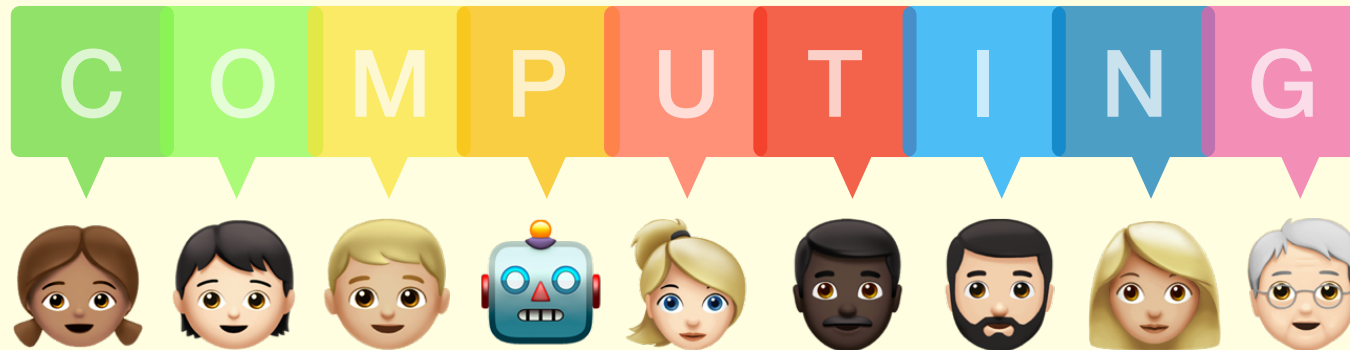


Knowsley CLC Primary Computing Scheme of Work



Inspire a lifelong love of play, design, code, and invention with technology.



www.knowsleyclcs.org.uk



What we want to achieve and why we want to achieve it.

'We believe in a computing curriculum that is easy to follow and will equip children with the skills and knowledge they need to use technology safely and creatively. Computing isn't a subject just about memorising facts and vocabulary words, it's about solving complex problems, being able to collaborate with others and learn from mistakes. We want children to become independent and to have fun with technology while developing 21st-century skills.'

Teaching computing.

'We believe in a curriculum that meets the interests of all learners, with a range of exciting creative activities and open-ended challenges based on the essential requirements of the computing program of study. We also ensure children can build on their understanding, as each new concept and skill is taught with opportunities for children to revisit skills and knowledge as they progress through school.'

'Each of our activities are organised into a series of hour long computing lessons. We like to think of our activities like a story with a beginning, middle and an end. We encourage teachers to help the children create their own digital learning journals that record their understanding and tell the story of the content they create with technology. These journals and the content the children create can be collated in a pupil portfolio and shared with parents, carers and even social media via tools like Seesaw.'

'Lastly, in order to deliver a high-quality computing curriculum, you will need high-quality resources. With each activity you will have links to practical resources, teacher handbook presentations and template computing journals for pupils.'

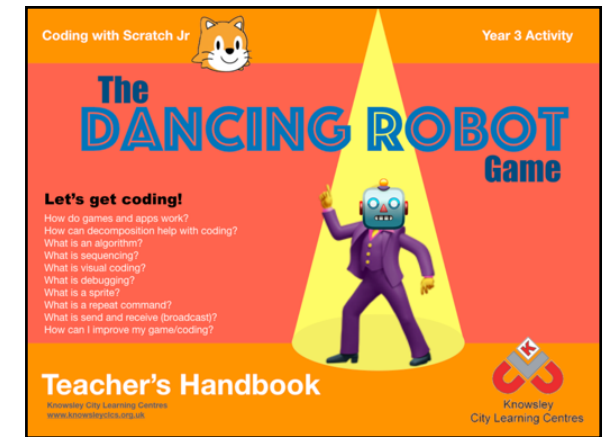
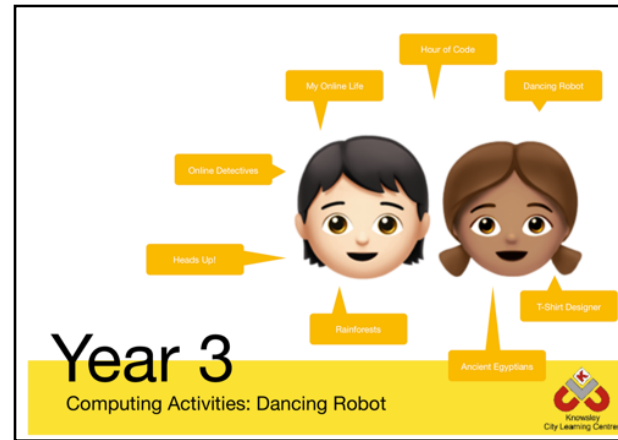
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Step 1: Visit [our website](http://www.knowsleyclcs.org.uk/sow-subscribers-only/) and sign in with your school's username and password. <http://www.knowsleyclcs.org.uk/sow-subscribers-only/>

Year 1
Modern Tales: PDF Word
My Online Life: PDF Word
What is a Computer?: PDF Word
Mini-Beasts: PDF Word
Animate with Shapes (Byte sized): PDF Word
Drawing Maths (Byte sized): PDF Word
Year 2
Online Buddies: PDF Word
My Online Life: PDF Word
Code a Story: PDF Word
Story Land: PDF Word
Heads Up (Byte sized): PDF Word



Step 2: Choose the year group and the activity you want. Select the PDF or Word link to open the planning document.

