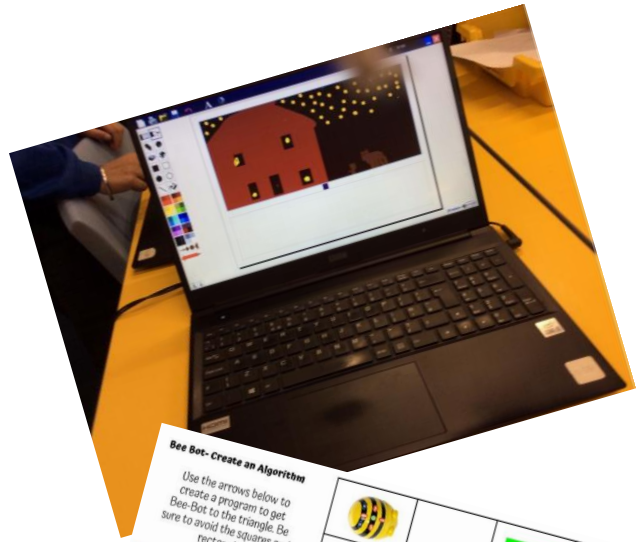
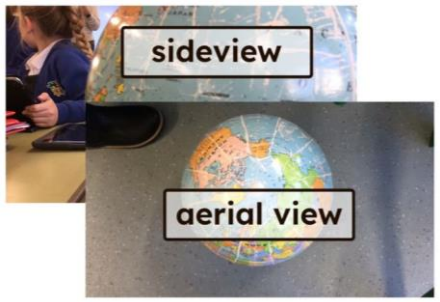
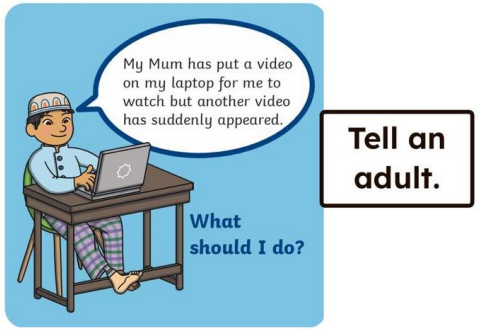
New Invention

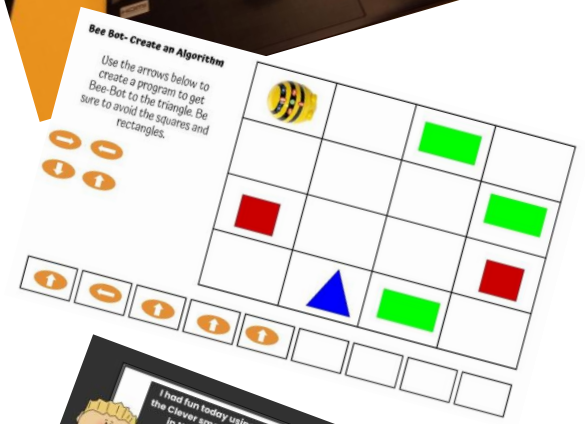
INFANT SCHOOL

We can...we will...together









Computing Syllabus

To empower our children to be the change-makers of the future.

#WecanWewillTogether

NII is a safe, secure and nurturing school where children develop positive relationships.

Our children are confident, articulate and resilient both in education and attitude to life.

They are compassionate, empathetic and supportive of others.

Our staff are motivated, tenacious and committed working with integrity to ensure the best outcomes for our children and families.

They strive for excellence in all that they do.

We are the focal point of our community where families feel supported, respected and are partners in their children's journey.

Everyone in our school community contributes and is both heard and valued.

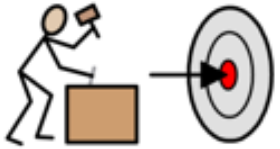
Our high aspirations, forward thinking, innovative approach inspires our children to be change-makers of the future.

inclusivity

Diversity
Equity
Respect
Acceptance

integrity

Moral
Principles
Honesty
Fairness



tenacity

Resilience
Hard working
Perseverance
Never give up

collaboration

Partnerships
Working together
Supportive
'Families'

ambition

Excellence
High expectations
Creative
Innovative
Risk taking

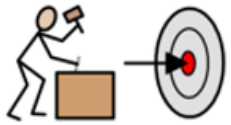
How our Mission, Vision and Values are reflected in Computing

inclusivity

We create an inclusive computing curriculum by ensuring every child feels represented, supported, and empowered. This begins with using diverse characters and culturally relevant examples in digital stories and activities, helping children see themselves in the content. Tasks are adapted to suit different learning styles and abilities, using unplugged activities, tactile tools, and visual aids to make computing accessible to all. Encouraging collaboration through pair programming or group projects fosters peer support and helps to build confidence and empathy. It's also important to challenge stereotypes by highlighting diverse role models in technology—showing that computing is for everyone.

integrity

It is important to lay foundations for responsible digital citizenship by ensuring integrity in out computing curriculum. Children begin to explore technology through simple coding, digital storytelling, and online activities and teachers ensure to emphasize honesty, fairness, and respect when using digital tools. Children can be taught not to copy others' work without permission, to give credit when using images or ideas, and to follow classroom rules for using devices.
Story-based learning and role-play can help children understand the importance of telling the truth online and being kind in digital interactions. Encouraging collaborative projects also nurtures a sense of shared responsibility and respect for others' contributions.



tenacity

Ensuring tenacity in our computing curriculum helps to build resilience and a growth mindset from the start. When children explore basic coding, digital storytelling, or problem-solving games, they inevitably encounter challenges—bugs in their code, tricky puzzles, or unfamiliar tools. These moments become opportunities to teach perseverance. Teachers will model and encourage a "try again" attitude, celebrating effort over immediate success. Using Bee-Bots, Purple Mash or ScratchJr, children learn that mistakes are part of the process and that determination leads to discovery. By praising persistence and guiding children to reflect on their learning—"What did you try? What could you do differently?"—tenacity is celebrated and embedded. Over time, children begin to approach computing tasks with confidence and curiosity, unafraid of failure.

collaboration

Children thrive when working together on age-appropriate tasks such as coding simple sequences with programmable toys like Bee-Bots or creating digital stories using Book creator. These activities encourage children to share ideas, take turns, and solve problems as a team. Lessons are designed to include pair or group work, where each child has a role—such as navigator, coder, or checker to help foster different roles. Working collaboratively also helps build communication skills, as children explain their thinking and listen to others. By embedding collaboration into computing lessons, we can lay the foundation for teamwork and resilience, essential for future learning.

ambition

Children are encouraged to explore technology as a tool for problem-solving and expression. Through age-appropriate activities—like coding with visual blocks, using simple robotics, or creating digital art—children begin to see themselves as digital creators.
Teachers ensure to set high yet achievable expectations, celebrating effort and innovation, and providing opportunities for childrento take ownership of their learning. By integrating computing across subjects, children understand its relevance and potential. Encouraging questions like "What else can I make this do?" or "How can I improve this?" helps develop a growth mindset. Promoting ambition within our computing curriculum empowers children to believe they can shape the digital world—not just consume it.

Computing Curriculum Intent

Technology is has become an increasingly important part of our everyday lives and an equally important part of the primary curriculum. The computing curriculum provides children with the essential skills and experiences to use technology effectively to enhance both academic and leisure time. Our aim is to enthuse and inspire pupils to further their computing understanding and develop their knowledge of technology both at school and in the wider world.

Computing is a critical part of a child's curriculum. It develops their confidence and effective use of technology, inspires, and enthuses them to use computing both for enjoyment and with purpose, safely, in the world around them. A high-quality computing curriculum will allow children to develop a wide range of skills that are essential as they build and develop their computing knowledge and understanding throughout their school life. They develop basic skills of using a range of technology in school and recognise the uses technology has in the home as well. Alongside building these basics skills, children will be continually building their subject knowledge on various features of a range of technology in their environment. As a result, children will be ready to engage with the increasingly digital world around them, both at school and in the wider world. Computing skills will assist children on their life-long learning journey, helping them to develop team-working skills, creativity, problem solving and resilience.

Computing Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Basic Skills – Clevertouch board – Digital Art - 2paint a picture, drawing, MiniMash		Basic Skills- Clevertouch Board Mini Mash Digital Art – Mini Mash –new page and undo	Basic Skills – Digital Art and Audio – Photography/recording videos and voices	Basic Skills – iPad – drawing and typing	Programming – coding – Intro to code-a-pillar
Reception	Basic skills – iPad, Mini-Mash	Audio – music- play, record, copy patterns, re-creating	Programming – Coding – Code-a-pillar	Digital art -2paint	Basic Skills – Laptops, Seesaw	Programming – Coding – intro to Bee-bots
Year 1	Basic Skills – iPad, laptop, seesaw, web browsers. Use of Technology	Data handling- grouping and collecting	Programming-coding Offscreen-Bee-bots	Digital Publishing- Create a poster	Digital Art - 2Paint	Programming-On screen- Scratch Jnr
Year 2	Basic Skills – iPad, laptop, seesaw, web browsers. Use of Technology	Programming - Coding Offscreen-Blu-bots,	Programming – On screen- Coding Scratch Jnr	Digital Art-Animation - 2animate	Digital Art – photography Data handling- pictograms	Audio – Music- Chrome Music Lab

Computing

Implementation– (Areas of the Subject)

- Programming
- Using Technology
- Data handling
- Creating- digital art, digital audio, digital writing

Computing

Implementation

Programming

Nursery

Following and giving simple instructions, robot role-play, treasure maps, story sequencing, code-a-pillar journey and exploration, directional dice, button press prediction, tap-and-go apps, interactive stories, sound sequence apps, cause-and-effect games.

Reception

Robot instructions to each other and an adult, action algorithms (creating a movement sequence), story sequencing, treasure hunts, exploring code-a-pillars and bee-bots, fix the code, obstacle navigation, digital sequencing games, tap and go apps.

Year One

Human robot instructions, algorithm sorting, debugging, treasure map trails, bee-bot challenges, robot story maps, command matching (match cards to robot movements), Scratch Jnr, digital sequencing, blu-bot app, pattern builders

Year Two

Robot commands, fix the algorithm, instruction sorting, loop moves, treasure grids, blu-bot missions, debugging, command challenges, Scratch Jnr app, coding stories.

Computing

Implementation

Using Technology

Nursery

Using different cause-and-effect toys, 2Paint- explore taking turns creating pictures on the Clevertouch board- creating different lines and colouring in images, Mini-Mash- 2DIY jigsaws, drag and drop games around People Who Help Us, simple city

Reception

Using seesaw and Mini-Mash, explore chatterpix, draw and tell, taking photographs for Seesaw, scanning QR codes, Mini-Mash simple city activities, 2Paint projects, 2publish simple typing projects,

Year One

Teaching basic skills through the use of Seesaw and children documenting their own work, using various apps to support learning in other areas (draw and tell, phonics play,) photography, Purple Mash- 2Graph, 2Type, Maths and science activities, 2Publish, 2Paint, Topmarks Maths games, phonics play.

Year Two

Teaching basic skills through the use of Seesaw and children documenting their own work, using various apps to support learning in other areas (Purple Mash, safari, Seesaw, Poplet, camer app, photography editing), Purple Mash- 2Graph, 2Type, Maths and science activities, 2Publish, 2Pa+G70:G78int, Topmarks Maths games, phonics play, chrome music lab

Computing

Implementation

Creating- digital art

Nursery

2Paint a Picture, Mini-Mash, free mark making, focused mark making linked to handwriting patterns, 2Paint a Picture, Mini Mash, drawing, colouring, people who help us themed activities,

Reception

2 paint a picture- wet paint tool to experiment with, slice- create a pattern on the page and then experiment with creating small and large slice make patterns with think and thin lines, create patterns with small or large spots and different colours, Spinner- create different patterns- what happens when it spins? Swirly- create patterns with circles. Draw a picture made out of circles (face/ garden etc). Draw a traditional tale character/ draw a healthy basket of food

Year One

2Paint- explore range of tools to create own work. Explore work of Kandinsky and use the range of tools that they have learnt about to create their own work in Kandinsky's style.

Year Two

Photo hunt- take photographs of objects of different colours/ textures etc. Take photographs of natural objects and compare portrait and landscape. Experiment with natural and artificial lighting. Edit photographs- crop brighten and apply filters to their natural object photographs. Take photographs of friends- edit.

Computing

Implementation

Creating- digital writing

Nursery

2Paint a Picture, Mini-Mash, free mark making, focused mark making linked to handwriting patterns, 2Publih+, Mini Mash, writing- farm themed activities

Reception

Ipads- 2Publish+, Mini Mash, Draw and Tell, ChatterPix, Seesaw, Laptops- 2Publish+, 2Type, Mini Mash, Word

Year One

Laptops- 2Publish+ Poster layout (Castle poster)

Year Two

Computing

Implementation

Creating- Digital audio

Nursery

listen to songs, watch and listen to videos, listen to audiobooks, dance to music

Reception

2Beat-Can you make a tune which sounds like people running fast? • Can you make a happy, playful tune? • Can you make a sad slow tune? • Play your tunes for your friends, what do they think?

