	KNOWLEDGE	SKILLS	OUTCOMES
Year 3	**E-safety/ RHE** I know why people use the internet as part of their lives I know the benefits of using the internet I know that the internet can be a negative place and it can impact our mental health I know ways of communicating online (email, blog, instant messaging and video calling) I know some positive and negative aspects of online communication I know how to communicate respectfully online I know how online actions can impact other people and their feelings. I know how to respond to a hurtful message or comment online. I know where and how to address any concerns I have online I know the importance of keeping personal information private I know what personal information is I know what a password is and why it is important I know how to create a strong password. I know what privacy settings are and why they are important.	• Identify cyberbullying • Identify suspicious signs in an email • Writing and sending emails • Communicate safely and responsibly online	**All children will** Know one good and bad thing about using the internet Know how the internet can negatively effect our wellbeing Know that we use email and instant messages to communicate online Know how some people can be unkind on the internet Know how to be kind communicating on the internet. know to a safe person to tell if they encounter hurtful comments on messages online; Know what personal information is and what to keep private; Know how to create a strong password; Know what privacy settings are; **Most children will** Know the positive and negative aspects of using the internet Know how the internet can negatively effect our wellbeing identify and explain different forms of online communication; Know some of the benefits and disadvantages of communication online; explain the differences between communication in real life and online; Know how some people can be unkind on the internet Know how to be kind communicating on the internet; know to a safe person to tell if they encounter hurtful comments on messages online; Know what personal information is and what to keep private; They can explain why you need keep personal information private; Know how to create a strong password, explaining why it is important; Know what privacy settings are and how to use them safely; **Some children will** Know the positive and negative aspects of using the internet Know how the internet can negatively effect our mental wellbeing; identify and explain different forms of online communication; Know some of the benefits and disadvantages of communication online; explain the differences between communication in real life and online; Know how some people can be unkind on the internet and the affect it has; Know how to be kind communicating on the internet; give examples of people they can report hurtful comments on messages to and explain why they are good choices; Know what personal information is and what to keep private; They can explain why you need keep personal information private; Know how to create a strong password, explaining why it is important and giving tips to help others create a strong password; Know what privacy settings, why they are important and how they can be used safely;

	General ICT skills and Word processing (highlighted) Know the parts of a computer Know how to switch the computer on and off know how to Log on and off (sign in sign out) Know what the desktop is Know the buttons on the mouse Know some of the icons on the desktop and how to use the mouse to open them (red) Know where the letters and numbers are on the keyboard (red) Know I can type with multiple fingers on both hands Know the function of some additional keys (space, enter, shift, caps lock, backspace) Know what a word processor is Know how to change from lower case to capital letters Know how to change the font Know how to change the size of font Know how to underline text Know how to use bullet points Know how to align text Know how to make the text bold or italic Know how to save work Know how to retrieve their work from last week Know how to search for an image online Know how to copy an image Know how to paste an image	- Will be able to turn the computer on - Will be able to log in and sign out - Will be able to use a mouse with increasing accuracy - Will be able to type with increasing speed and accuracy - Will be able to use the shift, caps lock and change case buttons to change the case of letters and words. - Will be able to highlight text using bold, italic and underline buttons. - Will be able to move text using the align left, right and centre buttons. - Will be able to insert an image - Will be able to save a document - Will know how to print a document	**All children will** Can turn on a computer. Can log on to the school network with support. Can follow clear instructions to find programs on the desktop. Can type using both hands with some accuracy Can change some features and effects on a word processing program Can copy and paste an image into word with support. Can save their work Can print their work **Most children will** Knows the difference between shutting down and turning off the computer Can log on to the school network independently. Can independently open programs used in lessons. Can type using both hands with increasing speed and accuracy Can change a range of different effects in a word processing program Can copy and paste an image into word and begin to format it Can print a document using the default settings. Can save and reopen their work **Some children will** Can explain the difference between shutting down and turning off the computer and demonstrate both. Can log on to the school network independently and can explain to others what they need to do. Can find specific programs by searching the desktop independently. Can print a document in colour or black and white. Can insert an image into word using copy and paste of the 'insert' button and can format the size and position of the image. Can save, rename and reopen their work

