Progression and assessment in Computing

Computing Intent

At our school we want pupils to be masters of technology and not slaves to it. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers and our broad curriculum encompassing computer science, information technology and digital literacy reflects this. We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology (especially social media) to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education.

We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists.

We encourage staff to try and embed computing across the whole curriculum to make learning creative and accessible, though all pupils access discreet timetabled computing teaching to allow them to develop the knowledge and skills they need for this. We want our pupils to be fluent with a range of tools to best express their understanding and hope by Upper Key Stage 2, children have the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers.

Colour				
Area of study	Computer Science	Information Technology	Digital Literacy	ESafety

Developing, Securing, Mastering explained:

Depth of Learning	Cognitive challenge	Nature of progress	Typically, pupils will	Predominant teaching style
Developing	Low level cognitive demand. Involves following instructions.	Acquiring	name, describe, follow instructions or methods, complete tasks, recall information, ask basic questions, use, match, report, measure, list, illustrate, label, recognise, tell, repeat, arrange, define, memorise.	Modelling Explaining
Securing	Higher level of cognitive demand. Involves mental processing beyond recall. Requires some degree of decision making.	Practising	apply skills to solve problems, explain methods, classify, infer, categorise, identify patterns, organise, modify, predict, interpret, summarise, make observations, estimate, compare.	Reminding Guiding
Mastering	Cognitive demands are complex and abstract. Involves problems with multi-steps or more than one possible answer.	Deepening Understanding	Requires justification of answers. solve non-routine problems, appraise, explain concepts, hypothesise, investigate, cite evidence, design, create, prove.	Coaching Mentoring

Progression and assessment in Computing

	Foundation Stage	Year ½	Year 3/4	Year 5/6
Computer Science	Pupils should be taught to: Make connections between control devices and information on the screen. Use web or mobile applications to manipulate something on the screen. Respond to simple instructions to control a device. Begin to choose equipment and application for a familiar activity. Recognise that a range of technology is used in homes and in schools.	Pupils should be taught to: • understand what algorithms are; how they are implemented as programs on digital devices and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs	Pupils should be taught to: • design write and debug programs that accomplish specific goals,…..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	Pupils should be taught to: • 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
	SIMPLE CITY AND MATHS CITY *• Use the drag and drop activities on the interactive whiteboard to share activities for the children to work together on.* *• Talk to the children about taking turns and working at the whiteboard one at a time.* *Choose the drag and drop activity you want the children to create e.g. a garden.* *• Talk to the children about the picture that they are going to make, show them how to drag the object onto the screen and to watch carefully to see if anything happens.*	*Year 1 Programming A – Moving a robot* *To explain what a given command will do* *To act out a given word* *To combine forwards and backwards commands to make a sequence* *To combine four direction commands to make sequences* *To plan a simple program* *To find more than one solution to a problem* *Year 1 Programming B - Animation* *To choose a command for a given purpose* *To show that a series of commands can be joined together* *To identify the effect of changing a value* *To explain that each sprite has its own instructions* *To design the parts of a project* *To use my algorithm to create a program* *Year 2 Programming A – Robot Algorithms* *To describe a series of instructions as a sequence* *To explain what happens when we change the order of instructions* *To use logical reasoning to predict the outcome of a program (series of commands)* *To explain that programming projects can have code and artwork* *To design an algorithm* *To create and debug a program that I have written* *Year 2 Programming B – Introduction to quizzes* *To explain that a sequence of commands has a start* *To explain that a sequence of commands has an outcome* *To create a program using a given design* *To change a given design* *To create a program using my own design* *To decide how my project can be improved*	*Year 3 Programming A – Sequence in music* *To explore a new programming environment* *I can identify that each sprite is controlled by the commands I choose* *To explain that a program has a start* *To recognise that a sequence of commands can have an order* *To change the appearance of my project* *To create a project from a task description* *Year 3 Programming B - Events and Actions* *To explain how a sprite moves in an existing project* *To create a program to move a sprite in four directions* *To adapt a program to a new context* *To develop my program by adding features* *To identify and fix bugs in a program* *To design and create a maze-based challenge* *Year 4 Programming A- Repetition in Shapes* *To identify that accuracy in programming is important* *To create a program in a text-based language* *To explain what 'repeat' means* *To modify a count-controlled loop to produce a given outcome* *To decompose a program into parts* *To create a program that uses count-controlled loops to produce a given outcome* *Year 4 Programming B – Repetition in games* *To develop the use of count-controlled loops in a different programming environment* *To explain that in programming there are infinite loops and count controlled loops* *To develop a design which includes two or more loops which run at the same time* *To modify an infinite loop in a given program* *To design a project that includes repetition* *To create a project that includes repetition*	*Year 5 Programming A – Selection in physical computing* *To control a simple circuit connected to a computer* *To write a program that includes count-controlled loops* *To explain that a loop can stop when a condition is met, eg number of times* *To conclude that a loop can be used to repeatedly check whether a condition has been met* *To design a physical project that includes selection* *To create a controllable system that includes selection* *Year 5 Programming B – Selection in Quizzes* *To explain how selection is used in computer programs* *To relate that a conditional statement connects a condition to an outcome* *To explain how selection directs the flow of a program* *To design a program which uses selection* *To create a program which uses selection* *To evaluate my program* *Year 6 Programming A – Variables in Games* *To define a 'variable' as something that is changeable* *To explain why a variable is used in a program* *To choose how to improve a game by using variables* *To design a project that builds on a given example* *To use my design to create a project* *To evaluate my project* *Year 6 Programming B – Sensing* *To create a program to run on a controllable device* *To explain that selection can control the flow of a program* *To update a variable with a user input* *To use an conditional statement to compare a variable to a value* *To design a project that uses inputs and outputs on a controllable device* *To develop a program to use inputs and outputs on a controllable device*