Year One

Laptops- Chrome Music Lab-Echo patterns- play a 4-note pattern and ask them to copy

Call and response- teacher to crate pattern and children create an answer

Compose to an image- look at sections of The Tiger Child and compose a piece to match the illustration

Year Two

Computing

Implementation

Data handling

Year One

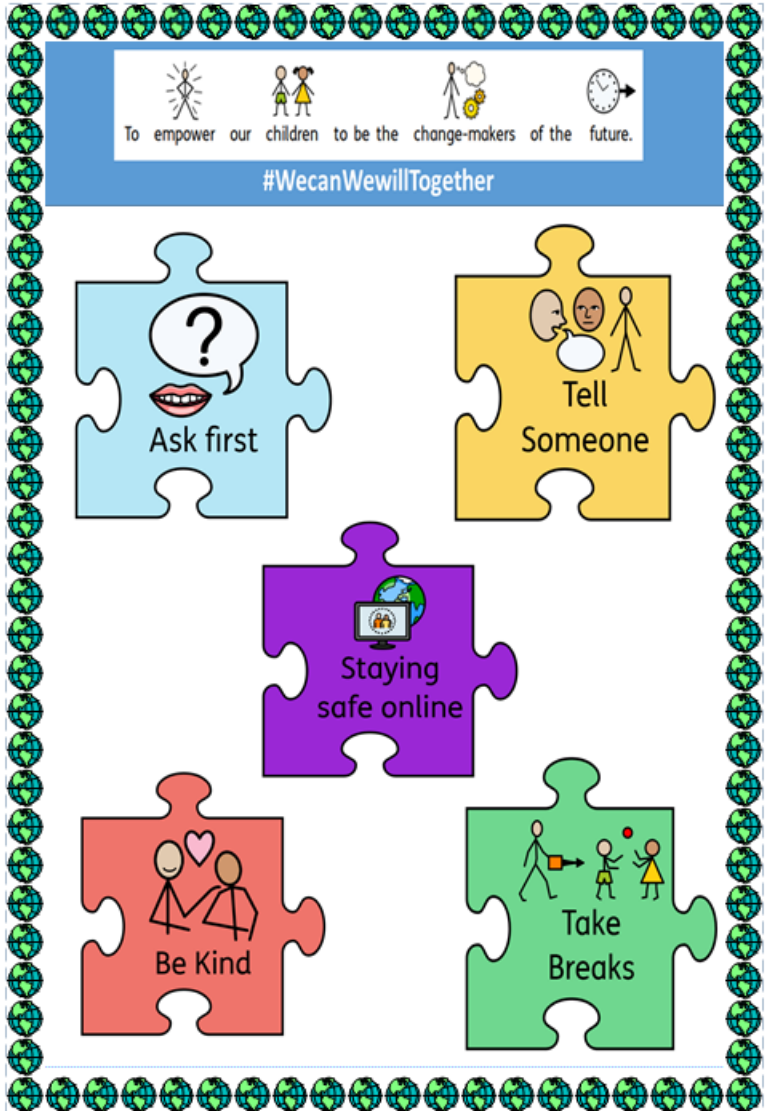
2Graph on Purple Mash- labelling, grouping and counting, deacribing objects, making and comparing groups and answering questions

Year Two

2Graph on Purple Mash- grouping and collecting data, creating tally charts, inputting data to create pictograms and block diagrams, analysing data

Lesson/Activity Sequencing

Staying Safe Online Poster



Computing Overview – **ONLINE SAFETY –Using Purple Mash 2BeSafe Units**

Nursery	Reception	Year One	Year Two
Key Focus Points for the Year **What is the internet?** **What is a trusted adult?** **Don't click without asking.** **Stay on the programme the grown-up has put on.** **Be kind online just like we are at nursery.** **Don't talk to strangers online.** **Knowing some games and videos are for older children and adults.** **Tell someone if something goes wrong or makes them feel sad or scared.** **Keep it fun and safe.** **Balance screen time.** **Songs and stories to use:** **Childnet-** Buddy the Dog **Childnet-** Smartie the Penguin **CEOP-** Thinkuknow Jessie and Friends	**Autumn Term Sessions** **Self-Image and Identity-** to know they can say no, stop or 'I'll tell' if someone makes them feel uncomfortable. **Online Relationships-** Know some ways the internet can be used to communicate. Give examples of how to use technology to communicate with people they know. **Online Reputation-** Recognise ways that they can put information on the internet. **Spring Term Sessions** **Online Bullying-** Describe ways people may be unkind online. Know ways that people might feel if someone is unkind online. **Managing Online Information-** Talk about ways to use the internet to find information. Identify devices that can be used to access the internet. **Health, Well-being and Lifestyle-** Identify rules that keep us safe online. **Summer Term Sessions** **Privacy and Security-** Can identify some simple examples of personal information (name, address, school). Describe who would be trustworthy to share personal information with. **Copyright and Ownership-** Know that work that they create belongs to them. Can name their work so that others know that it belongs to them.	**Autumn Term Sessions** **Self-Image and Identity-** Can recognise that there may be people online who make others feel sad. If something happens that makes them feel uncomfortable give examples of who they can speak to. **Online relationships-** Know when they should ask permission to do something online and use the internet with adult support to communicate with known people. Explain why it is important to be kind and considerate online. **Online reputation-** Recognise that information stays online and can be copied. Describe what information should not be put online. **Spring Term Sessions** **Online Bullying-** Describe how to behave online in ways that would not upset others. **Managing Online Information-** Give some simple examples of how to find information online (search engines). Understand that there are a range of things online that we may like/dislike. Knows to get help from a trusted adult if something they see/read upsets them. **Health, Well-being and Lifestyle-** Explain rules to keep themselves safe at and beyond home. **Summer Term Sessions** **Privacy and Security-** Explain that passwords are used to protect information. Can identify more detailed examples of personal information (family names, address, school). Knows to ask before sharing any personal information online. **Copyright and Ownership-** Explain why work they create belongs to them. Saves work under a suitable title and name. Knows that work created by others does not belong to them.	**Autumn Term Sessions** **Self-Image and Identity-** Explain how people may look and act different on and off line. Give examples of issues online that may make people feel sad/ uncomfortable etc. **Online relationships-** Give examples of how someone might communicate with others online that they don't know and why this could be a risk. Explain who they should ask before sharing things about themselves online. Describe different ways to give/deny permission and knows they have the right to do this. Identify who can help them if something happens online and explain why they should ask a trusted adult before clicking accept. **Online reputation-** Can explain how information out online can stay there for a long time. Describe how anyone's information online can be seen by others. Know who to talk to if something online is incorrect or without consent. **Spring Term Sessions** **Online Bullying-** Explain what bullying is and how it makes people feel. Explain that it is not the person's fault if they experience bullying and know that they can talk to someone to get help. **Managing Online-** Use simple keywords in search engines and navigate a simple webpage. Understand what voice-active searching is and that it is not a real person. Explain the difference between things that are made up, imaginary or real. Explain why some information online may not be real. **Health, Well-being and Lifestyle-**Explain simple guidance for using technology in different environments (home, school, public places) **Summer Term Sessions** **Privacy and Security-** Explain how passwords are used to protect devices/ accounts. Explain and give examples of keeping things private and explain some ways to keep things private. Explain how people may have devices at home that are connected to the internet (lights, fridges, TVs, toys). **Copyright and Ownership-**Recognise that content on the internet may belong to other people. Describe why other people's work belongs to them.

Computing Overview Nursery

Me and My celebrations	People Who Help Us		Down on the Farm	
Autumn	Spring		Summer One	Summer Two
Basic Skills- Clevertouch - 2paint a picture -Introduction to the board – what it is and what it can do watch videos, copy dances, play music, talk about the 'magic paintbrush/pen' and how we can use it to click, write and draw on the screen -Talk about what a page is on the screen linking to a page of a book, talk about colours and model that we touch to click and choose a colour we want to use -Click to select a colour and explore making any marks freely showing how the paintbrush will draw on the board and make marks for where we move it to. - Support and introduce waiting for our turn, using the sand timer to use the board. Children then explore as a focus:- Select a colour and draw horizontal and vertical lines. -Model choosing colours to colour a given image and how to move the brush to colour in the image. -Colouring different given pictures choosing colours and trying to fill the white gaps with colours. **Clevertouch - Mini Mash** -Introduction to Mini Mash – a program where we can choose different things to do. -Show children a pinned topic (Bespoke Christmas) and talk about what this means and how to touch to click the pinned topic to choose and complete an activity. -Recap the skill of clicking to select and how to draw. Model selecting a Christmas activity pairs/painting activity from the pinned topic and model how to click or draw and colour items using skills taught. -Encourage children to talk about their work – What did they draw? What did they do? What do they like? What don't they like? Etc.	**Clevertouch - Mini Mash – 2paint a picture** -Recap skills from the previous term and introduce the new page icon to start drawing a new picture. -Children select a new page and make marks changing colours -Talk about making mistakes in our work and that there is a special button that we can click to undo a mistake. Introduce the undo button. Children to explore pinned activities (bespoke shopping) -Children will draw items in a shopping basket focusing on adding details to make our pictures more accurate e.g. dots on a strawberry. Children will be encouraged to use the undo icon to correct mistakes. **Clevertouch - Dragging and dropping and selecting pinned activities** -Recap the board, mini-mash, pinned activities and the magic pen.. Talk to children about how the magic pen doesn't just draw and can help us to do other things on the board. -Show the children putting the pen onto an item and moving it across the board using a pen. Talk about how we a dragging (pulling the picture along with the pen). Show how when we let go - we drop the picture and it stops moving. - Children will then have lots of opportunities to practise their dragging and dropping skills – each activity will be modelled with recaps of vocab and skills:- 2DIY simple jigsaws, drag and drop Mini Mash activities around people who help us, Using the different areas of 2simple city each week.	**Photography - iPads** -Introduction to an iPad and what it is and what we can use them for. Who has seen something like this before, where, what is it used for? – Discuss parts – screen, case, buttons, apps. -Show children photographs and introduce this word to them. Talk about how we take photos using a camera. What do they have their photos taken on? – phones, tablets, digital cameras etc. -Show children how to press the menu button to switch the screen on and what the camera app looks like on an iPad. -Show the children how to click the icon (picture) to open the camera app. -Model how to hold the iPad so that the camera is facing the way they will take a picture with the case hanging down. Show the white button they need to press on the screen to take a photo. -Children will use camera on iPad to take photographs of their friends (who is important to us) -Recap prior learning, and the challenge of trying to hold the iPad really still making sure their friends whole face is in the picture. -Show a photo taken of a whole face, a photo taken with parts missing and discuss which is better, why, what's missing? Children to practise taking photos making sure the whole face is on the screen. -Children will then be given opportunities over several activities to take photos of different things. E.g. plants/flowers, children's work, a whole person. – Each time model and recap how to hold the camera, make sure everything is on the screen and take the photo. -Talk to children about how the camera app can also record a video – talk about what a video is and the difference between a photo and a video. E.g. When we watch videos things are moving but photographs are still and do not move. -Model to children how to select the video option and how to press the red button on the screen to start and then press it again to stop. -Children to record their friends using the camera talking about the PWHU they have dressed up as. Remembering the skill of holding the iPad still and making sure the whole face is on the screen. -Big wow to end topic children all to come in dressed as a PWHU and take their own photo of their friends.	**Basic Skills – iPads – Mini-Mash – 2paint a picture – work through the same steps but on iPads** -Recap previous work on Mini-Mash using the Clevertouch and previous work using the iPads. -Show children the Mini-Mash app once it has been logged into by an adult with 2paint a picture loaded onto the screen. Remind children about how the magic pen helped us to make marks on the screen. Tell children that on an iPad our finger can make marks and click to choose things on the screen. Model to children how to do this to select colours and colour a given picture using a finger (encourage Peter Pointer – index finger) children to then explore this on an iPad -Recap the new page icon and model using your finger to draw recognisable handwriting patterns/pictures. Remind children about the undo icon and how they can use this if they make a mistake Children will complete a range of farm activities for drawing and colouring. -Show children the rubber icon and how this can also be used to rub out marks we make like a real rubber. Show children how to rub over the marks they have made if they only want to get rid of a smaller mistake instead of undoing everything you did in the last step. **iPad - Dragging and dropping and selecting pinned activities** Recap prior learning of drag and drop activities with the children. Remind them that on iPads our finger does the same job as the magic pen. -model using a finger to complete different drag and drop as used previously on the whiteboard Children will then have lots of opportunities to practise their dragging and dropping skills – each activity will be modelled with recaps of vocab and skills:- 2DIY simple jigsaws, drag and drop Mini Mash activities around farms.	**Coding exploration – Remote Control Toys** -Talk to the children about different toys that they play with in Nursery. Some toys have special remote controls that we can use to make them move – link to remote for the TV, gaming controllers, pen on the board etc. -Talk about how these remotes give special messages called an instruction. Talk about when we might give these e.g. tidy up, put on your coat and link to push button cause and effect toys. Play being a robot game to practise giving instructions – e.g. Simon Says in a robot voice. -Talk about how we can tell some toys to do something by pressing buttons/moving a stick etc. to give the special instruction message that tells the toy what to do. Then the toy will do it. E.g. like telling the TV which channel to go onto/moving a character on a game/turning up the volume on the TV. -Show children the remote control toy bugs and model how to use these with the controller. While using these model the language of forwards, backwards and turn. Children explore moving the bugs with adults modelling key directional vocabulary aloud alongside. **Coding exploration – Code-a-pillar** -Show children arrows on the floor for forwards and backwards. Practise moving themselves in these directions, practise telling a friend to move in these directions and laying a forwards and backwards arrow onto the floor for their friend to follow. -Introduce a special toy called Code-a-pillar. Explain it is a toy caterpillar that we can give instructions to, to make it move. -Show the code-a-pillar blocks with arrows on for forward and backward – talk to the children about how these blocks are special and give the Code-a-pillar the message to follow – what they think Code-a-pillar will do if we clip this block onto it? Show children what happens when you attach the block to the Code-a-pillar. -Children explore attaching blocks for forwards and backwards to make Code-a-pillar.

