create text. Skills from NC: -use technology purposefully to create, organise, store, manipulate and retrieve digital content

Year 2	Autumn	Spring	Summer
Digital Literacy https://www.commonsense.org/education/digital-citizenship/curriculum	**Media balance is important** How do we find a happy balance between our online and offline activities? Progression of skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not -Pupils learn to explore websites and to say whether they like them or not and why Skills from NC: -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies	**Pause for people** How do you say goodbye to technology when you don't want to? Progression of skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not -Pupils learn to explore websites and to say whether they like them or not and why Skills from NC: -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies	**Safety in my online neighbourhood** How do you go places safely online? Progression of skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not -Pupils are introduced to the basics of online searching -Pupils learn to explore websites and to say whether they like them or not and why Skills from NC: -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies
1st Half Term	***Teach computing - Programming A- Robot algorithms*** How is programming used to move a robot? **What language is used to give instructions?** **What happens when we change the order of instructions?** **Can I use logical reasoning to predict the outcome of a program?** **How does programming include code and artwork?**	***Teach computing - Programming B- an introduction to quizzes (Scratch Jr)*** How does a sequence of commands work? **What is the start of my sequence?** **What is the outcome of a sequence of commands?** **Can I create a program using a given design?** **Can I change a given design?** **Can I create a program using my own design?** **How can my project be improved?** Progression of Skills:	***Teach Computing- Data and Information- Pictograms*** How can data be collected? **How does a tally chart collect data?** **What is a pictogram and how can it be created?** **Can I create a pictogram?** **What is an attribute?** **How can people be described by attributes?** **How can we present information using a computer?**

	Can I design an algorithm? **Can I debug a program I have written?** Progression of Skills: -Learners will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them. Skills from NC: -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	- Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects. Skills from NC: -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	Progression of Skills: - Learners will begin to understand what data means and how this can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions. Skills from NC: - Pupils learn to create and use a pictogram -use technology purposefully to create, organise, store, manipulate and retrieve digital content
2nd Half Term	***Teach computing- Computing systems and networks- IT around us*** What is information technology? **What is IT?** **How is IT used in school?** **How is IT used in the world?** **What are the benefits of IT?** **How is IT used safely?** **How can IT be used in different ways?** Progression of Skills: - learners explore how IT benefits society in places such as shops, libraries, and hospitals. Whilst discussing the responsible use of technology, and how to make smart choices when using it. Skills from NC: - recognise common uses of information technology beyond school - Pupils learn about some of the uses of the internet	***Teach computing- Creating media: Digital photography*** How can we use effects to change images? **How can we take a photo on a digital device?** **Is it better to take a photo in landscape or portrait?** **What makes a good photograph?** **How does lighting have an effect on the quality of a photo?** **Can I use tools and effects to change an image?** **Are all images real?** Progression of Skills: - Learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real. Skills from NC: -use technology purposefully to create, organise, store, manipulate and retrieve digital content - Pupils learn to use digital cameras and microphones for a purpose	***Teach computing- Creating media- Digital Music*** How can we use a computer to make music? **How does music make us feel?** **How are rhythms and patterns used in music?** **How can music be used to express emotion?** **Can I use a computer to create a musical pattern?** **Can I create music for a purpose?** **Can I review and refine my work?** Progression of Skills: - Learners will explore how music can make them think and feel. They will make patterns and use those patterns to make music with both percussion instruments and digital tools. They will also create different rhythms and tunes, using the movement of animals for inspiration. Finally, learners will share their creations and compare creating music digitally and non-digitally. Skills from NC:

			-use technology purposefully to create, organise, store, manipulate and retrieve digital content - Pupils learn to use digital cameras and microphones for a purpose