Progression and assessment in Computing

Assessment Criteria and KPIs		**Year 1 Expected** **Can they create a simple series of instructions - left and right? • Can they record their routes? • Do they understand forwards, backwards, up and down? • Can they put two instructions together to control a programmable device? • Can they begin to plan and test their instructions?** **Year 2 Expected** **Can they predict the outcomes of a set of instructions? • Can they program using sequences of instructions to implement an algorithm? • Can you create an algorithm for your partner to debug? • Can they test and amend a set of instructions?**	**Year 3 Expected** **Can they experiment with variables to control models? • Can they give an on-screen robot directional instructions (e.g. 90/45 degree turns)? • Can they write more complex programs (leading to varying outcomes)? • Do they understand input and output? • Can they use commands to draw a shape (e.g. square, rectangle and other regular shapes on screen)?** **Year 4 Expected** **Can they use repeat instructions to draw regular shapes on screen, using commands?** **Can they experiment with variables to control models?** **Can they make turns specifying the degrees?** **Can they make accurate predictions about the outcome of a program they have written?** **Can they give an on-screen robot specific directional instructions that takes them from x to y?**	**Year 5 Expected** **Can they combine sequences of instructions and procedures to turn devices on or off?** **Do they understand input and output?** **Can they explore 'What is' questions by playing adventure or quest games?** **Can they plan a solution to a problem using decomposition (e.g. developing a computer game, creating a website)?** **Year 6 Expected** **Can they explain how an algorithm works?** **Can they detect errors in a program and correct them?** **Can they explore 'what if' questions by planning different scenarios for controlled devices?** **Can design, write and debug their own computer control application?**
Vocabulary	EYFS- **Button, press, forward, backwards, on, off, switch, scroll**, app, bee-bot	Year 1- Programmed**, robot,** algorithm**,** *button***, direction,** *forward, backward,* **left, right, route, scratch junior, sprite, home,** command**,** block, stage, **background, app** Year 2- Program*, robot,* algorithm, *direction***,** *route***, obstacle, design, error, chunking,** debugging**,** scratch junior, sprite, **quiz, command, block, sequence, outcome**	Year 3- **Programming, scratch, blocks,** *commands*, code, **sprite, stage, costume, backdrop, debugging, events,** *motion,* **sequence, trailing** Year 4- *Programming*, **logo, turtle,** *commands,* **code, curser, algorithm, pattern, sequence,** *debugging,* scratch, blocks, *events*, **motion, trailing**	Year 5- *Programming,* **circuit, electricity, micro-controller**, *code***, LED**, *algorithm,* **motor, modify,** *debugging,* **logical, condition,** *trialling* *Year 6- Programming,* **variable**, *scratch,* **events**, *code, LED, algorithm, motor, modify, debugging,* **micro-bit, sensor, random, condition, accelerometer, emulator,** *motion*