Computing Overview Reception

Autumn One	Autumn Two	Spring		Summer One	Summer Two
Basic Skills- Ipads Introduction to the Ipads and how to use the home button to return to the home screen. Explain that the home screen is where we can see all of the apps that are on the Ipad that we can use. Children to practise opening an app and then using the home button to return to the home screen. Discuss the range of apps that are on the Ipads and model how to find and open a specific app- Seesaw, chatterpix, Draw and Tell, the camera, by looking for the symbol. Introduction to photography- show children some good and poor quality photographs that have been taken with am Ipad- why are some better than others?- blurry, out of focus, too far away etc. Show children how to open the camera app on the Ipad and that clicking the button will take a photograph. Then model how to take a 'good' photograph- keep the Ipad still and have the object in the middle of the screen. Children will then take photographs of different objects. **Using a QR code-** show children a QR code and explain that these can be used to travel to a specific website. Model opening the cameral app, hovering the Ipad over the QR code and show how it will then open the webpage. Give children some time to practise scanning a QR code themselves. **Basic Skills- Mini-Mash** Navigate mini-mash.	**Audio- 2Beat on Mini-Mash** **Sessions to be delivered using 2Beat and 2Explore.** Use 2Beat/2Explore to explore making different sounds with different instruments. Try the different instruments, what do they sound like? Listen to the different instruments and ask the children to make a choice of what they are going to use. Children will then create their tune by clicking on the boxes next to the instruments they have chosen. Then children will play back what they have created so far. Experiment with trying to change the tune by changing the number of boxes they have selected. Then experiment with changing the instruments. Using their tune, experiment with playing the tune fast and playing it slow. Which do they prefer? Then challenge the children to make the tune longer by adding more beats. Explore challenges with their tune- **Can you make a tune which sounds like people running fast? • Can you make a happy, playful tune? • Can you make a sad slow tune? • Play your tunes for your friends, what do they think?**	**Coding – Code-a-pillar** To introduce coding language and programming including forwards, backwards, left and right. To follow simple instructions or give simple instructions from/to a friend. Recap the language 'forwards' and 'backwards' with the children practically moving themselves and giving instructions to a friend. Link this to using the Code-a-pillar by building together the blocks. Exploration lesson with forwards and turn then add more blocks. Move onto following instruction sequence cards by building blocks together and observing how the Code-a-pillar follows the instruction and where it reaches. Talk to the children about programming a robot to reach a specific place. Children to work practically at first following instructions from an adult to reach a specific place. Children can then direct their friend to reach a specific place. Then move this into coding the Code-a-pillar to reach a specific place. Model looking carefully at where the Code-a-pillar needs to get to and what blocks we would need to put together to reach that place.	**Digital Art- 2Paint a Picture** **Using 2Paint on Ipads.** Give the children opportunities to explore the other Painting tools in 2Paint a Picture. Simple, Slice, Spinner, Wet Paint, Swirly. Use the above painting tools to think about how which tool you would use to create different pictures and patterns. **Explore the different programmes.** **Wet Paint** - let the children explore changing the level of water to add to the paint. What happens when you add more/less water. Can they mix different colours of paint together, try letting the paint drip and run together to make different patterns and colours. **What kind of pictures could you paint with the wet paint tool? Can they try the same using paint and paper?** **Slice** - create your pattern on the page, move the slicing tool to create a bigger section. Add more to the pattern, what happens to the pattern on the page? Make the slice smaller and add a pattern, what happens to the pattern? Make a pattern using thick and thin lines, change the size of the pen. Then explore making a pattern using small spots, large spots, use lots of different colours. **Spinner-** use the spinning tool to create patterns using and mixing different colours. Can they explain what happens when you make the plate spin fast and when it spins slowly? What happens when you change the thickness of the paint brush and make it thicker and thinner? Challenge the children to make a pattern using warm colours or cold colours. **Swirly** - create pattern with circles. Explore changing the size of the circles. Challenge them to make a pattern using only one colour but find different shades of the colour to create the pattern with. **Can they draw a picture made out of circles? Can you draw a face? -** a flower garden etc. What else can they create? - can they see anything around them with swirly patterns that they could recreate? Look for patterns around them and outside which have circles in them. **Paint Projects-** Set children different paint projects on Mini-mash and explore using the different brush tools to paint them.	**Basic Skills- Laptop Skills** Children will work through a series of lessons to become more confident using a range of technology with adult support. Model switching on the laptop and logging on the laptop. - Use mouse to find and select a programme- 2paint or 2publish. - - Children will explore the keyboard- type different letters. Can they find the first letter of their name? - Explore using the space bar- this puts a finger space in our work - Model finding the full stop key - When children have had time to explore the keyboard set them challenges to complete on 2publish - Type their name - Type a simple sentence- It is a … **Seesaw skills** To take a photograph of their own work and save to their name. During work that the children will be uploading to Seesaw model taking a good phototgraph, pressing the green tick and then finding their name and saving their work.	**Coding- Beebots** Introduce Bee-bots and talk about the buttons and how they relate to Code-a-pillar. Show the children the buttons on the bee-bot and explain that these program the robot to move. What do they think the different buttons will do? Model pressing the buttons one at a time and pressing go and observing what the bee-bot does. Use the forwards, backwards, left and right buttons to get the Bee-bot to move in different directions. Explore programming the Bee-bot to travel on the Bee-bot mats. Work with an adult to explore moving the bee-bot around the bee-bot mats. **Seesaw skills** To take a photograph of their own work and save to their name. During work that the children will be uploading to Seesaw model taking a good phototgraph, pressing the green tick and then finding their name and saving their work.

Computing Overview Year One

		Castles		Over Land and Sea	
Autumn One	Autumn Two	Spring		Summer One	Summer Two
Basic Skills- Ipads and Laptops Children will work through a series of lessons to become more confident using a range of technology with more independence. **To independently use a username and password to log on and log off and navigate these:** -laptops -Topmarks -Purple Mash --Busy Things **Use basic Ipad skills-** recap skills from Reception around using the home button, finding apps, taking a photograph on Seesaw and saving their own work. **Know uses of technology in school- Teach Computing Unit- Technology around us– see Teach Computing for detailed lesson plans and PPT/ worksheet resources.** - Technology around us and uses of technology. - Touchpad and keyboard skills - Using a computer responsibly	**Data Handling** **Teach Computing Unit- – see Teach Computing for detailed lesson plans and PPT/ worksheet resources.** 1. **Label and match.** Learn that objects have labels and can be out into different groups. Children will name different objects and begin to experiment with placing them into different groups. They will also label a group of objects, and begin to understand that an object can fit into more than one group. 2. **Group and count.** Children will begin to think about grouping objects based on what the objects are, - count a small number of objects before they group them, and will then begin to show that they can count groups of objects with the same label. Children will also begin to learn that computers are not intelligent, and require input from humans to perform tasks. 3. **Describe an object.** Children will begin to understand that objects can be described in many different ways. They will identify the properties of objects and begin to understand that properties can be used to group objects; e.g group by colour or size. Finally, learners will demonstrate their ability to find objects with similar properties and begin to understand the reason that we need to give labels to images on a computer. 4. **Making different groups.** Children will classify objects based on their properties. They will group objects that have similar properties, and will be able to explain how they have grouped these. They will begin to group a number of the same objects in different ways, and will demonstrate their ability to count these different groups. 5. **Comparing groups.** Children will choose how they want to group different objects by properties. They will begin to compare and describe groups of objects, then they will record the number of objects in each group. 6. **Answering questions.** Children will decide how to group objects to answer questions. They will compare their groups by thinking about how they are similar or different, and they will record what they find. They will then share what they have found with their peers.	**Coding – Bee-bots** **Moving a robot** **Teach Computing Unit- Moving a robot – see Teach Computing for detailed lesson plans and PPT/ worksheet resources.** **1.** Introduce the children to the floor robots (bee-bots) and ask them what they think they might do and how they think the buttons work. Teach the children the direction buttons as well as the 'clear' and 'run program' buttons. Children will be able to link a button to an outcome and run a simple command. **2.** Discuss with the children the importance of giving clear instructions that can be followed and explore giving and listening to instructions and highlighting that they need to be clear and precise. **3.** Looking at moving bee-bots forwards and backwards when starting from the same place each time. Highlight how we need to create clear instructions for how far we want the bee-bot to move forwards or backwards. Children will need to think about how many steps the bee-bot will need to move to reach a place. **4.** Children will explore all four directions. Recap the use of forwards and backwards and then introduce left and right turns. Introduce left and right practically and give the children chance to practise this with an adult and friends before transferring this to the bee-bot. Children will then have time to experiment with left and right and then predicting where a bee-bot will land when following an algorithm. **5.** Children will explore planning their own algorithms using all four directions to travel from one square to another on a map. Children will design their algorithm and then test it. Talk to the children about debugging if necessary- can they spot the mistake in their algorithm and correct it. **6.** Introduce children to the idea that a program could be created in more than one way. Children will need to choose starting and ending spaces and create different algorithms to reach the same space. Children will need to create their algorithm first and then test them on the bee-bots. Talk to the children about debugging if necessary- can they spot the mistake in their algorithm and correct it.	**Digital Publishing** **Using 2Publish+ poster** Introduce children to the programme 2Publish and finding and opening the poster layout. Then work through a range of word processing skills. - Exploring the keyboard and adding and removing text to/from their poster. - Add and remove text using the spacebar and backspace keys. - Exploring adding numbers and symbols using the correct keys. - Explore how to add capital letters into their work. - Explore using the tool bar to add changes to their text- font size, bold, italic, underline. - Explore how to select a word by double clicking and how to select all of the text by clicking and dragging. - Model how to use the undo button for mistakes. Children could develop these skills by creating a party invite, re-tell a traditional tale and then create a non-chronological report about castles. **Book creator skills (to record learning about castles to be covered in Spring 2 and Summer 1)** Children will use their digital publishing skills to create a piece of work on book creator about what they have learnt about castles. Skills to be covered: - Adding a page - Designing a page (title page, fact pages) - Add text and images to a page - Record and add simple audio (caption or simple fact)	**Computing Art – 2Paint and Photography** 2Paint- **Teach Computing Unit- Digital Painting – see Teach Computing for detailed lesson plans and PPT/ worksheet resources.** Understand that digital art includes drawings, photographs and clip art - Use mouse to find and select a programme- 2paint or 2publish Type their name Type a simple sentence- It is a … - Use the line and shapes tool and explore using fill and undo commands. Use these tools to recreate a piece of work in the style of an artist. - Explore using the range of tools to recreate a piece of work in the style of Kandinsky and then create their own work in his style. - Explore using different brush style/ sizes/ colours to create dot paintings. - Create their own piece of work in a style of their choosing using the range of tools that they have learnt about. **Photography** Take a digital photograph using a camera or Ipad, framing the photograph correctly.	**Coding – Intro to Onscreen Programming** **Teach Computing Unit-Programming animations– see Teach Computing for detailed lesson plans and PPT/ worksheet resources.** **1.** Choosing commands for a purpose. Children will link to creating algorithms for Bee-bots. Children will create commands to move sprites on the screen. **2.** Children will discover that blocks can be joined together. Children will use a start block to run a program and join blocks together. Children will add backgrounds and delete sprites. **3.** Children will learn about changing the number underneath blocks. Children will change the numbers and see what effect this has. **4.** Adding sprites. Children will learn about adding and deleting sprites. Children will learn that each sprite has its own programming area and will need to be programmed individually. **5.** Children will design a 'Seaside Race' project. Children will need to choose appropriate background and sprites and use their knowledge of the coding blocks they would need to code each sprite. **6.** Children will use their design from the last session to create their Seaside Race project on Scratch Jnr. Children will need to test their program and evaluate it.

Computing Overview Year Two

Explorers

Autumn One

Basic Skills- Ipads

Children will work through a series of lessons to become more confident using a range of technology with more independence.
To independently use a username and password to log on and log off and navigate these:
-laptops
-Purple Mash
-Busy Things
-Topmarks
Use web browser skills (open search engine, key word search) and search for a file, send an email.

Use basic Ipad skills- recap skills from Reception and Year One around using the home button, finding apps, taking a photograph on Seesaw and saving their own work. Move onto a wider range of skills on Seesaw- adding pages, text boxes, drawing with pen.

Know uses of technology in school- Teach Computing Unit- Information Technology around us– see Teach Computing for detailed lesson plans and PPT/ worksheet resources.

- What is IT in school and around the world?
- The benefits of using IT
- Explore using IT safely
- Explore using IT in different ways

Autumn Two

Programming- Off-screen

Teach Computing Unit- Robot algorithms– see Teach Computing for detailed lesson plans and PPT/ worksheet resources.

1. Giving instructions. Children learn about giving and listening to instructions and emphasise the importance of them being clear and precise. Discuss how we can link instructions together to create algorithms and that computers need clear and concise instructions to follow.
2. Children will think about the order of algorithms and how the order of the algorithm affects the outcome. Children will then explore how they can create algorithms using the same instructions that will reach a different destination if put in a different order.
3. Children will need to make predictions about what an algorithm will do and then test to see what the outcome is.
4. Children will need to create their own algorithms to reach a destination. They will need to think carefully about the order of the algorithm they have created.
5. Children will look at debugging longer algorithms. Test the algorithm and see if they can identify where the bug in the algorithm is. Children will then need to fix the algorithm.

Pioneers

Spring

Programming- On-screen

Teach Computing Unit- Programming Quizzes– see Teach Computing for detailed lesson plans and PPT/ worksheet resources.

Recap basic skills from Scratch Jnr in Year One.

- Recapping starting a sequence and how to run a program on Scratch.