Year 3	Autumn	Spring	Summer
https://www.commonsense.org/education/digital-citizenship/curriculum	**Device free moments** Why is it important that we have device free moments in our lives? **Your rings of responsibility** How do digital citizens take responsibility for themselves, their community and world? Progression of skills: -Pupils are introduced to their roles as digital citizens in an online community, where they reflect on how they are responsible not only for themselves but for others, in order to create a safe and comfortable environment -Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others -Pupils explore how they interact with others and are introduced to the concept of cyberbullying. They also learn how to communicate to be a responsible member of a connected culture effectively in order to prevent miscommunication Skills from NC: - Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	**That's private!** What kinds of information should I keep to myself when I use the internet? **Password Power-up** How can a strong password help with security? Progression of Skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils learn to make good passwords for their accounts, learn about spam and how to deal with it. They begin to understand the implications for the information that they share online and how some websites might use that information without their knowledge -Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others Skills from NC: - Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	**This is me** How does what I post online affect my identity? **Our online tracks** How does our online activity affect the digital footprints of ourselves and others? Progression of Skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils learn to make good passwords for their accounts, learn about spam and how to deal with it. They begin to understand the implications for the information that they share online and how some websites might use that information without their knowledge -Pupils are introduced to their roles as digital citizens in an online community, where they reflect on how they are responsible not only for themselves but for others, in order to create a safe and comfortable environment -Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others Skills from NC:

			- Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact
1st Half Term	***Teach computing*- Computing systems and networks- connecting computers** What are the benefits of connecting devices in a network? **How does a digital device work?** **What parts make up a digital device?** **How do digital devices help us?** **How am I connected?** **How are computers connected?** **What does our school network look like?** Progression of Skills: - Pupils will start by comparing digital and non-digital devices, before introducing them to computer networks that include network infrastructure devices like routers and switches. Skills from NC: - recognise common uses of information technology beyond school	***Teach computing- Programming A- Sequencing sounds*** What is the importance of sequencing in programming? **What do I know about Scratch?** **What is the outcome of each command?** **What is a sequence?** **What order should I sequence my commands?** **Can I change the appearance of my project?** **Can I create a musical instrument in scratch?** Progression of Skills: - It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit. Skills from NC: - design write and debug programs that accomplish specific goals, solve problems by decomposing them in smaller parts -use sequence, selection and repetition in programs - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	***Teach computing*- Creating media- Desktop publishing (adobe spark)** Why is desktop publishing used in the real world? **How do text and images convey information?** **How can text and layout be edited?** **Can I choose appropriate page settings?** **How do we add content to a desktop publishing publication?** **How do different layouts suit different purposes?** **What are the benefits of desktop publishing?** Progression of Skills: - Learners will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' and begin to understand how these can support them in making their own template for a magazine front cover. They will start to add text and images to create their own pieces of work using desktop publishing software. Learners will look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world. Skills from NC: - 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 - Pupils learn how to use software to create an e-book, brochure or poster on a given subject

2nd Half term	***Teach computing*- Creating media- Stop-frame animation** How does stop-frame animation work? **Can a picture move?** **How can a tablet be used to create an animation?** **What's the story?** **Can I work consistently and carefully when making an animation?** **How can I improve my animation?** **What is the impact of adding other media to my animation?** Progression of Skills: - Learners will use a range of techniques to create a stop-frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text. Skills from NC: - 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 - Pupils learn how to develop a storyboard and then create a simple animation using for instance 'Puppet Pals' or 'Stop Motions' Animation'	***Teach computing- Data and information- Branching Databases*** What is a branching database? **Can I make yes/no questions about a collection of objects?** **What are the attributes needed to collect data about an object?** **How does an online database tool arrange objects into a branching database?** **Why is it helpful for a database to be well structured?** **Can I plan the structure of a branching database?** **Can I create an identification tool?** Progression of Skills: - Learners will develop their understanding of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Learners will create physical and on-screen branching databases. To conclude the unit, they will create an identification tool using a branching database, which they will test by using it. They will also consider real-world applications for branching databases. Skills from NC: - 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	***Teach computing- Programming B- Events and actions (Scratch)*** What are the links between events and actions? **How does a sprite move?** **How can I make the sprite move in four different directions?** **How can I make the sprite draw lines?** **Can I develop my program by adding features?** **Can I debug and modify programs using a design?** **Can I create a maze-based challenge?** Progression of Skills: - Learners will begin by moving a sprite in four directions (up, down, left and right). They will then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of pen blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with learners designing and coding their own maze tracing program. Skills from NC: - design write and debug programs that accomplish specific goals, solve problems by decomposing them in smaller parts -use sequence, selection and repetition in programs - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Year 4	Autumn	Spring	Summer
Digital Literacy https://www.commonsense.org/education/digital-citizenship/curriculum	**Our digital citizenship pledges** What makes a strong online community? **Keeping games fun and friendly** How can I be positive and have fun while playing games online, and help others do the same? Progression of Skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils learn to make good passwords for their accounts, learn about spam and how to deal with it. They begin to understand the implications for the information that they share online and how some websites might use that information without their knowledge	**The power of words** What should you do when someone uses mean or hurtful language on the internet? **Be a super digital citizen** How can we be upstanders when we see cyberbullying? Progression of Skills: -Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information -Pupils are introduced to their roles as digital citizens in an online community, where they reflect on how they are responsible not only for themselves but for others, in order to create a safe and comfortable environment -Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others	**Is seeing believing?** Why do people alter digital photos and videos? **A creator's rights and responsibilities** What rights and responsibilities do you have as a creator? Progression of Skills: -Pupils learn to make good passwords for their accounts, learn about spam and how to deal with it. They begin to understand the implications for the information that they share online and how some websites might use that information without their knowledge -Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others Skills from NC: - Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable

	-Pupils are introduced to their roles as digital citizens in an online community, where they reflect on how they are responsible not only for themselves but for others, in order to create a safe and comfortable environment -Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others -Pupils explore how they interact with others and are introduced to the concept of cyberbullying. They also learn how to communicate to be a responsible member of a connected culture effectively in order to prevent miscommunication Skills from NC: - Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	-Pupils explore how they interact with others and are introduced to the concept of cyberbullying. They also learn how to communicate to be a responsible member of a connected culture effectively in order to prevent miscommunication Skills from NC: - Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	behaviour; identify a range of ways to report concerns about content and contact
1st Half Term	***Teach computing- Computing systems and networks- The internet*** What information is available on the internet? **How does a network share messages with another network to form the internet?** **What is the internet made of?** **How can websites be shared via the World Wide Web?** **What is a website?** **Who owns the web?** **Can I believe what I read?** Progression of Skills: - Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and will be given opportunities to explore the World Wide Web for themselves in order to learn about who owns content and what they can access, add, and create. Finally, they will evaluate online content to decide	***Teach computing- Programming A- Repetition in shapes (turtle academy)*** How are repetition and loops used within programming? **Why is accuracy in programming important?** **Can I create a program in a text-based language?** **What does 'repeat' mean?** **Can I modify a count-controlled loop to produce a given outcome?** **Can I decompose a task into small steps?** **Can I create a program that uses count-controlled loops to produce a given outcome?** Progression of Skills: - Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. Skills from NC: - design write and debug programs that accomplish specific goals, solve problems by decomposing them in smaller parts -use sequence, selection and repetition in programs	***Teach computing- Creating media- photo editing*** How can digital images be changed and edited? **What is image composition?** **What effects do different colours and filters have on a picture?** **How can cloning be used in photo editing?** **Why might photos be edited?** **Can I combine images for a purpose?** **What improvements can I make to my image?** Progression of Skills: - Learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices. Skills from NC: - 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,