	Programming – Scratch (dressing up) I know who Ada Lovelace is I know what an algorithm is I know what a sprite is I know what coding is I know how to choose a sprite, duplicate its costume and change the colour of its items of clothing. I know what a block of code is I can make a block of code I can copy a block of code I know what the term bug means in computing I know how to use the selection tool to code changes I know how to design, edit and code my sprite I know what import means I know how to import backgrounds I know how to code to change the background I know what a pause does in a sequence I know how to code a pause into a sequence I know how to create and debug a simple program	I can choose a sprite and alter its appearance I can use code to make something change I can import different backgrounds I can use code to change the backgrounds	**All children will** Can select a sprite Can modify a sprite's appearance with support. Can choose a background Can write a simple algorithm using a pre-selected blocks. Can code a sprite to react to a mouse click. Can use code to change a sprites colour Can use code to change a sprites costume **Most children will** Can modify a sprite's appearance independently. Can draw their own accessories onto a sprite Can add additional accessories for a sprite Can import a background Can write a simple algorithm using a pre-prepared plan. Can code a sprite to react to a mouse click. Can duplicate code Can use repeat loops in algorithms. Can begin to recognise errors in code (bugs) **Some children will** Can modify a sprite's appearance and create new sprites independently. Can write a simple algorithm. Can code a sprite to react to a mouse click or a keystroke Creating a sequence of instructions that follow each other contained in one block Can duplicate blocks from code provided and can explain in their own words what it does. Can import a background. Can recognise bugs in code and begin to fix them. Can explain the function of repeat loops in algorithms.
	Programming- scratch (conversation) Know what an algorithm is Know what a wait block is Know how to write an algorithm with a wait block I know how to turn an algorithm into code I know what d-bugging means I know if my code has a bug I know how to debug my code	Be able to write an algorithm with a wait code Be able to code two sprites to have a conversation Be able to change the position and appearance of a sprite	**All children will** Write a simple algorithm Turn that algorithm into code Program a wait block into the code Code a sprite to speak Identify if a code doesn't work **Most children will** Write an algorithm with a wait block Turn the algorithm into a code Understand the purpose of the wait block in a conversation Program two sprites to speak at different times Change the background Edit the appearance of the sprite Identify errors in code Begin to correct errors in code **Some children will** Create and extended algorithm with a wait block and explain the

	I know how to change the background I know how to move the sprites I know how to edit the appearance of a sprite I know how to make the spite disappear I know how to make the sprite change size		purpose of the wait block Turn the algorithm into code Program two or more spites to have a conversation Program the sprites to wait and speak in turn Import different backgrounds Edit and enhance the appearance and movement of the sprites Identify errors in code and de-bug them efficiently
	Computer Systems – Using the Internet I know I can search for information on the internet I know how to search for information on the internet I know how the internet ranks information I search I know what it means to search safely I know what web browsers are safe to use I know how to search safely I know how to use key words to search for information I know why I can bookmark a web page I know how to bookmark a web page I know how to create a bookmarks folder I know how to research a question of my own I know how to find a website that answers my question I know how to use information I have found in my own work I know what to do if I come across a nasty image I know how to copy an image from the internet I know how to add a caption to an image I know how to make my factsheet attractive and clear	**Can search safely and effectively for information** **Can bookmark a page of interest to use at a later date** **Can find relevant results for their question** **Can use the results they find in an information page** **Can make their information page attractive and clear**	**All children will** Can use a search engine to find basic information. Can bookmark a page with support. Can search for an image with support. Can use some information they have found in a fact file. **Most children will** Can explain what a search engine is used for. Can bookmark a page independently. Can search for an image and use copy and paste to retrieve it. Can use information they have researched to create a fact file. **Some children will** Can explain what a search engine is used for and how to effectively search using keywords. Can create bookmarks and organise them into folders. Can search for an image and use more than one method to retrieve it from a webpage (scrnprt or snipping tool). Can use information they have researched in their own words to create an attractive fact file.
Year 4	**E SAFETY/ RHE**	• - To identify and respond safely to	**All children will** • Know what cyber bullying • Know to tell an adult if they are being cyberbullied