- Children will learn that a sequence of commands has an 'outcome'. They will predict the outcomes of real-life scenarios and a range of small programs in ScratchJr. Move onto exploring matching programs that produce the same outcome when run, and use a set of blocks to create programs that produce different outcomes when run.
- **Using a design-** children will be taught how to use the Start on tap and Go to page (Change background) blocks. They will use a predefined design to create an animation based on the seasons.
- **Changing a design-** show the children an existing quiz design and think about how this can be created using the ScratchJr app. Children will choose backgrounds and characters for their own quiz projects and they will then change a given design sheet and create their own quiz questions in ScratchJr- link to what they know about Amelia Earhart.
- **Design and create a program-** children will create their own quiz question designs including their own choices of question, artwork, and algorithms. They will increase the number of blocks used within their sequences to create more complex programs.
- **Evaluating-** children will compare their projects to their designs. They will think about how they could improve their designs by adding additional features. They will modify their designs and implement the changes on their devices. Children can then find and correct errors in programs (debug) and discuss whether they debugged errors in their own projects.

Animation – using 2Animate on Purple Mash

Using Purple Mash- draw/create a simple flip book style animation.

- **Introduction to Animation**

Show short animations and discuss what makes them move (frames, sequencing)
Introduce 2Animate and demonstrate how one frame leads to the next. Explore 2Animate freely with teacher guidance and then create a 2-frame animation of a simple shape moving.
- **Plan a short animated sequence with a clear beginning, middle, and end**

Discuss ideas for animations (e.g. a bouncing ball, growing flower, flying butterfly)
Sketch their idea on paper, breaking it into 3–5 stages and introduce storyboard concepts simply: What happens first, next, and last
-Start building the animation using 2Animate
Revisit storyboards and open 2Animate- children will begin to create each frame using simple drawing tools.
Focus on consistency and small changes across frames
Support with tips- using copy/paste and onion skinning
- **Add detail and preview animations**

Revisit their animation and add backgrounds, colour and simple effects
Introduce preview function to watch the animation play and adjust timing and make improvements based on observation
Peer feedback: swap animations and discuss what works well

-Celebrate finished animations and reflect
Each pupil presents their animation to the class or small group
Class discussion: What did we learn about animation? What was challenging? **OR** create a simple display board with screenshots or QR codes
Pupils write a short reflection or record a voice comment in Purple Mash

Beyond Britain

Summer One

Digital Art – Photography

Teach Computing Unit- Digital Photography - see Teach Computing for detailed lesson plans and PPT/ worksheet resources.

- Discuss the range of devices that can be used to take photographs and how they would capture their own photographs.
- Explore taking photographs in portrait or landscape and discuss the benefits of using the different forms.
- What is good composition? How to compose a good photograph and give the children time to compose and capture their own photograph.
- Explore lighting and focus- why is this important to a photograph? Discuss using the camera flash and artificial lighting to enhance an image to capture.
- Apply their skills to taking photographs of their friends for the End of Year Performance.

Data Handling-Pictograms

Teach Computing Unit- Pictograms- see Teach Computing for detailed lesson plans and PPT/ worksheet resources.

1. **Counting and comparing.** Organising data and creating tally charts. Then answering questions using these charts.
2. **Enter the data.** Introduce pictograms and create these manually.
3. **Creating pictograms.** Collect data using a tally chart and create a pictogram using 2Graph.
4. **Attribute.** Thinking about how objects can be grouped. Then tally objects using a common attribute and then answer questions (more then/less than, most/least)
5. **Comparing people.** Understand that people can be described by attributes and then collect data about people and create a pictogram.
6. **Presenting information.** Use pre-made data to create a bar diagram and then share the data with their peers.

Summer Two

Digital Music

Using Chrome Music Lab

Chrome Music Lab

Know that multimedia includes sounds and experiment with different ways of manipulating sound

Choose different ways to compose music- use different software- chrome music lab (rhythm, melody maker and song maker)

Song maker- explore the grid – where are the high and low sounds? Explain that we read it left to right like reading a book- this shows the time.
Explore adding notes- click a square to add the notes, click again to remove it.
Challenge them to make a simple pattern.

Adding rhythm- use bottom row (circles) to add drums or beats. Explore this and then challenge them to ty to add a steady beat to their song (e.g one every four boxes).
Play your song- listen to what they've created and adjust based on what they would like to change.

Change the sound- look at pressing the instrument icon to change the instrument used in their song. Then change the tempo using settings.

Save or share their work using the link and upload to Seesaw.

Suggested activities:

- **Echo patterns-** play a 4-note pattern and ask them to copy
- **Call and response-** teacher to crate pattern and children create an answer
- **Compose to an image-** look at sections of The Tiger Child and compose a piece to match the illustration
- **Challenge them to add lyrics to their compostion.**

Breakdown of Knowledge

This document shows how substantive, declarative (knows that) and procedural (knows how to) knowledge develops in Computing across the school.

knowledge

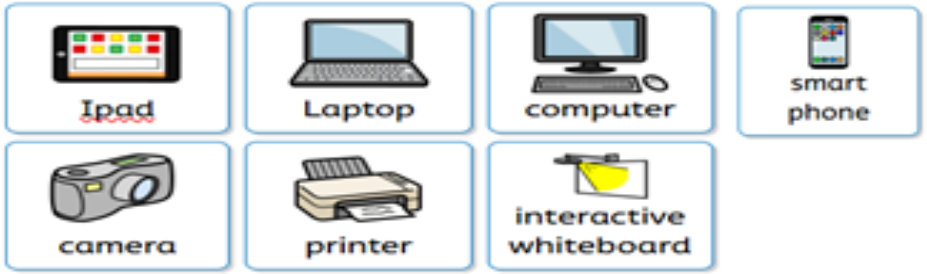
can use

Knowledge Organisers

Reception

Technology

- Children will recognise and name a range of common technology.



Tablets- Ipads

- Children will learn terms for parts of an Ipad.
- Children will explore how to use features of an Ipad.

My prior knowledge
What I will have experienced in Nursery.

Use of an Ipad to take photographs.
Use of Mini Mash on an Ipad.
Use of the Clevertouch screen (interactive screens).
Exploration of programmes such as 2Paint, 2Do,
Explored technology in everyday life- battery toys, devices at home, traffic lights etc).

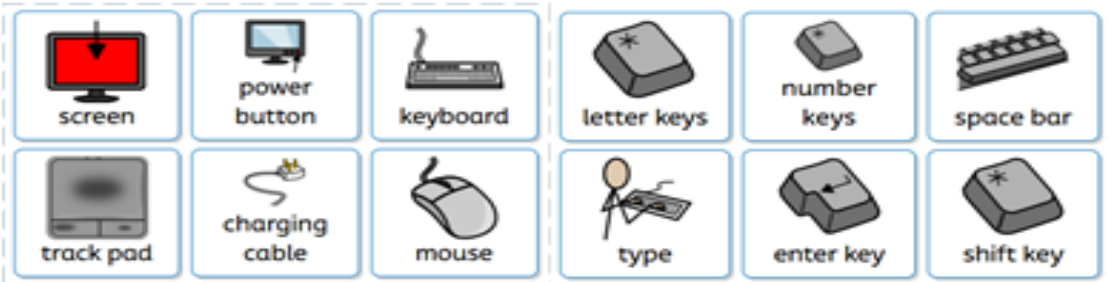
Pre-steps to Using Technology	Year group: Reception	Strand: Basic Skills- Ipads, Laptops

Using technology- What will I do?

- Explore using Ipads for different tasks- taking photographs, accessing age-appropriate apps, documenting their own work.
- Access Mini-mash to complete different projects to experience using touch screen and track pad.
- Navigate start menus and home screens.
- Begin to explore typing on an Ipad keyboard and laptop keyboard.

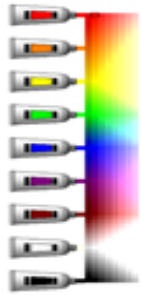
Laptops

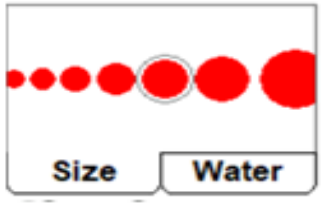
- Children will learn terms for parts of a laptop.
- Children will explore how to use features of a laptop.



Colour

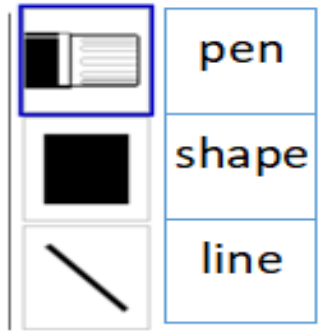
- Explore primary colours and choosing different shades for pictures.
- Explore brush tools for thickness of brush or amount of water added to paint.





2 Paint

- Use tools on 2Paint with more purpose and control to create recognisable pictures.



My prior knowledge What I will have experienced in Nursery.
Use of the Clevertouch board to explore mark making using 2Paint.
Using the stylus to create marks and pictures on the Clevertouch.
Choosing paint colours and tools on 2Paint.
Exploring making marks and pictures on an Ipad.
Choosing colours and paint tools on an Ipad.
Explore using the eraser to remove marks that they have made.

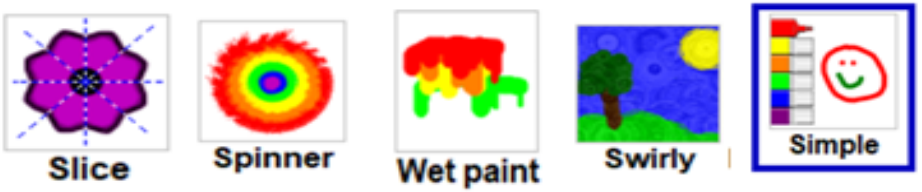
Pre-steps to Digital publishing	Year group: Reception	Strand: Digital Art

Digital Art- What will I do?

- Explore using the touchscreen of an Ipad to explore with shape and colour.
- Choose tools and colours deliberately for a desired effect to create a recognisable picture.
- Share and explore their thoughts, ideas and feelings through creating artwork.
- Begin to comment on their own and others artwork and say what they like about it.
- Use different art style tools on 2Paint to explore different art styles.

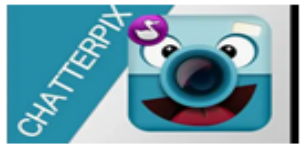
Art styles

- Explore the different art tools on 2Paint to create different styles of picture.
- Discuss what they have drawn and share their feelings.



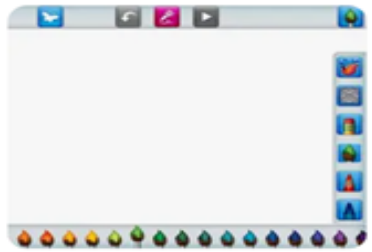
Digital Writing

- Explore using digital writing to label, caption and type sentences.
- Explore using digital writing apps to share ideas and communicate.
- Understand that Ipads and laptops can be used to create digital writing.



Tablets- Ipads

- Open and navigate simple writing apps.
- Type their name, words and simple sentences on the screen.
- Explore changing font and colour.



My prior knowledge
What I will have experienced in Nursery.

Use of the Clevertouch board to swipe and drag to make marks.
Explored scribbling and tracing using games/ apps in Mini-Mash.
Explored tracing over shapes and letters on the Clevertouch board.
Explored typing their own name and simple words with support.
Explored looking at stories in a digital form.

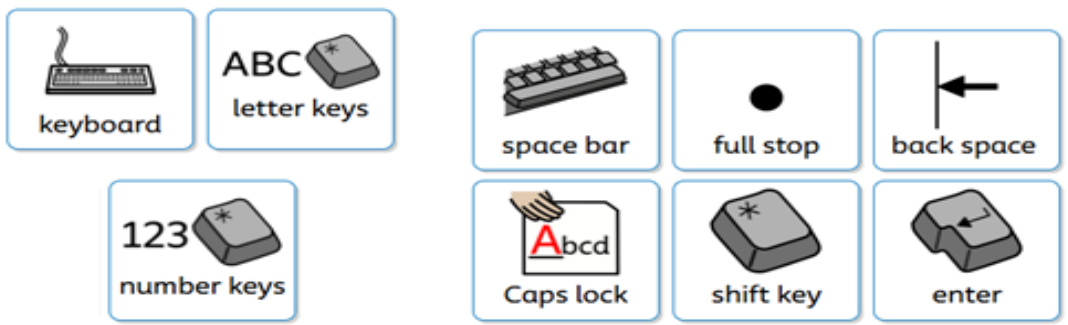
Pre-steps to	Year group:	Strand:
Digital publishing	Reception	Digital writing

Digital Writing- What will I do?

- Explore digital writing on an Ipad by using the apps Seesaw, Chatterpix, Draw and Tell and Mini Mash.
- Explore digital writing on an Ipad using 2Simple software.
- Explore 2Type on Purple Mash to begin to explore using different keys on a keyboard.
- Add labels and captions to pictures and drawings.

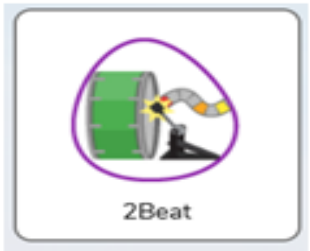
Laptops

- Type simple sentence and use a range of keys with support.



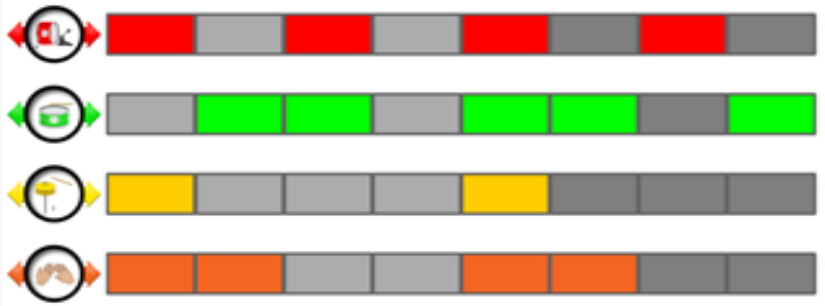
Digital Audio

- Compose short rhythms with structure.
- Explore tempo and volume.
- Explore and select a range of instruments.