Progression and assessment in Computing

	Foundation Stage	Year 1/2	Year ¾	Year 5/6
Digital Literacy	Use computing to interact with other pupils and adults. Gather information from different sources. Find similar information in different formats (such as in photographs, books, websites or television programmes). Use a simple application on a computer or mobile device.	Pupils should be taught to: • recognise common uses of information technology beyond school	Pupils should be taught to: • recognise common uses of information technology beyond school	Pupils should be taught to: • understand computer networks including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration
	Technology *Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.* ***MiniMash*** *Talk to the children about how they use different technology in school.* *• Why do the teachers use computers to help them to do their job?* *• Why do you need a computer in the school office?* *• What do we use at home every day?* *• What other types of technology are used around school?* *• Photocopier* *• Microwave*	*Year 1 Computing Systems and Networks* *To identify technology* *To identify a computer and its main parts* *To use a mouse in different ways* *To use a keyboard to type* *To use the keyboard to edit text* *To create rules for using technology responsibly* *Year 2 Computing Systems and Networks* *To recognise the uses and features of information technology* *To identify information technology in the home* *To identify information technology beyond school* *To explain how information technology benefits us* *To show how to use information technology safely* *To recognise that choices are made when using information technology*	*Year 3 – Computing Systems and Networks* *To explain how digital devices function* *To identify input and output devices* *To recognise how digital devices can change the way we work* *To explain how a computer network can be used to share information* *To explore how digital devices can be connected* *To recognise the physical components of a network* *Year 4 – Computing Systems and Networks* *To describe how networks physically connect to other networks* *To recognise how networked devices make up the internet* *To outline how websites can be shared via the World Wide Web* *To describe how content can be added and accessed on the World Wide Web* *To recognise how the content of the WWW is created by people* *To evaluate the consequences of unreliable content*	*Year 5 – Computing Systems and Networks* *To explain that computers can be connected together to form systems* *To recognise the role of computer systems in our lives* *To recognise how information is transferred over the internet* *To explain how sharing information online lets people in different places work together* *To contribute to a shared project online* *To evaluate different ways of working together online* *Year 6 – Computer Systems and Networks* *To identify how to use a search engine* *To describe how search engines select results* *To explain how search results are ranked* *To recognise why the order of results is important, and to whom* *To recognise how we communicate using technology* *To evaluate different methods of online communication*
KPIs – Digital literacy		**Year 1 Expected** **Do they recognise the different forms of digital communication (e.g. email address)? • Can they understand the appropriate vocabulary according to equipment available? • Can they develop awareness and use of keyboard layout and use navigation skills appropriately (e.g. backspace, enter, spacebar, mouse)?** **Year 2 Expected** **Can they communicate safely online (e.g. reply to email)? • Can they create, edit and format text (insert/delete words, use bold/italics/underline)?**	**Year 3 Expected** **Can they open and send an attachment? • Can they find relevant information by browsing a menu? • Can they search for an image, then copy and paste it into a • document? • Can they copy and paste text into a document? • Do they know how to manipulate text (e.g. underline text, centre text, change font and size)? • Can they save files (e.g. word doc, pictures) to an appropriate folder?** **Year 4 Expected** **Can they identify the benefits of ICT to send messages and to communicate?** **Can they use the automatic spell checker to edit spellings?** **Can they use a search engine to find a specific website?** **Do they know how to manipulate text (e.g. underline text, centre text, change font and size)?** **Can they navigate using an internet browser (e.g. use tabbed browsing to open two or more web pages at the same time, open a link to a new window)?**	**Year 5 Expected** **Can they conduct a video chat with someone elsewhere in the school or in another school?** **Can they use bullets and numbering tools?** **Can they use a search engine using keyword searches?** **Can they compare the results of different searches?** **Can they download a document and save it to the computer?** **Can they decide which sections are appropriate to copy and paste from at least two web pages?** **Year 6 Expected** **Can they conduct a video chat with people in another country or organisation?** **Can they contribute to discussions online?** **Can they use a search engine using keyword searches?** **Can they confidently choose the correct page set up option when creating a document?** **Can they confidently use text formatting tools, including heading and body text?** **Can they use complex searches using such as '+' 'OR' "Find the phrase in inverted commas"?**