	• I know how to recognise cyberbullying. • I know who to tell if I encounter cyberbullying. • I know how the impact cyber bullying can have on our mental health and well being • I know what a bystander is and what to do to support someone who is being cyber-bullied • I know what a search engine is • I know how an online search works. • I know how to search for specific information effectively and safely online • I know that not everything online is trustworthy • I know what how to identify whether information online is reliable • I know how to keep myself safe online. • I know how to keep myself emotionally safe online. • I know where and how to report concerns and get support with issues online	**cyber-bullying** • **Know how to use search engines effectively and safely**	• Know what a bystander is • Know that cyber-bullying can make someone upset, angry, sad, scared • Know that a search engine helps us find information on the internet and can name an example of one. • Choose an appropriate number of words for a search term. • Knows that not everything you see online is reliable • Know how to keep themselves safe on line including who and where to report concerns to. **Most children will** • • Know what cyber bullying is and the signs of it • Know what to do when someone is being cyberbullied including the role of a bystander • Know some of the effects cyber-bullying can have on your mental health • Understand what a search engine is and that search results are ranked. • Choose an appropriate number of words for a search term. • Knows that not everything you see online is reliable and know some strategies for spotting what is fake and real. • Know how to keep themselves safe on line including who and where to report concerns to. **Some children will** • • Know what cyber bullying is and can explain examples of it • Know what to do when someone is being cyberbullied including the role of a bystander • Can explain the effects cyber-bullying can have on your mental health • Understand what a search engine is and that search results are ranked. • Knows what tracking is. • Choose an appropriate number of words for a search term. • Knows that not everything you see online is reliable and can explain strategies for spotting what is fake and real. • Know how to keep themselves safe on line including who and where to report concerns to.
	Computer Systems – Network Engineers • I know what a network is • I know how to make a map of my friends and family network • I know what a school computer network looks like • I know that information moves around the school network via the internet and cables	- to be able to identify parts of a network - to be able recognise my own digital footprint	**All children will** Have simplistic understanding of the connections in the school network. Be able to suggest which parts of a network send and store information. Understand that the internet is a web of computers that are connected by wires across the world. Know that we leave a digital footprint from the things we search. Know who Tim Burners Lee is and his contributions to the internet **Most children will** Be able to draw a diagram showing some of the computers and devices on the school network. Be able to explain the role of a server, switch and router in a computer network. Be able to explain the route data may take around a computer network and the internet and know that data is split into packets that can take different routes. Understand that we can leave a digital footprint

	• I know what the internet is • I know what happens when I make a search on the internet • I know who Tim Berners-Lee is and his contribution to the development of the internet • I know how information is passed across the internet • I know why an internet search might fail • I know what a digital footprint is.		online that others can trace. Explain who Tim Burners Lee is and his contributions to the internet. **Some children will** Be able to draw a detailed diagram of the school network, including wired and wireless computers, devices and printers. They will be able to explain the role of different parts of a computer network. Be able to explain how data might move through a network when users perform actions like logging on, opening and printing a document. Explain a number of ways we leave a digital footprint online and how others can trace it. Understand the impact that Tim Burners Lee has had on our use of the internet today.
	Programming – Scratch Music Machine • Know what programming and coding is. • Know and understand what an algorithm is. • Know how to debug a simple program. • know what a coding sequence and repetition are • know what input and output mean • Know how to create a simple program. • Know how to code a mouse click as an input. • I know how to code a button to play sounds • know how to code a sequence of notes • I know how to code a sequence of drums • I know how to code multiple sequences alongside each other	Pupils create simple buttons which play different sounds when they are clicked with the left mouse button. Sounds are created using sequences of notes, repeat loops and imported sounds.	**All children will** Create programs that still contain bugs, not be confident describing sequences of code, use mostly strings of individual blocks and need to use support materials. **Most children will** Create a program with buttons that play sequences of notes or imported sounds. Sequences will use strings of individual blocks, repeat loops and may include instrument, volume and tempo blocks. They should also be able to describe the order blocks in a sequence will be played and debug their own code. **Some children will** Create a program that may also include a flashing background, volume/tempo controls or a button to stop it playing. Sequences will use strings of individual blocks; repeat loops; instrument, volume and tempo blocks and may show creative use of imported sounds. They should also be able to confidently describe the order blocks in a sequence will be played and debug their own code independently.