2Beat

- Explore using 2Beat to create rhythms and music.
- Comment on the music and rhythms created.



My prior knowledge What I will have experienced in Nursery.
Explored and discussed different audio devices - Clevertouch, CD player, radios, Ipads, mobile phones. Listened to different sounds and recordings on different audio devices.

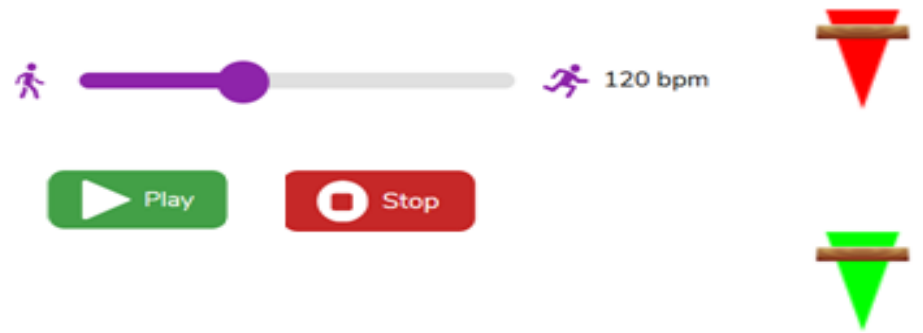
Pre-steps to	Year group:	Strand:
Digital publishing	Reception	Digital Audio

Digital Audio- What will I do?

- Explore 2Beat to create simple musical patters.
- Experiment with the range of instruments on 2Beat.
- Explore using the tempo slider to speed up and slow down their compositions.
- Listen to their own and others' recordings and comment on what they like.
- Use stories and their ideas to experiment with creating rhythms and musical patterns.

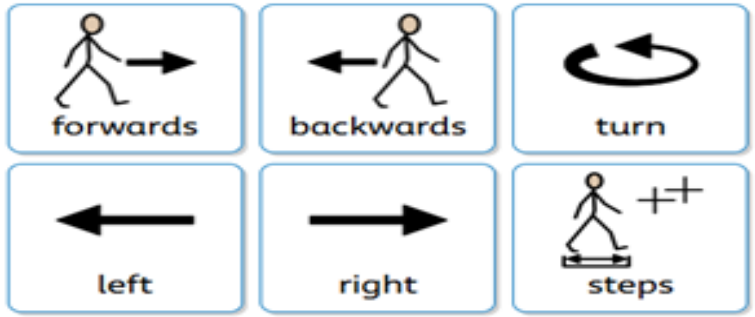
2Beat

- Explore using the range of tools- volume control, tempo slider, play and stop icons.



Programming

- Follow simple instructions.
- Understand directional vocabulary.



Code-a-pillar

- Explore connecting the parts of the code-a-pillar to reach a given destination.
- Predict the outcome of a sequence.
- Test a sequence to solve a problem.

My prior knowledge What I will have experienced in Nursery.
Explored remote control toys and using remotes. Explored and discussed giving and receiving instructions. Understand the words backwards and forwards. Explored using arrows for giving directions. Explored using the code-a-pillar.

Pre-steps to Programming- coding	Year group: Reception	Strand: Coding

Programming- What will I do?

- Explore using the code-a-pillar and bee-bots in unstructured play.
- Use directional language in different activities.
- Plan sequences for the code-a-pillar and bee-bot to reach a specific destination.
- Predict the outcome of a sequence.
- Explore fixing problems in a sequence for the code-a-pillar and bee-bot.
- Create and test sequences to solve challenges.

Bee-Bots

- Explore inputting directions to a bee-bot.
- Plan and input a sequence.
- Predict the outcome of a sequence.
- Test a sequence to solve a problem.

2BeSafe

- Online safety will be delivered using 2BeSafe on Purple Mash.

Autumn Term

- **Self-Image and Identity-** to know they can say no, stop or 'I'll tell' if someone makes them feel uncomfortable.
- **Online Relationships-** Know some ways the internet can be used to communicate.
- Give examples of how to use technology to communicate with people they know.
- **Online Reputation-** Recognise ways that they can put information on the internet.

My prior knowledge What I will have experienced in Nursery.
Explored what the internet is. Discuss who a trusted adult is that they can talk to. Understand that they should not talk to strangers online. Discussed speaking to an adult if something goes wrong online or they feel worried or upset.

Pre-steps to Online Safety	Year group: Reception	Strand: Using technology safely

Summer Term

Privacy and Security- Can identify some simple examples of personal information (name, address, school).
Describe who would be trustworthy to share personal information with.

Copyright and Ownership- Know that work that they create belongs to them.
Can name their work so that others know that it belongs to them.

Spring Term

Online Bullying- Describe ways people may be unkind online.
Know ways that people might feel if someone is unkind online.

Managing Online Information- Talk about ways to use the internet to find information.
Identify devices that can be used to access the internet.

Health, Well-being and Lifestyle- Identify rules that keep us safe online.

Year One

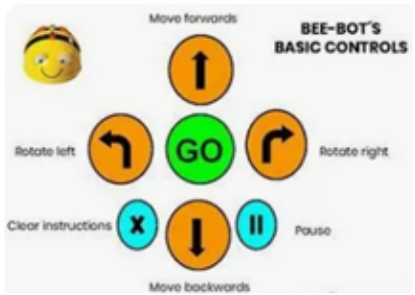
New Invention Infant School Knowledge Organiser

Computing—Coding—Off-Screen programming

Topic: Coding	Year group: One	Strand: Off –Screen Programming Programmable Toys

My prior knowledge What I should already know before starting this topic:
• Understand what an instruction is. • Practised giving and receiving instructions. • Understand and use the terms forwards, backwards and turn. • Understand and use the terms turn, pause and go. • How to predict a simple sequence.

What will I know by the end of this unit? (e.g. key facts, concepts)	
Know what a Bee-Bot is and how it responds to input.	Understand that Bee-Bot follows instructions in the order they're given.
Recognise each button's function (forward, back, left, right, clear, go).	Begin to associate directional language with commands (e.g. "forward" = ↑).
Know that a sequence of instructions is called an algorithm and it is a precise set of instructions.	Understand that changing the order of commands changes the outcome.
Know how to plan a route using directional language and grid-based thinking.	Begin to predict Bee-Bot's movement before pressing "go".
Understand that mistakes can be fixed by reviewing and adjusting the sequence.	Know how to identify and correct errors in a sequence (debugging).



(Links to NC domains/strands e.g. historical enquiry, scientific investigation, fieldwork,)

Coding:

- 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

Engagement motivation and critical thinking (CoL)

- Persists at activities and shows a sense of pride in their achievements, enjoys meeting challenges for an external reward
- Is willing to have a go at using programmable toys and debugging showing high levels of enthusiasm and confidence
- Has a positive approach when something does not go as expected and attempts to fix it
- Are able to say what they have done and say if something was easy/hard.
- Interested in finding out about new vocabulary and using it spontaneously.

Cross-curricular links if appropriate

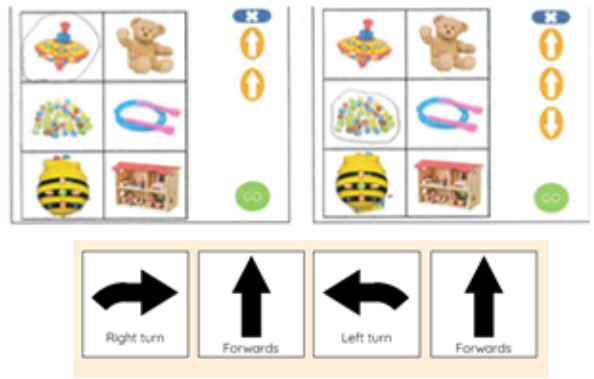
Maths - positional and directional language, ordering, problem solving

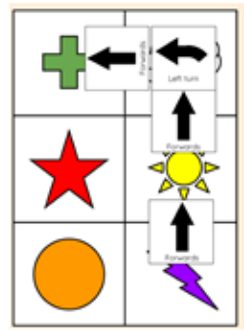
Geography - Maps and directional language

English - Commands, imperative verbs and instructions

PSHE (PoM) - Resilience

Glossary	
Debug	To correct a mistake
Algorithm	A sequenced set of instructions
Programmable toy	A toy where information can be inputted to have an effect
Command	To instruct
Instruction	An order to do something
Forward	Move to a space in front of
Backward	Move to a space behind
Turn	To change the course or direction of
Bee-bot	A type of programmable toy
Destination	The place to which something is going
App	A simple program on a portable device
Clear	Remove an unwanted sequence.
Go	Begin the instruction
Direction	The course that the Bee-Bot will travel along.
Route	The way the Bee-Bot will travel to reach a destination.





New Invention Infant School Knowledge Organiser

Computing

Topic: Coding	Year group: One	Strand: On screen programming Scratch Jnr

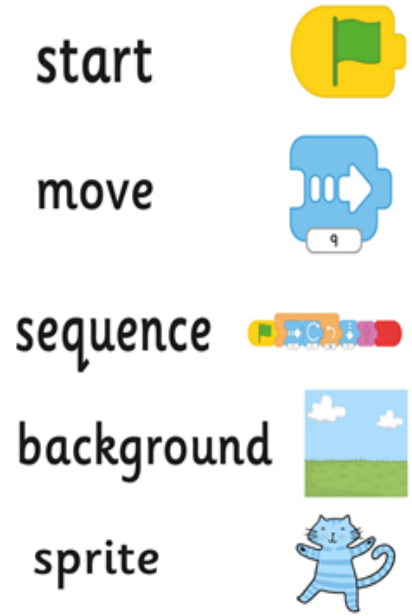
My prior knowledge
What I should already know before starting this topic:

- Understand what an instruction is.
- Practised giving and receiving instructions.
- Understand and use the terms forwards, backwards and turn.
- Understand and use the terms turn, pause and go.
- How to predict a simple sequence.

What will I know by the end of this unit? (e.g. key facts, concepts)

Remembers what an App is and knows how to open the Scratch Jr App and begin a new project.	Uses blocks for movement in different directions in Scratch Jnr and will be able to change the number of steps.
Knows what a sprite is (a character that you can give commands to, to move in an app).	Creates a short set of sequences instructions in Scratch Jnr and links blocks together.
Adds new sprites and backgrounds in Scratch Jnr.	Knows how to start a sequence using the green flag.
After discussion with a teacher attempts to predict the behaviour of simple programs e.g. estimating what a block will do/the distance needed as part of an algorithm.	Notice when the sprite has not followed what they wanted it to do and is starting to debug by checking their work and changing the sequence of commands after discussion with a teacher.

App– command blocks, icons,



(Links to NC domains/strands e.g. historical enquiry, scientific investigation, fieldwork,)

Coding:

-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

Engagement motivation and critical thinking (CoL)

-Persists at activities and shows a sense of pride in their achievements, enjoys meeting challenges for an external reward

-Is willing to have a go at using the Scratch Jr app and debugging showing high levels of enthusiasm and confidence

-Has a positive approach when something does not go as expected and attempts to fix it

-Are able to say what they have done and say if something was easy/hard.

-Interested in finding out about new vocabulary and using it spontaneously.

Cross-curricular links if appropriate

Maths - positional and directional language, ordering, problem solving

Geography - Maps and directional language

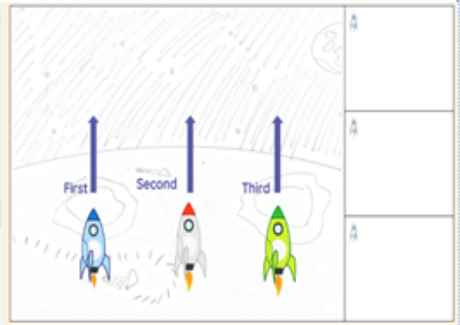
English - Commands, imperative verbs and instructions

PSHE (PoM)- Resilience

-Glossary

Debug	To correct a mistake
Algorithm	A sequenced set of instructions
Sprite	a character that you can give commands to, to move in an app
Command	To instruct
Instruction	An order to do something
Forward	Move to a space in front of
Backward	Move to a space behind
Turn	To change the course or direction of
Destination	The place to which something is going
App	A simple program on a portable device
left	A directional turn
right	A directional turn
background	The part of a picture or scene that is towards the back or seems to be furthest away.
input	Information that is put into a computer
blocks	Instructions that can be re-used and put together in a sequence
link	Joining two or more things together (blocks)
delete	To remove a sprite or part of an algorithm.
predict	Use logical thinking to explain the outcome of a sequence before it has played.
design	A plan produced for an animation.

(Diagrams, maps, photographs, pictures of key people in this section: Edit size of this depending on what else you need to add)



New Invention Infant School Knowledge Organiser

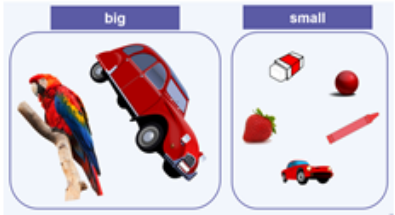
Computing

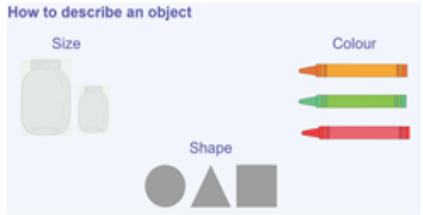
Year group: One	Strand: Data Handling

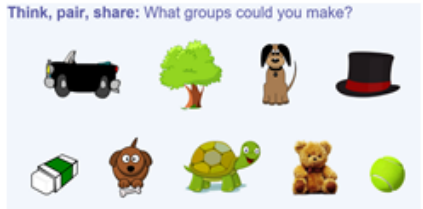
My prior knowledge What I should already know before starting this topic:
• Children will have had experience in Maths with sorting and grouping objects. • Experience from Maths in creating simple tally charts and pictograms. • Discussions about most and least popular.