Progression and assessment in Computing

Vocabulary	**EYFS- tally, amount, number, most, least, more, less, favourite, similar, different** **Paintbrush, drag, colour, click, photo, draw**	**Year 1-** Information**, search,** data**,** label**, group, describe,** program**,** properties*, similar, different* **Paint program, tool,** *paintbrush*, **erase, fill, undo,** *click, drag,* **save, icon** **Word processor, text, font, keyboard,** text cursor, **enter, spacebar,** toolbar, icon **Year 2- Information** Data *Search* **Label** *Group* **Describe Program Properties** *Similar Different* **Photography, editing,** software**,** digital**, portrait, landscape, scene, subject, lighting, colour**	**Year 3-** *Information,* **data,** attributes, *group,* **branching, data base, multiple, classify,** structure, **present** **Publishing, text, images, font, templates, orientation, placeholders, software, purpose, audience** **Animation, frame, illusion, sequence, onion skinning, playback, storyboard, audio, consistency,** *text* **Year 4-** *Information, data,* **collection, logging, sensor, analysis, data logger, software, interpret, conclusion** *Audio*, **input, output, microphone, speaker, podcast, waveform, jingle, track, presenter** *Photography*, *editing*, **software, crop, rotate/flip, copy, brightness, contrast, enlarge, reduce**	**Year 5-** *Information Data Collection Database* **Search Sort Filter** *Software* **Fields Records** **Vector, object, handles, rotate, enlarge, reduce, layering, gradient, zoom, alignment, grouping** **Video, audio, themes, message, dialogue, plot, props, zoom, angle, pan/tilt** **Year 6**- *Information Data* **Spreadsheet Format Formula Accounting Filter** *Software* **Tax Business** **Webpage, website, domain, hypertext, purpose, audience, browser, copyright, homepage, navigation pathways** **Modelling, three-dimensional, workspace, faces, vertices, edges, handles, duplicate, holes**

	Foundation Stage	**Year 1/2**	**Year 3/4**	**Year 5/6**
E-Safety	Communicate about the uses of computing. Use computing devices to interact with age-appropriate applications.	Pupils should be taught to: • use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies	Pupils should be taught to: • Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact	Pupils should be taught to: • use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact
	Mashcams *• Let the children explore with each other taking photographs by using the Mashcams and creating their own pictures.* *• Talk to the children about taking photographs and find out how many children like /dislike having photographs taken* *Let the children use the computer independently to login.* *• Give the children opportunities to work as a pair on different activities within Mini Mash and Purple Mash.* *• Talk to the children about taking turns and sharing the resources.* *• Talk about making choices and allowing each other to make choices, not always expecting to be the first one to choose.* *• Let the children take turns using the mouse and take turns to choose the activity that they want to do.* *• Use the big sand timer to help the children to mark an amount of time to have on the computer.* ***Managing Self ELG*** *Children at the expected level of development will: -Be confident to try new activities and show independence, resilience and perseverance in the face of challenge;* *-Explain the reasons for rules, know right from wrong and try to behave accordingly* ***Building Relationships ELG*** *Children at the expected level of development will: -Work and play cooperatively and take turns with others; -Form positive attachments to adults and friendships with peers; -Show sensitivity to their own and to others' needs.*	*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* ***Y1 Online Safety*** *To login safely.* *To start to introduce to the children the idea of 'ownership' of their creative work* *To know how to find saved work in the Online Work area and find teacher comments.* *To know how to find resource and become familiar with the icons and types of resources available in the Topics section.* *To start To explore the Tools section of Purple Mash and to learn about the common iicons used in Purple Mash for Save, Print, Open, New.* *To understand the importance of logging out when they have finished.* ***Year 2 Online Safety*** *To know how to refine searches using the Search tool.* *To know how to share work electronically using the display boards.* *To use digital technology to share work on Purple Mash to communicate and connect with others locally.* *To have some knowledge and understanding about sharing more globally on the Internet* *To introduce Email as a communication tool using 2Respond simulations.* *To understand how we talk to others when they aren't there in front of us.* *To open and send simple online communications in the form of*	*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* ***Year 3 Online Safety*** *To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.* *To understand how the Internet can be used to help us to communicate effectively.* *To understand how a blog can be used to help us communicate with a wider audience.* *continued* *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* *Use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content* *Pupils are introduced to the basics of online searching, including how to use effective keywords.* *They also learn to conduct searches that provide them with the most helpful and relevant information* ***Y3 Online Safety*** *For children to consider if that they read on websites is true?* *To look at some 'spoof' websites. To create a 'spoof' webpage.* *To think about why these sites might exist and how to check that the information is accurate.*	*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* ***Year 5 Online Safety*** *To gain a greater understanding of the impact that sharing digital content can have.* *To review sources of support when using technology.* *To review children's responsibility to one another in their online behaviour.* *To know how to maintain secure passwords.* *To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this.* *To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.* *To learn about how to reference sources in their work* *To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.* *Ensuring reliability through using different methods of Communication* ***Year 6 Online Safety*** *Identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g. apps accessing location.* *Identify secure sites by looking for privacy seals of approval, e.g. https, padlock icon.* *Identify the benefits and risks of giving personal information and device access to different software.* *To review the meaning of a digital ootprint and understand how*