	• **Know how to code a repeat loop command.** • I know how to use a set tempo to block in my code • I know how to change the type of note using the instrument block • Know how to use a set volume to block on one instrument • I know how to create a sequence that includes an imported sound • I know how to create a sequence that uses a play sound and a play sound until block • know who Alan Turing is and his importance in computing.		
	Programming – Scratch Smoking car I know what decomposition is. I know new logical language I know how to use logical language. I know how to code a sprite to change direction using the arrow keys. **I know how to code a sprite to move using a keyboard key.** **I know how to draw a simple background.** I know how to make the backgrounds rotate using a keyboard press. I know how to code the pen to go up and down with keyboard presses. I know how to code a key to clear all pen drawings. I know how to make a title page using a sprite I know how to make a	**To be able to code a sprite to move in different directions** **To be able to create a background and make it move** **To be able to use code to draw an image** **To be able to erase their drawing with code** **To be able to make a sprite disappear and reappear**	**All children will** Know some new vocabulary. Create a program where the sprite is directed around the screen using the keyboard with some bugs. They will have created a background with support and may have included some code for the pen tool. **Most children will** Know some vocabulary and begin to use it when discussing their work. Create a program where a sprite is directed around the screen using keyboard inputs. They will have created more than one background that you can rotate using a keyboard input. They will also have code that allows the turning on, off and clearing of the pen tool. They may or may not include a title screen. **Some children will** Know new vocabulary and use it with confidence when discussing and explaining their work. Create a program that will also include a title screen with clear instructions for the game that appears when the game is run and the disappears after a few seconds. They may have multiple backgrounds of their own design.

	sprite appear and disappear from view.		
	Word processing Know how to create a word document. Know how to save a document. Know how to print a document. Know how to format text in Word. Know how to insert an image into word. Know how to copy and paste. To know how to create a table in a word document To know how to insert a shape in a word document To know how to format a shape in a word document To know how to insert an arrow in a word document To know how to check spellings and grammar in a word document To know how to insert a page border in a word document	Be able to insert and populate a table Be able to insert and format a shape Be able to insert and adapt an arrow shape Be able to correct spellings and grammar with the aid of the software Be able to insert and personalise a page border	**All children will** Create a word document which includes a table with 3 columns and an appropriate number of rows. It will include up to 4 or 5 table entries with shapes and limited/ copied descriptions. It will also include a diagram with arrows connected from at least one features to some description of the feature. There might have been some attempt to use the spelling and grammar checkers. **Most children will** Create a word document which includes a table with 3 columns and an appropriate number of rows. It will include 4 or 5 table entries with shapes and descriptions. It will also include a diagram with arrows connected from features to some description of the feature. It will be mostly correctly spelled and punctuated. **Some children will** Create a well presented and organised word document which includes a table with 3 columns and an appropriate number of rows. It will include 5 or more table entries with shapes and descriptions. It will also include a diagram with arrows connected from features to clear descriptions of the feature. It will be mostly correctly spelled and punctuated and may include a page border. There may be some observation of the individual occasionally using shortcut keys for common functions like undoing.
	Using Technology – We are Meteorologists • I know examples of technology for measuring the weather • I know how to input weather data into a spreadsheet • I know how to identify unusual data • I know what it means to analyse data • I know how to use my data to answer questions	**How to measure weather** **How to input data into a spreadsheet** **How to identify erroneous data** **How to make a graph on a spreadsheet** **How to make a prediction based on data** **How to create a presentation**	**All children will** Use weather measurement equipment safely Enter data Take digital photographs Create simple charts Make predictions Create a presentation for their weather forecast Show an interest in how data can predict the weather **Most children will** Use weather measurement equipment accurately Describe the weather Make sensible predictions Add measurements and descriptions to photographs Present the weather effectively to their peers Be inquisitive about how data can predict the weather **Some children will** Use weather equipment effectively to describe and analyse the weather Identify unusual data