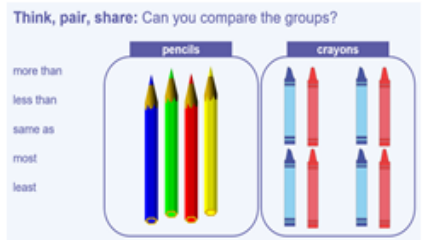
What will I know by the end of this unit? [e.g. key facts, concepts]	
Can count, group and match objects in real life and on a computer.	Describe properties of objects and find objects with similar properties.
Group objects with similar properties and can compare groups of objects.	Count how many objects share a property. Know that objects can be placed into more than one group.
Can choose how to group objects and describe how they are grouped.	Can decide how to group objects to answer a question.
Record and share what they have found out.	Know that computers require input from humans to perform tasks.
Can label images on a computer.	Can drag and drop on a device.

Labelling and grouping









[Links to NC domains/strands e.g. historical enquiry, scientific investigation, fieldwork,]

Data Handling:-

-Use technology purposefully to create, organise, store, manipulate, and retrieve digital content

-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Engagement motivation and critical thinking (CoL)

-Persists at activities and shows a sense of pride in their achievements, enjoys meeting challenges for an external reward

-Engages in discussion about what they have found out from their research and graphs.

-Are able to say what they have done and say if something was easy/hard.

-Interested in finding out about new vocabulary and using it spontaneously.

Cross-curricular links if appropriate

Maths- data handling, grouping and comparing,

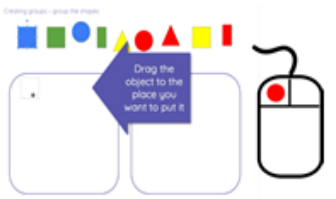
English- descriptive vocabulary

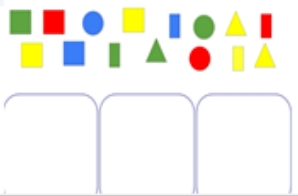
PSHE (PoM)- Resilience, interest in peers, engaging in discussion about likes and dislikes, same and different.

-Glossary

Object	Anything that can be labelled with a property.
Label	A property used to describe an object.
Group	Objects which are connected or similar.
Search	To look carefully for something. To use a computer to find information.
Image	A picture of a person, place or object.
Property	A way to describe an object.
Value	How much of an object there is.
Data	Information about the world (how many children are in school today, what the weather is like).
Set	A collection of related data.
More and less	Compare data by describing the difference in values.
Most, fewest and least	Compare data by describing the difference in values.
The same	The values in the data with the same amount.

Data handling- computers





New Invention Infant School Knowledge Organiser

Computing

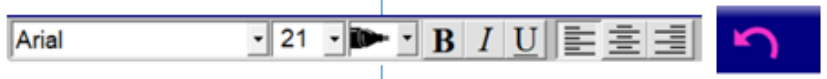
Year group: One	Strand: Digital publishing- digital writing

My prior knowledge What I should already know before starting this topic:
• Children will have explored a range of apps to create digital writing. • Know that laptops and tablets can be used to create digital writing. • Navigate writing apps and make changes to font, colour and size. • Have an understanding of the keys on a keyboard and practised typing words and phrases.

What will I know by the end of this unit? [e.g. key facts, concepts]	
Can open a word processor and start a new document- 2 Publish+.	Recognise, identify and find keys on a keyboard.
Use a range of keys on a keyboard appropriately - letters, numbers, backspace, space bar.	Enter text into a computer.
Use caps lock or shift key to type capital letters.	Identify the tool bar in 2Publish + and use bold, italic and underline.
Select words by double clicking and select phrases by clicking and dragging.	Change the font of their writing.
Use undo to remove changes.	Explain the difference between writing and typing.

Digital writing- 2Publish +

Poster layout on 2Publish+



Links to NC domains/strands
Digital writing:- -Use technology purposefully to create, organise, store, manipulate, and retrieve digital content -Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Engagement motivation and critical thinking (CoL)
-Persists at activities and shows a sense of pride in their achievements, enjoys meeting challenges for an external reward -Shares the digital work that they have created with teachers and peers. -Are able to say what they have done and say if something was easy/hard. -Interested in finding out about new vocabulary and using it spontaneously.

Cross-curricular links if appropriate
English - descriptive vocabulary PSHE (PoM)- sharing their own work, engaging in discussion about their peers work.

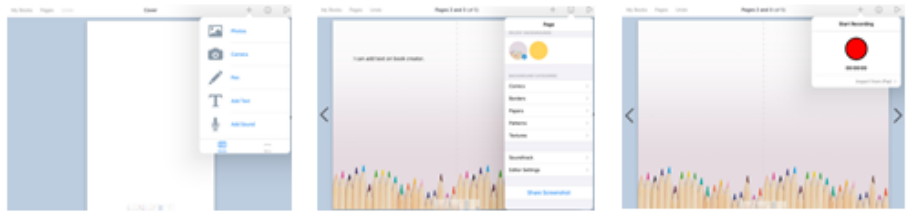
Glossary	
word processor	A computer program used to create text documents.
keyboard	A device to input text onto a computer with different keys.
keys	Small buttons that send signals to a computer.
spacebar	A key that creates a space in text.
backspace	A button used to remove mistakes when typing.
type	Skill of using all ten fingers to input letters, numbers and symbols on a computer keyboard.
cursor	The arrow or pointer on a computer screen that moves when you move the mouse or touchpad.
toolbar	A row of small icons with a menu of tools to use.
bold	Writing that looks darker than the words around it.
italic	Writing that slants to the right.
trackpad	The small, flat touch-sensitive square on a laptop.
undo	To reverse or cancel a change you have made.
format	The way something is arranged or organised.

Book Creator

Children will also explore digital publishing through the use of the Book Creator app.

Children will explore creating a book, adding text and images. They will think about how to format their book thinking about the design of the background and text.

Children will explore adding audio to their book.



New Invention Infant School Knowledge Organiser

Computing

Year group: One	Strand: Digital publishing- digital art

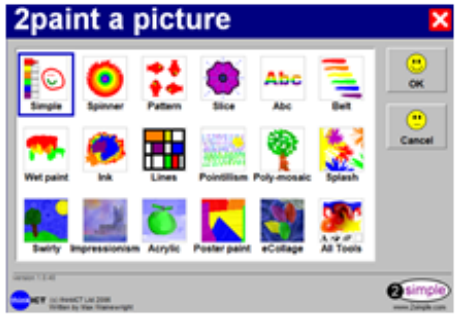
My prior knowledge
What I should already know before starting this topic:

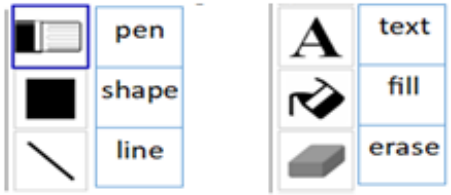
- Explored using various tools on 2Paint to create different styles of digital artwork.
- Used different tools- pens, brushes, text, fill, shape and erase.
- Shared their feelings about what they have drawn.

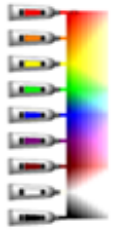
What will I know by the end of this unit? (e.g. key facts, concepts)

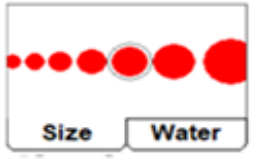
Understand that digital art includes drawings, photographs and clip art.	Draw lines and shapes on the screen and explain what tools have been used.
Experiment with shape and line tools to create artwork.	Experiment with paint tools and colours to create artwork.
Experiment with changing brush size and style and using this for their artwork.	Use the shape and line tools to recreate the work of an artist.
Choose appropriate paint tools and colours to recreate the work of an artist.	Discuss differences between paintings on screen and on paper.

Digital art: 2 Paint









Kandinsky artwork

Links to NC domains/strands

Digital art :-

- Use technology purposefully to create, organise, store, manipulate, and retrieve digital content
- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Engagement motivation and critical thinking (CoL)

- Persists at activities and shows a sense of pride in their achievements, enjoys meeting challenges for an external reward
- Shares the digital work that they have created with teachers and peers.
- Are able to say what they have done and say if something was easy/hard.
- Comments on their own and others artwork.
- Interested in finding out about new vocabulary and using it spontaneously.

Cross-curricular links if appropriate

Maths - explore shapes and patterns

English - descriptive vocabulary

Art - explore different artwork styles

PSHE (PoM) - sharing their own work, engaging in discussion about their peers work.

Glossary

Paint program	Digital program to create digital artwork.
paintbrush	A tool used to spread paint.
erase	Remove a mistake.
fill	To fill an area.
undo	To reverse or cancel a change you have made.
shape tools	Tool to create outlines of different shapes.
line tool	Tool to create different lines.
brush style	The style of paintbrush - thickness, amount of water.
picture	An image of a person, place or object.
painting	Creating pictures using paint on paper or digitally.
photograph	A picture made with a camera.
frame	Centring the image on the camera before taking a photograph.

Photography

Children will also explore digital art through photography.

Children will explore how to take a 'good' photograph using a tablet, thinking about how to frame the image correctly.

2BeSafe

- Online safety will be delivered using 2BeSafe on Purple Mash.

2BeSafe - Being Safe in a Digital World

My prior knowledge What I will have experienced in Nursery.
Children will have explored different stands of Online safety in Reception. - Self Image and Identity, Online Relationships, Online Reputation, Online Bullying, Managing Online Information, Health Well-being and Lifestyle, Privacy and Security, Copyright and Ownership.

Year group:	Strand:
Year One	Using technology safely

Autumn Term

Self-Image and Identity- Can recognise that there may be people online who make others feel sad.
If something happens that makes them feel uncomfortable give examples of who they can speak to.
Online Relationships- Know when they should ask permission to do something online and use the internet with adult support to communicate with known people.
Explain why it is important to be kind and considerate online.
Online Reputation- Recognise that information stays online and can be copied.
Describe what information should not be put online.

Spring Term

Online Bullying- Describe how to behave online in ways that would not upset others.

Managing Online Information- Give some simple examples of how to find information online (search engines).
Understand that there are a range of things online that we may like/dislike.
Knows to get help from a trusted adult if something they see/read upsets them.

Health, Well-being and Lifestyle- Explain rules to keep themselves safe at and beyond home.

Summer Term

Privacy and Security- Explain that passwords are used to protect information.
Can identify more detailed examples of personal information (family names, address, school).
Knows to ask before sharing any personal information online.

Copyright and Ownership- Explain why work they create belongs to them.
Saves work under a suitable title and name.
Knows that work created by others does not belong to them.

Questioning

Area of Computing	Nursery/The Hub	Reception	Year One	Year Two
Coding	**Thinking About Instructions** What happens if we press this button? Can you tell the robot where to go? What should we do first, next, and last? Can you give me a clear instruction? What happens if we change the order? **Exploring Movement and Direction** Can you make the robot go forward? How do we turn it left or right? What direction is it facing? Can you help it get to the flower? What happens if it bumps into something? **Playing with Patterns and Sequences** Can you make a pattern with colours or sounds? What comes next in this sequence? Can you repeat the same steps again? What happens if we do it backwards? Can you spot the mistake in the pattern? **Reasoning and Prediction** What do you think will happen next? Why did the robot stop? What would happen if we added one more step? How can we fix it if it doesn't work? What do we need to do to reach the end? **Creative and Practical Prompts** Can you make a path for the robot to follow? Let's act out a set of instructions — can you be the robot? Can you draw arrows to show where it should go? What story could we tell with the robot's journey? Can you help a friend follow your instructions?	**Thinking About Instructions and Sequences** What happens when we press this button? Can you tell the robot what to do first, next, and last? What steps do we need to follow to reach the goal? Can you give me instructions to move across the mat? What happens if we miss a step? **Exploring Direction and Movement** Can you make the robot go forward, backward, left, or right? How many steps does it need to reach the flower? What direction is it facing now? Can you help it turn around? What happens if it bumps into something? **Spotting Patterns and Fixing Mistakes** Can you repeat the same steps again? What comes next in this pattern? Can you spot the mistake in the instructions? What happens if we change the order? How can we fix it if it doesn't work? **Reasoning and Prediction** What do you think will happen next? Why did the robot stop? What would happen if we added one more step? How do you know it will reach the end? What could we do differently next time? **Creative and Practical Prompts** Can you draw arrows to show where the robot should go? Let's act out a set of instructions — can you be the robot? Can you help a friend follow your instructions? What story could we tell with the robot's journey? Can you make a maze or path for the robot to follow?	**Understanding Instructions and Sequences** What happens when we follow these steps in order? Can you give the robot instructions to reach the goal? What do we need to do first, next, and last? Can you spot which step is missing? What happens if we change the order? **Exploring Direction and Movement** How many steps forward does the robot need to go? Which way should it turn — left or right? What happens if it turns the wrong way? Can you help it avoid the obstacle? How do we get it back to the start? **Spotting Patterns and Debugging** Can you repeat the same instructions again? What do you notice about this pattern of steps? Why didn't the robot reach the goal? Can you find and fix the mistake in the code? What happens if we add one more instruction? **Reasoning and Prediction** What do you think will happen next? How do you know the robot will reach the end? What would happen if we removed a step? Why did the robot stop before the finish? What could we do differently next time? **Creative and Practical Prompts** Can you draw a map and write instructions for the robot? Let's act out a set of instructions — can you be the robot? Can you help a friend follow your code? What story could we tell using the robot's journey? Can you design a maze or challenge for the robot?	**Understanding Algorithms and Instructions** What is an algorithm? Can you explain the steps your code needs to follow? What happens if we miss a step in the instructions? How do you know your instructions are in the right order? Can you write an algorithm to help a robot make a sandwich? **Exploring Direction and Control** How many steps does the robot need to reach the goal? Which way should it turn — left or right? What happens if it turns the wrong way? Can you help it avoid the obstacle? How do you get it back to the start? **Spotting Patterns and Debugging** Can you find the mistake in your code? What happens if we change one instruction? Why didn't the character reach the end? How can we fix the problem in our program? What do you notice about the pattern in your instructions? **Reasoning and Prediction** What do you think will happen when we run the code? How do you know the robot will reach the goal? What would happen if we removed a step? Why did the character stop before the finish? What could we do differently next time? **Creative and Practical Prompts** Can you create a story using coding blocks? Can you design a maze and write instructions to solve it? Can you help a friend debug their code? What challenge could you set for the robot? Can you explain your code to someone else?