	how honest, accurate, or reliable it is, and understand the consequences of false information. This unit requires devices with an internet connection. Chrome Music Lab is used in one lesson to demonstrate content which can be produced on the World Wide Web. Skills from NC: - recognise common uses of information technology beyond school - use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content	- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	including collecting, analysing, evaluating and presenting data and information - Pupils learn how to take, adapt or create images to enhance or further develop their work
2nd Half Term	***Teach computing- Creating media- audio production (Audacity)*** What makes an effective podcast? **How is sound recorded?** **How can audio recordings be edited?** **What are the different parts of a podcast?** **Can I apply audio editing skill to create a podcast?** **Can I combine audio in my podcast?** **How can I improve my podcast?** Progression of Skills: - Learners will identify the input device (microphone) and output devices (speaker or headphones) required to work with sound digitally. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, learners will evaluate their work and give feedback to their peers. Skills from NC: - 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,	***Teach computing- Data and information- Data logging*** How and why is data collected? **What data is collected and how is it collected?** **How do digital devices collect data?** **How do data loggers work?** **How can a computer help us analyse data?** **What data is needed to answer questions?** **How can we answer questions using data?** Progression of Skills: - Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions. Skills from NC: - 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	***Teach computing- Programming B- Repetition in games (scratch)*** What is the difference between count-controlled loops and infinite loops? **Can I use loops to create shapes?** **What are the different types of loops?** **Can I use two or more loops that run at the same time?** **How can we modify an infinite loop in a given program?** **Can I design a game that includes repetition?** **Can I create a game that I have designed?** Progression of Skills: - Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout. Skills from NC: - design write and debug programs that accomplish specific goals, solve problems by decomposing them in smaller parts -use sequence, selection and repetition in programs

	including collecting, analysing, evaluating and presenting data and information - Pupils record and edit media to create a short sequence	- Pupils learn how to take, adapt or create images to enhance or further develop their work - Pupils learn to search, sort and graph information	- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Year 5	Autumn	Spring	Summer
Digital Literacy https://www.commonsense.org/education/digital-citizenship/curriculum	**You won't believe this!** What is clickbait and how can you avoid it? **Don't feed the phish** How can you protect yourself from phishing? Progression of skills: - Pupils learn to create secure passwords for their accounts, learn about spam and how to deal with it, and decode website privacy policies, understanding the implications for the info that they share online - Pupils begin to explore the nature of online audiences and permanency of information online. They begin to understand the significance of published information and personal information - Pupils develop skills for evaluating websites, online information and advertising by rating the	**Beyond gender stereotypes** How do gender stereotypes shape our experience online? **Who are you online?** What are the benefits and drawback of presenting yourself in different ways online? Progression of skills: - Pupils explore their roles as digital citizens in an online community, where they reflect on their responsibilities and learn that good digital citizens are responsible and respectful in the digital world - Pupils begin to explore the nature of online audiences and permanency of information online. They begin to understand the significance of published information and personal information	**Is it cyberbullying?** What is cyberbullying and what can you do to stop it? **Digital Drama unplugged** How can you deescalate digital drama so it doesn't go too far? Progression of skills: - Pupils learn that the internet is a great place where online relationships can be developed. They compare and contrast online friends and real life, face to face friends and learn how to respond if an online friend asks them a personal question - Pupils explore their roles as digital citizens in an online community, where they reflect on their responsibilities and learn that good digital citizens are responsible and respectful in the digital world

	trustworthiness and usefulness of websites, and learning to identify the different types of online advertising Skills from NC: - use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact - use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content	- Pupils begin to consider the impact of their online presence on their own self- image and the way others see them and explore how to construct a positive online profile Skills from NC: - use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	- Pupils understand what it means to be a good digital citizen as they interact with others online by understanding how to prevent and respond to cyberbullying. They also learn how to communicate effectively to prevent miscommunication in order to be a responsible member of a connected culture Skills from NC: - use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact
1st Half Term	***Teach computing- Computing systems and networks- Systems and searching*** How is information transferred between systems and devices? **How can computers be connected to form systems?** **What are the roles of computer systems in our lives?** **How should I use a search engine?** **How do search engines select results?** **How are search results ranked?** **Why is the order of results important and to whom?** Progression of Skills: - Learners will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will also take part in a collaborative online project with other class members and develop their skills in working together online. Skills from NC: - 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	***Teach computing- Programming A- Selection in physical computing*** How is selection used in programming? **Can I control a simple circuit connected to a computer?** **How are count-controlled loops used?** **How does a loop stop when a condition is met?** **How can loops check whether a condition has been met?** **Can I design a physical project that includes selection?** **Can I create a program that controls a physical computing project?** Progression of Skills: - Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program components (including output devices- LEDs and motors) through the application of their existing programming knowledge. Learners are introduced to conditions as a means of controlling the flow of actions and make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the if, then structure). Skills from NC: -design, write and debug programs that accomplish specific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts -use sequence, selection and repetition in programs; work with variables and various forms of input and output	***Teach Computing- Creating Media- introduction to Vector Graphics*** How can different drawing tools be used to create images? **How can drawing tools be used to produce different outcomes?** **Can I create a vector drawing by combining shapes?** **Can I use tools to achieve a desired effect?** **How are layers used in vector drawings?** **How does grouping objects make them easier to work with?** **Can I apply what I have learnt about Vector drawings?** Progression of Skills: - Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. Learners layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work. This unit is planned using the Google Drawings app, other alternative pieces of software are available. Skills from NC: -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,