	• I know how to present weather data in a graph • I know how to create multiple types of graph • I know how make a presentation using photos and text • I know how to create a presentation in the style of a weather forecast • I know how to use a presentation to give a weather forecast		Make accurate predictions Consider some of the difficulties in predicting the weather Log detailed measurements in a graph Use their data to analyse their findings and be inquisitive and an interest to know more
Year 5	**We are Photographers** E-SAFETY RECAP: I know how to look for changes that have been made to an original photograph. • I know a famous photographer • I know the features of a good photograph • I know key vocabulary linked to photography (focus, angle, zoom, crop) • I know how to use a digital camera • I know how to upload photographs to a computer • I know how to apply an effect to a photograph • I know how to crop a photograph • I know what a photo collage is • I know how to insert photographs into a document • I know how to add borders to frame photographs • I know what powerpoint is	- To be able to recognise features of a quality photo - To be able to take a digital photo. - To be able to upload a digital photo. - To be able to edit a digital photo. To be able to present a collection of digital photos.	**Some children will** Take steady photographs upload photos to a computer file use imaging editing software to enhance their photos select specific filters and effects to produce more effective images explain how particular effects have been achieved in their work or might have been achieved in the works of others. present their work in a slideshow with a range of transitions to maintain the viewers interest **Most children will** Take a good photo on a camera Upload multiple photos to a computer file use imaging editing software to enhance their photos use a range of filters and effects to produce more effective images present their work in a slide show with some transitions to gain the viewers interest **All children will** Be able to take a photograph Upload some photos to the computer begin to explore ways to edit a photograph on a computer program sort their photos into a simple presentation to show to others

	• I know how to add images to a powerpoint presentation • I know how to include different transitions		
	E-Safety/ RHE I know the risks of spending too much time online on my physical and mental wellbeing. I know how to ration the time I spend online to improve my physical and mental health. I know what email is and what it is used for. I know the signs of a suspicious email. I know what a SPAM email is and its dangers I know how to identify spam emails and what to do with them. I know how to write and send an email I know what information is safe to share on line. I know what personal information should be kept private. I know how to identify a safe website I know how to look for changes that have been made to an original photograph. I know that not everything I see online is true. I know how false photographs can make people feel bad about themselves. I know how to recognise how images in the media (and online) do not always reflect reality I know how to recognise how images in the media can affect how people feel about themselves I know who to where and how to get support with online issues.	**Identifying suspicious emails.** **Sending safe emails** **Identifying safe websites** **Identifying manipulated photos.**	**All children will** • Know a risk of spending too much time online on their physical and mental wellbeing • Know that it is importance to limit the time we spend online • Know what email is • Know some signs of a spam email. • Know what to do with a spam email. • Know not everything the see online is true. • Know that photographs can be altered • Know online images and advertising can make us feel sad about ourselves **Most children will** • Know some risks of spending too much time online on their physical and mental wellbeing • Know some ways they can ration the time they spend online • Know what email is and how it is used. • Can identify suspicious and SPAM and explain some dangers of spam email. • Know what information can be shared online and what information to keep private • Know 3 ways to identify a safe website. • Understand that not everything we see online is true • Explain how photographs can be altered and why they might have been altered Know online images and advertising can negatively impact our mental wellbeing **Some children will** • Know a range of risks of spending too much time online on their physical and mental wellbeing • Know a range of ways they can ration the time they spend online • Can explain the benefits of using email and why people use email. • Identify SPAM and explain the dangers of spam email. • Explain some steps to take to avoid receiving spam email and what to do if you do receive SPAM • Can explain the importance of keeping personal information private • Know ways to identify a safe website and how to recognise fake ones. • Understand that not everything we see online is true • Explain how photos can be altered and why we might do this • Know online images and advertising can negatively impact our mental wellbeing
	Programming scratch Crab Maze I know who Grace Hopper is I know what the term	Children can draw a maze Children can create a program to steer a crab around a maze	**All children will** Draw their own maze Can code the sprite across the screen. Can use a repeat loop	

'decompose' means I know how to decompose a computer program I know what a forever loop does I know how to use a forever loop to make my crab look like it is opening and closing its claws I know what conditional selection means I know how to make my crab move when the game starts I know how to make my crab steer when I press a key on the keyboard I know how to design a maze with a start and finish I know how to make mazes where all the walls are the same colour I know what a spawn point is I know how to make the game stop when the crab touches the maze wall I know how to use coordinates to make a spawn point so the crab starts at the starting point I know how to make the game change level when the crab touches the finish colour I know how to make a coin that can be picked up by the crab increasing the score I know how I might make a game like this myself	using keys on the keyboard. Children can code when the crab touches the walls of the maze the game ends. Children can use coordinates to program their sprite to move to a certain point when the game ends. Children can add scoring coins using a variable to hold the score.	Create a simple program that may still have bugs. Can begin to verbalise some understanding of the coordinates **Most children will** Create their own maze Can code their sprite to move efficiently around the maze can use different code and algorithms can create a simple program and begin to debug errors understands the use of coordinates and programs a sprite to spawn to a specific point **Some children will** Can draw different levels of mazes con confidently use a range of code commands and algorithms can program the game to end if the sprite touches a wall then use coordinates to respawn the sprite in a desired location Can include coins and scoring to their program. May also create a plan for a similar game of the own design. Can debug errors in their code
<mark>**Programming – Scratch WEDO race car**</mark> • To know how to construct a simple robotic vehicle using lego	• Be able to build a working vehicle with 2 motors • Be able to connect a Lego smart hub to a computer	**All children will** Design, make and program a simple vehicle that incorporates 2 motors and a Lego smart hub. They will be able to connect the Smart hub to the computer using Bluetooth with support. They will be able to program the vehicle to move forward, backwards, stop and turn with limited accuracy. They should be able to