Area of Computing	Year One	Year Two
Data Handling	**Collecting and Organising Data** What information are we collecting today? How can we sort these objects — by colour, size, or shape? Can you count how many of each item we have? What's the best way to show our results? How can we group this data to make it easier to understand? **Representing Data Visually** Can you make a pictogram to show our favourite fruits? How many children chose apples? Which is the most popular choice? Which is the least popular? Can you use blocks to show how many pets we have? **Interpreting and Comparing Data** What does this chart tell us? Which group has the most? Which has the fewest? Are there any choices that nobody picked? What do you notice about the results? Can you find two groups that have the same number? **Reasoning and Explanation** Why do you think more children chose cats than dogs? What could we ask next time to learn something new? How could we show this data in a different way? What would happen if we added more people to our survey? Why is it helpful to use a chart or graph? **Practical and Creative Prompts** Can you create a tally chart of how many children have siblings? Let's sort classroom objects and count them — how will you show your results? Can you make a graph of today's weather? What question could we ask the class and turn into a chart? Can you explain your data to a friend?	**Collecting and Organising Data** What question do we want to ask the class? How can we collect information to help us answer it? What are we trying to find out? How should we record our results — tally chart, table, or list? Can we sort this data into groups? **Representing Data Visually** Which chart or graph would show this data best? Can you create a pictogram to show our favourite fruits? How many people chose bananas? Can you make a block graph to show how we travel to school? What do you notice when you look at your chart? **Interpreting and Comparing Data** Which is the most popular choice? How do you know? Which is the least popular? Are there any categories with the same number? What does this chart tell us? Can you answer a question using the data? **Reasoning and Explanation** Why do you think more children chose cats than dogs? What might happen if we asked a different class? How could we improve our data collection? What would happen if we added more people to our survey? Why is it useful to show data in a chart or graph? **Practical and Creative Prompts** Can you design your own survey and collect data from your friends? Can you use a computer to make a chart? What question could we ask the class next? Can you explain your graph to someone else? Can you spot any patterns in the data?

Area of Computing	Nursery/The Hub	Reception	Year One	Year Two
Creating digital media- Art	**Exploring Tools and Choices** What colour would you like to use? Can you choose a brush or pen? What happens when you touch the screen? Can you make a big mark? A small one? What happens if you change the tool? **Talking About Shapes and Patterns** Can you draw a circle, square, or triangle? What shapes can you see in your picture? Can you make a pattern with colours? What happens if you repeat the same shape? Can you fill the space with dots or lines? **Describing and Expressing Ideas** What are you drawing today? Can you tell me about your picture? What colours did you choose and why? How does your picture make you feel? Can you add something to make it even better? **Reasoning and Exploration** What happens if you press this button? How can we change the colour? What do you notice when you use a different tool? Can you undo something you didn't like? What would you like to try next time?	**Exploring Tools and Techniques** What tool would you like to use — brush, pen, or stamp? Can you change the colour or size of your brush? What happens when you press this button? Can you fill the space with colour? What do you notice when you use different tools? **Drawing Shapes and Patterns** Can you draw a circle, square, or triangle? What shapes can you see in your picture? Can you make a repeating pattern? What happens if you use lots of dots or lines? Can you copy a shape from the board? **Describing and Expressing Ideas** What are you drawing today? Can you tell me about your picture? What colours did you choose and why? How does your picture make you feel? What would you like to add next? **Reasoning and Exploration** What happens if you change the tool? How can you undo something you didn't like? What do you notice when you mix colours? Can you help a friend use the drawing app? What would you do differently next time? **Exploring Sounds and Tools** What happens when you press the record button? Can you make a loud sound? A quiet one? What does your voice sound like when we play it back? Can you record a sound using your tablet? What happens if we change the volume? **Playing with Rhythm and Voice** Can you clap a rhythm and record it? Can you sing or hum a tune? What sounds can you make with your voice? Can you record a sound that makes you smile? What happens if you speak slowly or quickly? **Listening and Describing** What do you hear in your recording? Can you tell me what sound that was? Does it sound high or low? Fast or slow? What do you notice when you listen carefully? Can you guess whose voice that is?	**Exploring Digital Tools** What tool are you using — brush, pen, fill, or stamp? Can you change the colour or size of your brush? What happens when you click this button? How can you undo something you didn't like? Can you try a different tool and see what it does? **Drawing Shapes and Patterns** Can you draw a circle, square, or triangle? What shapes can you see in your picture? Can you make a repeating pattern? What happens when you use lots of lines or dots? Can you copy a shape from the board? **Expressing Ideas and Creativity** What are you drawing today? Can you tell me about your picture? What colours did you choose and why? What story does your picture tell? What would you like to add next? **Reasoning and Reflection** What do you notice when you use different tools? How did you decide what to draw? What would you do differently next time? How can you improve your picture? Can you help a friend use the drawing app?	**Exploring the Camera and Tools** What happens when you press the shutter button? How can you hold the device to take a clear photo? Can you zoom in or out to change your view? What do you see on the screen before you take the photo? How can you delete or retake a photo? **Choosing What to Photograph** What would you like to take a photo of today? Can you find something interesting, colourful, or patterned? What makes this a good photo subject? Can you take a photo that tells a story? What do you notice in the background or around the edges? **Talking About Composition and Detail** What do you see in your photo? What do you like about your picture? What colours, shapes, or textures can you spot? Is your photo close-up or wide-angle? What could you change to make it even better? **Reasoning and Reflection** Why did you choose to take that photo? What makes a photo interesting or clear? How can you improve your next photo? What would happen if you moved the camera or changed the angle? Can you explain your photo to a friend or the class? **Exploring Tools and Recording** What happens when you press the record button? Can you record your voice clearly? How do you stop and play back your recording? Can you change the volume or speed of your audio? What happens if you add a sound effect? **Creating and Combining Sounds** Can you record a sound to match a picture or story? What sounds can you make with your voice or objects? Can you combine different sounds to make a soundscape? What happens when you layer two recordings? Can you add music or rhythm to your voice

Area of Computing	Nursery/The Hub	Reception	Year One	Year Two
Creating digital media- Audio		**Exploring Sounds and Tools** What happens when you press the record button? Can you make a loud sound? A quiet one? What does your voice sound like when we play it back? Can you record a sound using your tablet? What happens if we change the volume? **Playing with Rhythm and Voice** Can you clap a rhythm and record it? Can you sing or hum a tune? What sounds can you make with your voice? Can you record a sound that makes you smile? What happens if you speak slowly or quickly? **Listening and Describing** What do you hear in your recording? Can you tell me what sound that was? Does it sound high or low? Fast or slow? What do you notice when you listen carefully? Can you guess whose voice that is? **Expressing Ideas and Feelings** What story could you tell with your voice? Can you record a message for a friend? How does your sound make you feel? What sounds remind you of being outside? Can you make a sound that matches your picture?		**Exploring Tools and Recording** What happens when you press the record button? Can you record your voice clearly? How do you stop and play back your recording? Can you change the volume or speed of your audio? What happens if you add a sound effect? **Creating and Combining Sounds** Can you record a sound to match a picture or story? What sounds can you make with your voice or objects? Can you combine different sounds to make a soundscape? What happens when you layer two recordings? Can you add music or rhythm to your voice recording? **Listening and Editing** What do you notice when you listen to your recording? Is your sound loud, quiet, fast, or slow? Can you spot any mistakes or parts to improve? How could you make your recording clearer? What would you change if you recorded it again? **Expressing Ideas and Storytelling** What story are you telling with your sound? How does your audio make people feel? Can you record a message or poem? What sounds would you use to describe a storm or a jungle? Can you explain your recording to a friend or the class?

Area of Computing	Nursery/The Hub	Reception	Year One	Year Two
Creating digital media- writing	**Exploring Tools and Mark-Making** What happens when you touch the screen? Can you make a big mark? A tiny one? What colour would you like to write with? Can you choose a pen, brush, or pencil? What happens if you change the tool? **Playing with Letters and Symbols** Can you find the first letter of your name? What letters can you see on the keyboard? Can you write your name or a special word? What happens when you press this button? Can you make a line, a curve, or a zigzag? **Talking About Writing and Meaning** What are you writing today? Can you tell me about your marks or letters? What does your writing say? Who is your writing for? How does your writing make you feel? **Expressing Ideas and Stories** Can you write something to go with your picture? What story could you tell with your writing? Can you write a message for a friend or family member? What words would you use to describe your favourite toy? Can you help me write a shopping list or birthday card? **Creative and Practical Prompts** Can you write your name using different colours? Let's make a label for your drawing — what should it say? Can you help me write a list of animals? Can you copy a letter from the board? What would you like to write in our class book?	**Exploring Digital Tools and Mark-Making** What happens when you touch the screen or press a key? Can you choose a colour or tool to write with? Can you make big letters or small ones? What happens when you press the space bar? Can you change the size or style of your writing? **Playing with Letters and Words** Can you find the first letter of your name? What letters can you see on the keyboard? Can you write your name or a special word? What word would you like to type today? Can you copy a word from the board? **Talking About Writing and Meaning** What are you writing about? Can you tell me what your writing says? Who is your writing for? What do you want your message to say? How does your writing make you feel? **Expressing Ideas and Stories** Can you write something to go with your picture? What story could you tell with your writing? Can you write a message for a friend or family member? What words would you use to describe your favourite toy? Can you help me write a shopping list or birthday card? **Creative and Practical Prompts** Can you write your name using different colours? Let's make a label for your drawing — what should it say? Can you help me write a list of animals or foods? Can you write a sentence about the weather today? What would you like to write in our class book?	**Exploring Digital Tools and Text** What happens when you press a key on the keyboard? Can you find the space bar, delete key, and enter key? How do you start a new line or sentence? Can you change the size or colour of your writing? What happens when you use capital letters? **Writing Words and Sentences** Can you write your name or a sentence about yourself? What words would you like to type today? Can you write a sentence to go with your picture? What punctuation do you need at the end of your sentence? Can you copy a sentence from the board? **Thinking About Meaning and Audience** What are you writing about? Who is your writing for? What message do you want to share? How can you make your writing clearer? What would you like someone to learn from your writing? **Editing and Improving** Can you spot any mistakes in your writing? What could you add to make your sentence more interesting? How can you fix a spelling mistake? Can you read your writing aloud to check it makes sense? What would you change next time? **Creative and Practical Prompts** Can you write a label for your drawing? Let's write a list — what should we include? Can you write a short story or poem using the computer? Can you help a friend write their sentence? What would you like to write in our class book or newsletter?	

Area of Computing	Nursery/The Hub	Reception	Year One	Year Two
Using technology	**Exploring Devices and Tools** What happens when you press this button? Can you turn the tablet or computer on? What do you see on the screen? Can you find the camera, microphone, or speaker? What do we use this device for? **Thinking About Purpose and Use** What can we do with a tablet or clevertouch? How do we use a phone or camera? What do people use technology for at home or school? What do you notice when we use the interactive board? What happens when we touch the screen? **Talking About Everyday Technology** Have you seen this kind of technology before? What technology do you use at home? Can you tell me what this machine does? What sounds or lights does it make? What do you like to do on the tablet? **Playful and Practical Prompts** Can you take a photo with the tablet? Let's play a game — what do we need to do first? Can you help me find the drawing app? What happens when we record your voice? Can you show a friend how to use the device?	**Exploring Technology and Devices** What happens when you press this button? Can you turn the tablet or computer on and off? What do you see on the screen? Can you find the camera, microphone, or speaker? What do we use this device for? **Thinking About Purpose and Use** What can we do with a tablet or computer? How do people use technology at home or school? What do you use to take a photo or record your voice? What happens when we touch or swipe the screen? What do you notice when we use the interactive whiteboard? **Talking About Everyday Technology** What technology do you use at home? Can you name some machines that help people? What do you like to do on the tablet or computer? Have you seen this kind of technology before? What sounds or lights does it make? **Using Technology Together** Can you show a friend how to use this app? Can you take turns using the device? What should we do if something goes wrong? How can we look after our devices? Why is it important to ask before using someone else's device? **Creative and Practical Prompts** Can you take a photo of something you like? Let's play a game — what do we need to do first? Can you help me find the drawing or writing app? Can you record your voice or a sound? What would you like to do with the tablet today?	**Exploring Devices and Digital Tools** What technology can you find in our classroom? What happens when you press this button? Can you turn the tablet or computer on and off? What do you see on the screen? How do you use a mouse, touchscreen, or keyboard? **Thinking About Purpose and Use** What do people use computers and tablets for? How does technology help us at school or home? What can you do with a camera, microphone, or printer? What do you notice when you use the interactive whiteboard? Can you name some jobs that use technology? **Talking About Everyday Technology** What technology do you use at home? Can you name some machines that help people? What's your favourite thing to do on a tablet or computer? Have you seen this kind of technology before? What sounds or lights does it make? **Using Technology Safely and Respectfully** How can we look after our devices? What should you do if something goes wrong? Why is it important to ask before using someone else's device? How can we take turns when using technology? What should you do if you see something that makes you feel unsure? **Creative and Practical Prompts** Can you take a photo of something interesting? Let's play a learning game — what do we need to do first? Can you help me find the drawing or writing app? Can you record your voice or a sound? What would you like to do with the tablet today?	**Exploring Devices and Digital Tools** What technology can you find in our classroom or around the school? How do you use a mouse, touchscreen, or keyboard? What happens when you press different buttons on a device? Can you explain how to open and close a program or app? What do you notice when you use the interactive whiteboard? **Thinking About Purpose and Use** What do people use computers and tablets for? How does technology help us learn, work, or play? What can you do with a camera, microphone, or printer? Can you name some jobs that use technology every day? What's the difference between using technology at home and at school? **Talking About Everyday Technology** What technology do you use at home? Can you name some machines that help people? What's your favourite thing to do on a tablet or computer? Have you seen this kind of technology before? What sounds, lights, or messages does it show? **Using Technology Safely and Respectfully** How can we look after our devices? What should you do if something goes wrong? Why is it important to ask before using someone else's device? What should you do if you see something that makes you feel unsure? How can we use technology kindly and respectfully? **Creative and Practical Prompts** Can you take a photo of something interesting? Let's play a learning game — what do we need to do first? Can you help me find the drawing, writing, or sound app? Can you record your voice or make a video? What would you like to create using technology today?