		-use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information - Pupils learn how to take, adapt or create images to enhance or further develop their work and incorporate it in a wider project
2nd Half term	***Teach Computing -Creating media- video production (Microsoft video editor)*** What makes a good video? **What is a video?** **What makes an effective video?** **Can I use a device to record a video?** **What techniques can I use to capture a video?** **Can I create a storyboard for a video?** **How can a video be improved through reshooting and editing?** **How will my choices when making a video impact the quality of the final outcome?** Progression of Skills: - Learners are given the opportunity to learn how to create short videos in groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-by-step support to take their idea from conception to completion. At the teacher's discretion, the use of green screen can be incorporated into this unit. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video. Skills from NC: -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,	***Teach computing- Data and Information- Flat file databases*** How is data organised in records? **Can I use a database to record information?** **How do paper and computer-based databases compare?** **How can records be grouped and sorted?** **Which tools can be used to select specific data?** **How can computer programs be used to compare data visually?** **Can I use a real-world database to answer questions?** Progression of Skills: - Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others. Skills from NC: -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 - Pupils learn to search, sort and graph information -Pupils learn how to use a spreadsheet to model data	***Teach computing- Programming B- Selection in quizzes (Scratch)*** How can different outcomes be created using conditions? **How is selection used in computer programming?** **How does a conditional statement connect a condition to an outcome?** **How does selection direct the flow of a program?** **Can I design a program that uses selection?** **Can I create a program that uses selection?** **How can my program be improved?** Progression of Skills: -Pupils develop their knowledge of selection by revisiting how conditions can be used in programs and then learning how the If… Then… Else structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They use their knowledge of writing programs and using selection to control outcomes to design a quiz in response to a given task and implement it as a program. Skills from NC: -design, write and debug programs that accomplish specific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts -use sequence, selection and repetition in programs; work with variables and various forms of input and output

	systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information - Pupils record and edit media to create a short sequence - extended by editing the final product in using video editing software		-use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Year 6 Digital Literacy https://www.commonsense.org/education/digital-citizenship/curriculum	Autumn **Finding my media balance** What does media balance mean for me? **Finding balance in a digital world** How do we balance digital media use in our life? Progression of skills: - Pupils explore their roles as digital citizens in an online community, where they reflect on their responsibilities and learn that good digital citizens are responsible and respectful in the digital world - Pupils begin to consider the impact of their online presence on their own self- image and the way others see them and explore how to construct a positive online profile Skills from NC: - use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	Spring **Digital friendships** How do you keep online friendships safe? **Chatting safely online** How do you chat safely with people online? Progression of skills: - Pupils learn that the internet is a great place where online relationships can be developed. They compare and contrast online friends and real life, face to face friends and learn how to respond if an online friend asks them a personal question - Pupils explore their roles as digital citizens in an online community, where they reflect on their responsibilities and learn that good digital citizens are responsible and respectful in the digital world - Pupils begin to explore the nature of online audiences and permanency of information online. They begin to understand the significance of published information and personal information - Pupils understand what it means to be a good digital citizen as they interact with others online by understanding how to prevent and respond to cyberbullying. They also learn how to communicate effectively to prevent miscommunication in order to be a responsible member of a connected culture - Pupils begin to consider the impact of their online presence on their own self- image and the way others see them and explore how to construct a positive online profile Skills from NC: - use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	Summer **Reading news online** What are the important parts of an online news article? **Finding credible news** How do we find credible information on the internet? Progression of skills: - Pupils learn to create secure passwords for their accounts, learn about spam and how to deal with it, and decode website privacy policies, understanding the implications for the info that they share online They begin to understand the significance of published information and personal information - Pupils explore issues relating to online searching, including how to use effective keywords, using directories and subject categories, and how to analyse the usefulness and relevancy of the results. They learn to conduct searches that provide them with the most helpful and relevant information - Pupils develop skills for evaluating websites, online information and advertising by rating the trustworthiness and usefulness of websites, and learning to identify the different types of online advertising Skills from NC: - use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact - use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content