	• To know what blue tooth is • To know how to connect a Lego smart hub via Bluetooth • To know how to code a motor to start and stop using scratch • To know how to code motors to make left and right turns using scratch • To know how to code a robot to follow a course with straights and turns using scratch	• Be able to code motors to start and stop using scratch • Be able to code motors to work together to make turns • Be able to code a robot to follow a more complicated path	debug their code with support and improve their code based on the actions of their robot. **Most children will** Design, make and program a simple vehicle that incorporates 2 motors and a Lego smart hub. They will be able to connect the Smart hub to the computer using Bluetooth. They will be able to program the vehicle to move forward, backwards, stop and turn. They should be able to debug their code with some support and improve their code based on the actions of their robot. **Some children will** Design, make and program a simple vehicle that incorporates 2 motors and a Lego smart hub. They will be able to connect the Smart hub to the computer using Bluetooth independently. They will be able to program the vehicle to move forward, backwards, stop and turn with accuracy. They should be able to debug their code and improve their code based on the actions of their robot independently.
	Computer system – HTML editors Know the parts of a URL address Know that web pages are written in HTML Know how to change a heading on a webpage Know how to change a paragraph on a webpage Know how to change an image on a webpage Know how to change the height and width of an image Know how to stay safe online Know how to make headings on my webpage Know how to make subheadings on my webpage Know how to make paragraphs on my webpage I know how to add photos to my web page I know how to add a hyperlink to my webpage	**Can edit a webpage** **Can create their own webpage**	**All children will** Show some understanding of HTTP Be aware of the history of the web Use <img/> and <iframe>… tags can begin to edit an existing webpage **Most children will** Explain the parts of URL Recognise the importance of links for the web Use the … tag correctly to insert a link Create a webpage by writing HTML and they show due regard for safety and responsibility **Some children will** Understand the difference between the web and the internet Understand that web pages are written and transmitted in HTML Know and use some simple HTML Edit the HTML for a web page Create web pages that do not reveal pupils' personal information
	3D modelling- Sketchup To know how to draw 2d shapes in Sketchup	To be able to create 2d and 3d models in Sketchup	**All children will** - Draw and manipulate scale 3D models with support. - Select the correct tools for different features.