Area of Computing	Nursery/The Hub	Reception	Year One	Year Two
Online Safety	**Understanding Technology and the Internet** What do you like to do on the tablet or computer? Who helps you when you use a phone or tablet? What do you see on the screen? Do you know what the internet is for? What do you do if something pops up that you don't understand? **Asking for Help and Making Good Choices** Who can you ask if you're not sure what to do? What should you do if something makes you feel sad or scared? Is it okay to press buttons without asking? What should you do if someone asks to use your tablet? Who do you talk to about what you see online? **Talking About Feelings and Reactions** How do you feel when you play a game or watch a video? What makes you happy when you use the tablet? What makes you feel unsure or confused? Can you tell me about something you saw online? What do you do if something doesn't feel right? **Practical and Playful Prompts** Can you show me how to ask for help on the tablet? Let's pretend we're using a tablet — what should we do first? Can you tell me a rule for using technology safely? What do we do before we start using the computer? Can you help a friend use the tablet safely?	**Understanding Technology and the Internet** What do you like to do on the tablet or computer? What do you see when you go online? What is the internet used for? What happens when you click on a picture or button? Can you tell me what a website or app is? **Asking for Help and Making Good Choices** Who helps you when you use technology? What should you do if something pops up and you don't know what it is? What do you do if something makes you feel sad or confused? Is it okay to press buttons without asking? Who can you talk to if you're not sure what to do online? **Talking About Feelings and Reactions** How do you feel when you play a game or watch a video? What makes you happy when you use the tablet? What makes you feel unsure or worried? Can you tell me about something you saw online? What do you do if something doesn't feel right? **Safe and Kind Technology Use** How can we look after our devices? Why is it important to be kind when we use technology? What should you do before using someone else's device? Can you take turns when using the tablet? What are our class rules for using technology safely? **Creative and Practical Prompts** Can you show me how to ask for help on the tablet? Let's pretend we're using a computer — what should we do first? Can you tell me one online safety rule? What do we do before we start using the internet? Can you help a friend use the tablet safely?	**Understanding Online Spaces** What does it mean to go online? What do you use the internet for? What kinds of things can you see or do on a website or app? How do you know if something is safe to click? What should you do if something pops up that you don't understand? **Asking for Help and Staying Safe** Who can help you if something online makes you feel worried or confused? What should you do if someone you don't know tries to talk to you online? Is it okay to share your name or where you live online? What should you do if a game or video makes you feel upset? Why is it important to ask an adult before going online? **Talking About Feelings and Reactions** How do you feel when you play games or watch videos online? What makes you feel happy or safe online? What would you do if something online made you feel unsure? Can you tell me about a time you saw something online you didn't like? How can you tell if something online is pretend or real? **Using Technology Kindly and Respectfully** How can we be kind when we use technology? What should you do if someone is unkind online? Why is it important to take turns when using devices? What are our class rules for using the internet safely? How can we look after our devices? **Creative and Practical Prompts** Can you draw a picture of someone using the internet safely? Let's make a list of online safety rules — what should we include? Can you act out what to do if something online makes you feel unsure? What would you say to a friend who saw something scary online? Can you help write a class poster about being safe and kind online?	**Understanding Online Spaces** What does it mean to be "online"? What kinds of things can you do on the internet? How do you know if a website or app is safe to use? What should you do before clicking on a link or button? What does a username or password do? **Staying Safe and Asking for Help** Who can help you if something online makes you feel worried or confused? What should you do if someone you don't know tries to talk to you online? Is it okay to share your name, school, or address online? What should you do if a game or video makes you feel upset? Why is it important to ask an adult before going online? **Talking About Feelings and Reactions** How do you feel when you play games or watch videos online? What makes you feel happy or safe online? What would you do if something online made you feel unsure? Can you tell me about a time you saw something online you didn't expect? How can you tell if something online is pretend or real? **Being Kind and Respectful Online** How can we be kind when we use technology? What should you do if someone is unkind online? Why is it important to take turns and share devices? What are our class rules for using the internet safely? How can we help others stay safe online? **Creative and Practical Prompts** Can you write or draw a list of online safety rules? Let's act out what to do if something online makes you feel unsure Can you help a friend use a device safely? What would you say to someone who saw something scary online? Can you design a poster to remind others how to stay safe online?


SEND

Inclusive pedagogy for all learners in Computing

How we create an inclusive environment in Computing:

Give children additional support during the beginning of complex, multi-step problem solving and remove once they have built their confidence/ ability.
Familiarise learners with Tier 2 vocabulary by having them on classroom displays and using them regularly during activities.
Use of screen readers, magnifier aids, visualisers, colour of resources to support learners with visual impairments.
Have representatives of a diverse range of figures in computing.
Arrange the learning space to promote collaboration and hands-on activities.

How we scaffold learning to support children who have literacy and numeracy difficulties:

Model the correct use of vocabulary and show examples of common errors and misconceptions.
Using a reader to support learners in reading texts.
Chunk information and create clear checklists.
When discussing answers rephrase the children's sentences to include the key vocabulary.
Promote Tier 2 vocabulary on classroom displays.
Provide a glossary of key terms.

How we scaffold learning to support children who struggle to retain vocabulary:

Embed opportunities to recall key vocabulary within lessons and activities.
Provide a glossary of key terms.
When discussing answers rephrase the children's sentences to include the key vocabulary.

How we scaffold learning to support children who need time to develop conceptual understanding:

Model answers and look back at completed examples.
Use learner's prior knowledge to create links between old and new content.
Work through examples together with opportunities to talk and ask questions.

How we scaffold learning to support children with attention difficulties:

Incorporate learner's interests into questions where possible.
Chunk information and create clear checklists to help children break down tasks into manageable chunks.
Remove potential distractions in the learning environment.
Make teacher-led delivery concise- chunk material from larger topics to allow the children to complete a range of engaging activities.
Praise work that has been completed.

How we support children who struggle with change and transitions:

Prepare learners in advance of the format of the lesson as it may be different to usual (use of new equipment).
Using visual resources (now/ next boards, visual time lines).
Show children objects/ pictures from the lesson if this motivates them to take part in the lesson.

Assessment

Pre-Nursery and Nursery

Pre-NURSERY 18-36 months												
Names												
Initiates the exploration of technology, turning on and operating some ICT equipment e.g. reaching for a bubble tube, turning on a torch, moving to activate a sound beam.												
Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car												
Selects objects on Ipad/ Clevertouch.												
Achieves effect by using switch or touch screen on computer program/Big Mac/ IPad.												

Working Towards END OF YEAR EXPECTATIONS FOR NURSERY										
Names										
Begin to explore a wider range of technology around them and want to join in with computing activities.										
Basic Skills Uses an app that has been loaded for them. Use the pen on interactive whiteboard. Uses a given tool and colour to create lines/ shapes on IWB. Can type the first letter of their name on a laptop.										
Coding Listens to simple instructions in games like Simon Says. Explores programming toys and understand they are causing them to move.										
Safe use of Technology										

Expected for END OF NURSERY and baseline for Reception											
Names											
Explores and interacts with technology around them.											
Basic Skills Uses an app that has been loaded for them. Use mouse to drag and drop/ pen on interactive whiteboard. Uses a given tool to create a simple picture. Starts to type letters from their name on the laptop.											
Coding Begin to use terms forwards and backwards when giving instructions. Explore using codepillar blocks to create a sequence.											
Safe use of Technology With support of an adult talks about what they might do if something goes wrong when using equipment.											

Reception

Expected for END OF NURSERY and baseline for Reception							
Names							
Explores and interacts with technology around them.							
Basic Skills Uses an app that has been loaded for them. Use mouse to drag and drop/ pen on interactive whiteboard. Uses a given tool to create a simple picture. Starts to type letters from their name on the laptop. Take a photograph with support.							
Coding Begin to use terms forwards and backwards when giving instructions. Explore using codepillar blocks to create a sequence.							

Working TOWARDS EARLY LEARNING GOAL						
Names						
Begin to explore technology around them and begin to use a range of technology- laptops, Ipads, bee-bots.						
Basic Skills With support can find an app on an Ipad. Uses the mouse to select. Can type their name on the laptop, using a capital letter with support. Can begin to use drag and drop. Choose a brush tool and colour and create lines/ simple pictures.						
Coding Begin to understand that robots follow instructions. Explore codepillar blocks and begin to link together to reach a destination. Use some features on a bee-bot- forwards, backwards.						
Safe use of Technology Begin to understand that some things on the internet are not safe for them. Tells a grown up if something upsets them online.						

Working AT EARLY LEARNING GOAL

Names						
Explore technology around them and use a range of technology- laptops, Ipads, bee-bots.						
Basic Skills Can find an app on an Ipad, take a photograph and scan Seesaw QR code. Take a photograph of their work on Seesaw and save to their name Can switch on a laptop and use the mouse to select. Can type a simple sentence on a laptop (It is a … Can use drag and drop. Use a range of art tools- brush, colour, eraser.						
Programming Understand that robots follow instructions. Program Codepillar by linking blocks to reach a destination. Begin to explore controls on the Bee-bot.						
Safe use of technology Can talk about what they would do if they were worried about something they had seen on a piece of technology. Knows that some things on the internet are not safe for them to access.						

Working above THE EARLY LEARNING GOAL						
Names						
Explore technology around them and begin to use a range of technology- laptops, Ipads, bee-bots.						
Basic Skills Types a simple sentence on a laptop with a capital letter or full stop. Uses a wider range of art tools- lines, shapes, brush types.						
Coding Code the bee-bot to move around the bee-bot mat to reach a destination. Begin to spot mistakes in a programmed instruction with support.						

KS1

Working TOWARDS THE EXPECTED STANDARD

Names					
Overarching After discussion with an adult uses taught skills safely and in different ways to create digital content and is beginning to use critical thinking to evaluate their work and solve simple problems					
Multimedia Text and Images Uses a range of simple aspects of technology to create, organise and manipulate digital content.					
Beginning to store and retrieve digital content.					
Multimedia Sound and Motion Uses a range of simple aspects of technology to create, organise and manipulate digital content.					
Technology in Our Lives After discussion with an adult begins to recognise some common uses of technology beyond school.					
Coding and Programming After discussion with an adult understands what algorithms are and that you can execute these on digital devices.					
With support creates and begins to debug simple programs.					
Online Safety After discussion children can use technology safely and understand that they need to keep personal information private. Children can identify where to go for help and support in school or at home when they have do not feel safe when accessing technology.					

Working AT THE EXPECTED STANDARD					
Names					
Overarching Draws upon a range of taught skills to competently, purposefully and safely, use information technology to create a range of digital content and use critical thinking to evaluate, analyse problems and solve these.					
Multimedia Text and Images Children use technology purposefully to create, organise, store, manipulate and retrieve digital content					
Multimedia Sound and Motion Children use technology purposefully to create, organise, store, manipulate and retrieve digital content.					
Children recognise common uses of technology beyond school.					
Coding and Programming Know what algorithms are and that programs execute by following precise and unambiguous instructions					
Can create and input algorithms.					
Can debug and use logical reasoning to predict the behaviour of simple programs.					
Online Safety Children can use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.					

Working above THE EXPECTED STANDARD

Names					
Overarching Uses prior knowledge and a wide range of taught skills to creatively competently, purposefully and safely, use information technology to create a range of digital content. This fits to their own criteria and tools and programs are selected to execute this appropriately and with the greatest effect. To use critical thinking to evaluate, analyse a wide range of problems and solve these.					
Multimedia Text and Images Uses a wide range technology purposefully to skillfully create, organise, store, manipulate and retrieve digital content matched to their own criteria.					
Multimedia Sound and Motion Uses a wide range technology purposefully to skillfully create, organise, store, manipulate and retrieve digital content matched to their own criteria.					
Technology in Our Lives Recognises a wide range of common uses of technology beyond school and evaluates these. Begins to recognise wider forms of technology beyond school.					
Coding and Programming Children have a deep understanding of what algorithms are, how they are implemented as programs on digital devices. Understands that programs execute by following precise and unambiguous instructions and will talk about their programs in detail as they progress and will quickly and skillfully identify what they need to do next. They will create a hypothesis and test this out by creating, debugging and use logical reasoning to predict the behaviour of more complex programs.					
Online Safety Has a deep understanding of why it is important to use technology safely and respectfully and consistently does this and will offer advice to peers about this. They keeping personal information private and can identify a wide range of support that they can access when they have concerns about content or contact on the internet or other online technologies.					