Step 3: Read through the activity overview and planning document. Here you'll find links to download all the resources required including the teacher handbook, which includes everything you need to teach the activity and associated pupil journal (some units do require the children to make their own journals from scratch).

Step 4: Download and open the teacher handbook. Inside the teacher handbook you will find slides to present your lesson, tutorial videos, additional ideas, vocabulary and assessment targets.



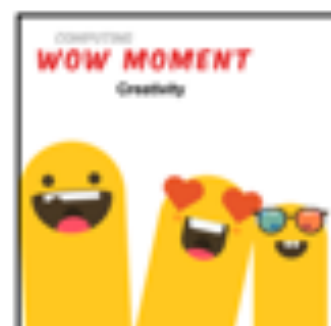
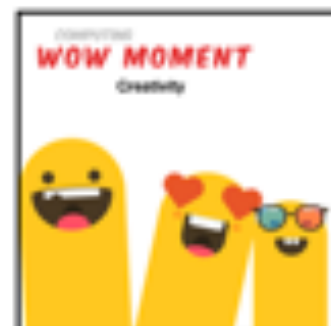
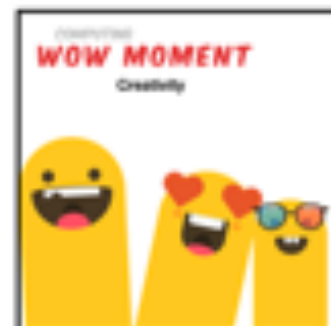
We believe there are non-negotiable digital skills that children must possess.

- ‘All children must have a basic understanding of coding and how the web works.’
- ‘All children must be able to evaluate online information and be social media savvy.’
- ‘All children must understand online safety rules and know how to report and block.’
- ‘All children must be proficient with word processing and able to use cloud storage.’
- ‘All children must be able to create visually engaging content/presentations in order to present learning to others.’
- ‘All children must have experience of online collaboration and using communication tools.’
- ‘All children must be taught the concept of personal archiving and possess their own digital portfolio of work.’

We also encourage schools to go beyond these essential digital skills and the computer program of study. When teaching computing, please include at least two effective learner objectives to be the focus for the term. These are in addition to the specific objectives in each Computing activity. Choose learners who exemplify these qualities to receive the end of unit certificates and computing wow moment cards.

Objectives for all pupils: As you observe and converse with the children about their use of computing you may wish to hand out wow moment cards. These can be found on the following page.

Ability to work independently	Ability to work with each other	Resilience and Challenge	Creativity	Academic Progress
<p>I do not rely on the teacher or other children for support.</p> <p>I can take independent notes or photographs at appropriate times to support my learning.</p>	<p>I am willing to work with others.</p> <p>I share thoughts and ideas with the rest of the group or class.</p> <p>I communicate appropriately and put forward my ideas within a group.</p> <p>I can give others constructive feedback on their ideas.</p>	<p>I attempt any task and try hard.</p> <p>I ask relevant questions of the teacher.</p> <p>I engage in different activities and small competitions, accepting and embracing challenges.</p> <p>I see difficult tasks as a challenge, something I must work at and learn from.</p>	<p>I can come up with ideas and use these ideas to help myself.</p> <p>I am keen to express my ideas in different ways.</p> <p>I take other's ideas into account alongside my own.</p> <p>I use a wide variety of sources effectively.</p>	<p>I am enthusiastic about the lesson and happy to contribute.</p> <p>I am keen to improve my knowledge and understanding.</p> <p>I understand how to improve.</p>

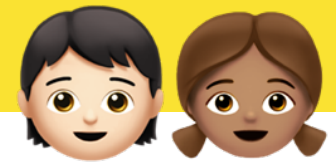




At the end of each unit of work choose a learner who exemplifies the qualities of an effective learner to receive a 'Computing Genius' certificate.

[Download certificates.](#)





Teachers assess children's knowledge, understanding and skills in Computing by making observations, through conversations with the children during lessons, the children's computing journal and the quality of the digital content they create. Built into the activities are several points where the teacher has the opportunity to assess and take stock of the children's progress, then provide feedback.