		email. *Children can explain what a digital footprint is.* *Children can give examples of things that they wouldn't want to be in their digital footprint.*	*To learn about the meaning of age restrictions symbols on digital media and devices.* *To discuss why PEGI restrictions exist.* *To know where to turn for help if they see inappropriate content or have inappropriate contact from others.* ***Year 4 Online Safety*** *To understand how children can protect themselves from online identity theft.* *Understand that information put online leaves a digital footprint or trail and that this can aid identity theft.* *To Identify the risks and benefits of installing software including apps.* *To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.* *To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.* *To select an appropriate website from search results and begin to consider if the content is reliable.* *To identify the positive and negative influences of technology on health and the environment.* *To understand the importance of balancing game and screen time with other parts of their lives.* ***Year 4 Effective Searching*** *To locate information on the search results page* *To use search effectively to find out information.* *To assess whether an information source is true and reliable*	*and why people use their information and online presence to create a virtual image of themselves as a user.* *To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour.* *To begin to understand how information online can persist and give away details of those who share or modify it.* *To understand the importance of balancing game and screen time with other parts of their lives, e.g. explore* *the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health.* *To identify the positive and negative influences of technology on health and the environment.* *continued* *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* *Pupils learn the 'do's and don'ts' of copying and pasting information to avoid plagiarism. They learn how to avoid plagiarism by putting information in* *their own words, putting excerpted information into quotes, and providing citations. They learn to show respect for other people's creations by giving them credit.* *Use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content* *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*
Assessment Criteria and KPIs		**Year 1 Expected** **Do they know that personal information should not be shared online? • Can they act if they find something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc)?** **Year 2 Expected** **Can they recognise advertising on websites and learn to ignore it? • Can they begin to evaluate websites and know that everything on the internet is not true?**	**Year 3 Expected** **Do they recognise the difference between the work of others which has been copied (plagiarism) and restructuring and representing materials in ways which are unique and new?** **Year 4 Expected** **Can they recognise that cyber bullying is unacceptable and will be sanctioned in line with the school's policy?** **Do they understand the need for caution when using an internet search for images and what to do if they find an unsuitable image?**	**Year 5 Expected** **Can they independently, and with regard for e-safety, select and use appropriate communication tools to solve problems by collaborating and communicating with others within and beyond school?** **Do they understand they should not publish other people's pictures or tag them on the internet without permission?** **Do they know that content put online is extremely difficult to remove?**