	To know how to make 3d shapes in Sketchup To know how to make an offset line in Sketchup To know how to use the push/pull tool in Sketchup To know how to erase shapes and lines in Sketchup To know how to use the inference tools to improve accuracy in Sketchup To know how to add a material to a model in Sketchup To know how to import a model into Sketchup	To be able to use a variety of tools to create accurate models. To be able to adapt and improve models. To be able to combine their own models and ones imported from the 3d warehouse library.	- Independently use a more limited range of SketchUp tools. **Most children will** - Draw 2D shapes or lines. - Draw simple 3D models. - Manipulate 2D shapes into 3D shapes. - Import 3D models from the 3D warehouse. - Use a range of SketchUp tools including: shape, push, pull, orbit, pan, zoom, erase and fill **Some children will** - Draw and manipulate 3D models independently. - Use inference points to draw lines and shapes. - Use a wide range of SketchUp tools and concepts including: the dimensions toolbar and guides, tape measure, zoom extents and the 3D warehouse
Year 6	**We are artists** • I know what a tessellation is • I know how to draw simple shapes using Inkscape • I know how to duplicate shapes in Inkscape • I know how to create lines in a computer aided programme (Inkscape) • I know how to create a complex shape which will tesselate • I know who Bridget Riley is • I know to apply filters to my artwork	• - use a computer to create artistic designs. • - use built in features to enhance compositions.	**All children will** Be able to efficiently use a vector-based drawing program to create a simple tessellation. Be able to copy code into scratch to create repeating shape patterns. Be able to create a tessellation in the style of Bridget Riley. **Most children will** Be able to efficiently use a vector-based drawing program to create a simple tessellation. Be able to efficiently use a vector-based drawing program to create a more complex tessellation. Be able to use scratch to create patterns out of repeating shapes. Be able to create a tessellation in the style of Bridget Riley. **Some children will** Be able to efficiently use a vector-based drawing program to create a simple tessellation. Be able to efficiently use a vector-based drawing program to create a more complex tessellation. Be able to use scratch to create patterns with dynamic variables (size, colour, shade) out of repeating shapes. Be able to create an aesthetically pleasing tessellation in the style of Bridget Riley.
	E-Safety/ RHE I know why someone might have an online friendship. I know what personal information is and why it should be kept private. I know some of the dangers of revealing personal information to an online friend.	**Identifying warning signs when communicating with another person online.** **Identifying and reacting to cyberbullying.** **I can recognise stereotypes and the negative impact this can have**	**All children will** • Know one positive and one negative of having an online relationship. • Identify personal information. • Explain some dangers of revealing personal information to an online friend. • Say what bullying and cyberbullying are. • Understand why they should ask an adult if they are worried about cyber bullying. • Understand what a stereotype is. • Know what age restrictions are and how they keep us safe • Know what plagiarism is.

	I know how to keep myself safe when communicating with an online friend. I know what bullying and cyberbullying are. I know how the impact cyber bullying can have on our mental health and physical well being I know ways in which people could address cyberbullying. I know what a stereotype is I know how a stereotype can be unfair, negative or destructive. I know how to identify a gender stereotype in an online media message. I know what an age restriction I know age restrictions for some computer games and social media sites. I know why age restrictions are used to keep children safe. I know what a citation is I know why it is important to cite a source. I know how to cite a website.	**Know how to cite websites used**	**Most children will** • Know the positives and negatives of having an online friendship • Understand why certain information should be kept private • Identify cyber bullying and offer an effective suggestion of what to do • Identify a gender stereotype and discus the impact this can have on someone • Know why computer games and social media have age restrictions and how they keep us safe • Know the importance of using citations and what plagiarism is. **Some children will** • Explain why people have online relationships and how they can be negative. • Reason why certain information should be kept private • Explain what certain information is safe to be public • Explain the equivalence between online and in person bullying. • Offer good advice to someone who may be experiencing cyberbullying • Identify gender stereotyping in a media message. • Understand and explain the impact stereotyping can have on mental health • Know why computer games and social media have age restrictions and how they keep us safe Know the importance of using citations and what plagiarism is.
	Scratch Maths quiz • know what programming and coding is. • Know and understand what an algorithm is. • Know how to create a simple program. • I know how to include a start block and a welcoming block of code • I know how to ask and answer questions in code • I know how to code maths questions • Know how to code key press as an input. • Know how to use conditional selection (if commands).	- **To include a welcoming block of code to a game** - **To program questions and answers** - **To programme different responses to background and sound to correct or incorrect answers** - **To programme a point scoring system**	**All children will** Create a quiz program that contains some bugs use code to ask and answer simple questions Can duplicate blocks of code Can add some sounds and change the background Will recognise an image of Steve Jobs **Most children will** Program a maths quiz that asks multiple maths questions and responds with the sprite saying "correct" or "wrong" using if-else selection blocks. They will be able to duplicate blocks of code and use a variable to keep score. They may use a broadcast block to code the background to change after a correct answer. Know why Steve Jobs is an important figure **Some children will** Create a program which may also take away points for incorrect answers, make a sound for correct answers, change the background if answer is wrong. They may go on to apply what they have learnt to begin making a new quiz of their own. Discuss who Steve Jobs is and explain how his contributions have developed computing and technology