1st Half term	***Teach computing- Computing systems and networks- Communication and collaboration*** How is data transferred over the internet? **What is the importance of internet addresses?** **How is data transferred across the internet?** **How can sharing information online help people work together?** **How can people work together online?** **How do we communicate using technology?** **What are the best methods for communicating online?** Progression of Skills: - Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet. Note: Some of the content in this unit was previously included in the Year 5 – 'Computer systems and networks' unit, so some learners may have already completed similar activities. Where this is the case, the context for the activity has been changed. Skills from NC: - 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	***Teach computing- Programming A- variables in games (scratch)*** How are variables used to create games? **What is a variable?** **Why is a variable used in a program?** **How can a game be improved using variables?** **Can I design a project that build on a given example?** **Can I use my design to create a project?** **What are the strengths and improvements of my game?** Progression of Skills: -Learners find out what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, learners experiment with variables in an existing project, then modify them, before they create their own project. In Lesson 4, learners focus on design. Finally, in Lesson 6, learners apply their knowledge of variables and design to improve their games in Scratch. Skills from NC: - design, write and debug programs that accomplish specific goals; including controlling or simulating physical systems and solving 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	***Teach computing- Creating media- 3D Modelling*** **(https://www.tinkercad.com/)** How can a computer produce 3D models? **How can you work in three dimensions on a computer?** **How can digital 3D objects be modified?** **How can objects be combined to make a 3D model?** **Can I create a 3D model for a given purpose?** **Can I plan my own 3D model?** **Can I create my own 3D digital model?** Progression of Skills: - Learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, learners will examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building. Skills from NC: -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

2nd Half term	***Teach computing- Creating media- Web Page creation*** What makes a good web page? **What makes a good website?** **How should you lay out a web page?** **What is copyright?** **Why should we preview pages?** **What is the need for a navigation path?** **What are the implications of linking to content owned by other people?** Progression of Skills: - Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths. Skills from NC: -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	***Teach computing- Data and information- Introduction to Spreadsheets*** How is data organised in a spreadsheet? **Can I create a data set in a spreadsheet?** **Can I build a data set in a spreadsheet?** **How can formulas be used to produce calculated data?** **Can I apply formulas to data?** **How can a spreadsheet be used to plan an event?** **How should data be presented?** Progression of Skills: - Learners will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. Learners will be taught how to apply formulas that include a range of cells, and apply formulas to multiple cells by duplicating them. Learners will use spreadsheets to plan an event and answer questions. Finally, learners will create charts, and evaluate their results in comparison to questions asked. Skills from NC: - 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 - Pupils learn how to use a spreadsheet to model data	***Teach computing- Programming B- Sensing Movement*** How are sequencing, repetition, selection and variables used in programming? **Can I create a program to run on a controllable device?** **How does selection control the flow of a program?** **How can the value of a variable be changed?** **How can a conditional statement be used to compare a variable to a value?** **Can I design a project that uses inputs and outputs?** **Can I develop a program that uses inputs and outputs?** Progression of Skills: - Pupils are offered the opportunity to use all of these constructs in a different, but still familiar environment, while also utilising a physical device — the micro:bit. The unit begins with a simple program for pupils to build in and test within the new programming environment, before transferring it to their micro:bit. Pupils then take on three new projects in Lessons 2, 3, and 4, with each lesson adding more depth. Skills from NC: - design, write and debug programs that accomplish specific goals; including controlling or simulating physical systems and solving 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