Progression and assessment in Computing

Vocabulary	**Kind, safe, help, grown up**	**Personal information, believe, trust, report, block, family,** grown up, **help, support, private,** *kind*	*Personal information,* **rely, privacy settings,** report, block, **polite, helpful,** *kind*, **cyber bullying, parental controls**	**SPAM, filtering, firewall, IM,** parental controls, privacy settings, report, block, **social network, webcam,** cyber bullying**, cyber stalking, grooming, hacking, junk mail, sexting, troll, virus, nudes, harassment, abuse**

	Foundation Stage	**Year 1/2**	**Year 3/4**	**Year 5/6**
Information Technology	Show an understanding that information can be stored on a computer. Create simple representation of events, people and objects.	Pupils should be taught to: • use technology purposefully to create, organise, store, manipulate and retrieve digital content	Pupils should be taught to: • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	Pupils should be taught to: • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
	ELG ***Building Relationships*** *2Beat and 2Explore* *• Use 2Beat and 2Explore on the iPad as musical instruments.* *• Let the children explore creating music and sounds.* *• Use the iPad to take turns to create music and sounds, let the children play each other's 'creations'.* *• Let the children use the iPad as part of their own 'band' of musical instruments.* *• Who is going to create sounds on the iPad first? Who will use it next?* *• Which musical instruments will the children choose to play?* *• Let the children decide how they are going to organise all the instruments and where they will sit to play the different sounds.* *• Let the children take turns at using the iPad as part of their band.*	*Year 1 Digital Painting* *To describe what different freehand tools do* *To use the shape tool and the line tools* *To make careful choices when painting a digital picture* *To explain why I chose the tools I used* *To use a computer on my own to paint a picture* *To compare painting a picture on a computer and on paper* *Year 1 Grouping Data* *To label objects* *To identify that objects can be counted* *To describe objects in different ways* *To count objects with the same properties* *To compare groups of objects* *To answer questions about groups of objects*	*Year 3 – Creating media - Stop frame animation* *To explain that animation is a sequence of drawings or photographs* *To relate animated movement with a sequence of images* *To plan an animation* *To identify the need to work consistently and carefully* *To review and improve an animation* *To evaluate the impact of adding other media to an animation* *Year 3 Data and information – Branching Databases* *To create questions with yes/no answers* *To identify the object attributes needed to collect relevant data* *To create a branching database* *To identify objects using a branching database* *To explain why it is helpful for a database to be well structured* *To compare the information shown in a pictogram with a*	*Year 5 Creating Media – Video Editing* *To recognise video as moving pictures, which can include audio* *To identify digital devices that can record video* *To capture video using a digital device* *To recognise the features of an effective video* *To identify that video can be improved through reshooting and editing* *To consider the impact of the choices made when making and sharing a video* *Year 5 Data and information – Flat file databases* *To use a form to record information* *To compare paper and computer-based databases* *To outline how grouping and then sorting data allows us to answer questions*