	• know how to use and if-else selection block to make my sprite say correct or wrong • I know how to duplicate blocks of code efficiently • I know how I can test my code after making every question and fix (debug) any errors. • Know what a variable is • I know how to create a variable called score and use it to collect the score throughout the quiz • I know how to change the background when the user gets the question correct • I know how to take away a point if the user gets the question wrong • I know how to add sounds if user gets question right or wrong • Know who Bill Gates is and why he is important in computing		
	Programming -Scratch WEDO- toilet fan I know how to design and build a basic fan with a sensor out of Lego I know how to draw a diagram of my Lego model I know how to connect my hub to the computer using Bluetooth I know what a motor output is I know how to code the fan to turn on (o) and	- Be able to create and use programming to control a model - Be able to debug errors in code	**All children will** Design, make and program a simple fan that incorporates a motor and a distance sensor with support. Use support cards to connect the Smart hub to the computer. Follow guided group work to complete the challenges. Can program the fan to turn on and off **Most children will** Design, make and program a simple fan that incorporates a motor and a distance sensor. They will be able to connect the Smart hub to the computer using Bluetooth. They will be able to program the fan to turn on and off to key presses, set the motor speed and gradually speed up and slow down. They should be able to debug their code with some support and use the sensor as an input. **Some children will**

	off (x) using keyboard buttons I know how to code the fan to go fast (f) slow (s) and medium (m) speeds I know how to code the fan to turn on, spin for a set time and then turn off again from one key (t) press I know how to code the fan to start slowly and gradually get faster before gradually getting slower again (r) I know what a distance sensor is and its purpose I know how to code the fan to start when it detects movement I know how to code the fan to speed up using a variable I know how to code the fan to respond to input from a tilt switch		To also, adapt their model and code to input from a tilt switch sensor. Code the fan speed using a variable and rebuild their model into a plane.
	<mark>Using technology – Animation</mark> • **To know what a stop-motion animation is.** • **To know that stop-motion animation is made using a series of individual frames or pictures.** • **To know how to storyboard an animation.** • **To know how to create a backdrop/ scenery for an animation.** • **To know how to use a digital camera.** • **To know how to move a model in a stop motion animation.** • **To know how to upload photos to a computer.**	• **To be able to create a stop-motion animation using a 'stick-man' animation program.** • **To be able to write a storyboard.** • **To be able to make a backdrop/ scenery.** • **To be able to use a digital camera.** • **To be able to use a stop-motion animation program that uses pictures.** • **To be able to use moviemaker to combine a video and audio track and export a single file.**	**All children will** A simple animation that moves an object, might include unwanted hands in the clip/ jerky movements. **Most children will** Create a stop-frame animation that gets characters to move in small increments. It will have simple scenery and may have background music or spoken audio. **Some children will** A complex animation that relates a clear narrative. It could have good scenery, a good focus, can also include removal or adding tricks (Where things are taken away or added to create an effect, for eg sinking of Titanic by cutting layers of the ship off) May have titles. May also have sound edited using audacity.

	• **To know how to combine video and audio clips.**		
	Know how to use a spreadsheet to record data Know how to use a formula to add two cells Know how to use a formula to multiply two cells Know how to use a formula to add up multiple numbers Know how to complete the visitor spending spreadsheet Know how to make a pie chart to show visitor spending Know how to make a pie chart to show costs Know how to use a drag selection to auto complete a column Know how to make a column chart to show profit Know how to use a formula to calculate percentages Know how to make my spreadsheets look clear and attractive	**Be able to create a clearly presented spread sheet** **Be able to import data into graphs** **Be able to use formulas to add and multiply numbers in cells** **Be able to verbalise what their spread sheet represents**	**All children will** Can use autocomplete to repeat a single value data with support. Can copy a simple formula into a spreadsheet. Can create a graph from spreadsheet data with support. Can change the colour of some cells in a spreadsheet. Can verbalise what their spread sheet shows **Most children will** Can use autocomplete to repeat a single value data and incrementally increasing data with support. Can create a simple formula to calculate within a spreadsheet with support. Can create a variety of graph from spreadsheet data with support. Can change the colour of cells in a spreadsheet to make the data easier to read. Can explain what the data on the spread sheet represents **Some children will** Can use autocomplete to repeat a single value data and incrementally increasing data independently. Can create a simple formula to calculate within a spreadsheet independently. Can create a variety of graphs from spreadsheet data independently. Can change the colour of some cells in a spreadsheet to make the data easier to read and aesthetically pleasing. Can explain in detail what their spread sheet represents and use it to inform others of profits made.