Progression and assessment in Computing

Assessment Criteria and KPIs		*<u>Year 1 Digital Writing</u>* *To use a computer to write* *To add and remove text on a computer* *To identify that the look of text can be changed on a computer* *To make careful choices when changing text* *To explain why I used the tools that I chose* *To compare writing on a computer with writing on paper* *<u>Year 2 Digital Photography</u>* *To know what devices can be used to take photographs* *To use a digital device to take a photograph* *To describe what makes a good photograph* *To decide how photographs can be improved* *To use tools to change an image* *To recognise that images can be changed* *<u>Year 2 – Pictograms</u>* *To recognise that we can count and compare objects using tally charts* *To recognise that objects can be represented as pictures* *To create a pictogram* *To select objects by attribute and make comparisons* *To recognise that people can be described by attributes* *To explain that we can present information using a computer* *<u>Year 2 – Making Music</u>* *To say how music can make us feel* *To identify that there are patterns in music* *To describe how music can be used in different ways* *To show how music is made from a series of notes* *To create music for a purpose* *To review and refine our computer work*	*branching database* *<u>Year 3 Creating Media – Desktop Publishing</u>* *To recognise how text and images convey information* *To recognise that text and layout can be edited* *To choose appropriate page settings* *To add content to a desktop publishing publication* *To consider how different layouts can suit different purposes* *To consider the benefits of desktop publishing* *<u>Year 4 Data and information – Data logging</u>* *To explain that data gathered over time can be used to answer questions* *To use a digital device to collect data automatically* *To explain that a data logger collects 'data points' from sensors over time* *To use data collected over a long duration to find information* *To identify the data needed to answer questions* *To use collected data to answer questions* *<u>Year 4 Creating Media – Photo Editing</u>* *To explain that digital images can be changed* *To change the composition of an image* *To describe how images can be changed for different uses* *To make good choices when selecting different tools* *To recognise that not all images are real* *To evaluate how changes can improve an image*	*To explain that tools can be used to select specific data* *To explain that computer programs can be used to compare data visually* *To apply my knowledge of a database to ask and answer real-world questions* *<u>Year 5 Creating Media – Vector Drawing</u>* *To create a vector drawing by combining shapes* *To use tools to achieve a desired effect* *To recognise that vector drawings consist of layers* *To group objects to make them easier to work with* *To evaluate my vector drawing* *<u>Year 6 Creating Media – Website Creation</u>* *To review an existing website and consider its structure* *To plan the features of a web page* *To consider the ownership and use of images (copyright)* *To recognise the need to preview pages* *To outline the need for a navigation path* *To recognise the implications of linking to content owned by other people* *<u>Year 6 – Data and information – Introduction to spreadsheets</u>* *To identify questions which can be answered using data* *To explain that objects can be described using data* *To explain that formula can be used to produce calculated data* *To apply formulas to data, including duplicating* *To create a spreadsheet to plan an event* *To choose suitable ways to present data* *<u>Year 6 Creating Media – 3D Modelling</u>* *To use a computer to create and manipulate three-dimensional (3D) digital objects* *To compare working digitally with 2D and 3D graphics* *To construct a digital 3D model of a physical object* *To identify that physical objects can be broken down into a collection of 3D shapes* *To design a digital model by combining 3D objects* *To develop and improve a digital 3D model*
		Year 1 Expected **Can they create original content using digital technology? • Can they use digital technology to store and retrieve content?** **Year 2 Expected** **Can they find information on a website? • Can they use a web page as a resource? • Can they experiment with drawing tools, text, pictures and animation to create content (e.g. presentation, eBook)? • Can they create content (e.g. presentation, video, animation) in a small group and record the narration?**	**Year 3 Expected** **Can they use editing software to manipulate media (e.g. crop, add effects, manipulate audio)? • Can they manipulate sound? • Can they combine text, images and sounds and show awareness of audience?** **Year 4 Expected**	**Year 5 Expected** **Can they listen, download, produce and upload a variety of broadcast media (e.g live streaming, podcast)?** **Can they manipulate sounds using audio editing software (eg. Audacity)?** **Can they select music from a variety of sources and incorporate it into multimedia presentations?** **Can they work on simple film editing?** **Can they use a range of presentation applications?** **Can they use technology to capture a range of multimedia.?** **Can they make a home page for a website that contains links to other pages?** **Can they prepare and then present a simple film? (e.g. Storyboarding and then filming/editing).** **Year 6 Expected** **Can they explore the menu options and experiment with images (colour effects, options, snap to grid, grid settings etc.)?** **Can they add special effects to alter the appearance of a graphic?** **Can they 'save as' gif or i peg wherever possible to make the file size smaller (for emailing or downloading)?** **Can they make an information poster using their graphics skills to good effect? Can they present a film for a specific audience and then adapt same film for a different audience?** **Can they create a sophisticated multimedia presentation?**

Progression and assessment in Computing

Vocabulary	**iPad, home button, screen, press, key**	**Year 1 - Technology, man-made, digital,** *screen,* **mouse, keyboard,** program, **click/drag,** cursor**, e-safety** **Year 2 – information technology, computer, device, barcode, scanner, communication, entertainment, appliances,** signal**,** *e-safety*	**Year 3 – Digital device, input,** process, **output, connection, networks, network switch, server, WAP,** *e-safety* **Year 4 – Networks, internet, World Wide Web, router, security, website, webpage, browser, domain, reliable**	**Year 5 – system,** *input***, process, output, protocol, IP address, packet, reuse, explore, collaboration** **Year 6-** *internet, World Wide Web***, search engine,** *browser***, key word, Google, Tim Berners-Lee, ranking, crawlers, algorithm**