Teacher feedback can be face-to-face or using digital 'marking' strategies such as adding text comments in digital work or adding audio of your comments, this is dependant on the school's own policy.

These assessment points are also designed for the children to reflect and express feedback on their own learning or engage in discussion about new concepts. Children are encouraged to be critical of their own work and highlight their own next steps.

In the Knowsley Computing Scheme of Work the children build a portfolio of evidence as they create their own individual digital Learning Journals using Book Creator (alternatively Keynote or PowerPoint). Due to the practical nature of Computing, evidence of work undertaken by children should be in the form of a photographic record or a screenshot/screencast of each child's finished work which can be inserted into their journals by the children. These digital books are saved in individual folders on the school network or cloud offering each pupil a place to store their digital work. Alternatively an e-Portfolios app such as Seesaw, Showbie or Google Classroom can be used.

Assessment points/slides in the teacher's handbook for our computing activities.

Computing Vocabulary
Today's word is...

Decompose

Do you understand the language of technology?

Explain meaning / definition:

Use in a sentence:

(add photos, video, drawings and audio too, if you feel it will improve the page)

Understanding of vocabulary

Self Assessment
Did you get it?

(CS) I can create a complex game using Hopscotch and go beyond tutorials.

GOT IT! GOT SOME OF IT TOTALLY LOST!

Use the pen tool to circle the emoji that reflects your understanding of today's lesson. Use the add sound tool if you have any other comments you would like to make.

Understanding of objectives

HAS IT STAYED IN THE BRAIN?
Retrieval Activity: Can you explain?

Last lesson: Last week:

Last term: Last year:

What is animation?

Retrieval of vocabulary and concepts

Your chance to be the teacher!

Who would like to share their thinking?

Can the child explain to others / demonstrate success



Topic	Year Group						
	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mandatory Skills							
Computational Thinking							
Controlling Robots							
STEM Activities							
Programming / Coding							
IT Concepts / Hardware / Networks							
Game Design							
Typing / Word Processing / Presenting							
Digital Storytelling							
Multimedia / Creative Apps							
Data Handling							
2D & 3D Modelling							
Animation							
Photography / Film Making							
Digital Literacy (Websites / Searching / Communication)							
Online Safety							



Take some time during your lessons to teach children how to ask clarifying questions. Show them what they look like and practice asking them in class. Provide them with opportunities in class to do it so that you can answer their questions the first few times. This will then improve the children's digital communication and allow them to give quality feedback to other children. The children should also have class time to review the feedback and develop from it.





What Are Digital Learning Journals?

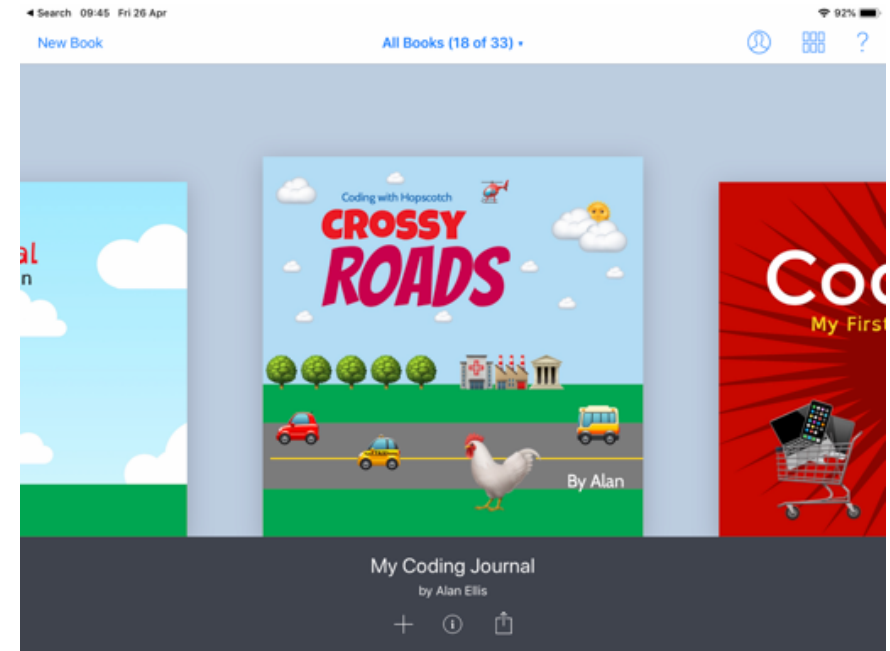
The Pupil Learning Journal empowers children to independently document what they are learning at school. The power of asking children to journal their computing work cannot be understated as it plays a big part in improving learners' attainment and progress.

Keep children engaged in their learning

Every teacher can recognise the challenge of keeping children focused throughout a lesson. Journaling helps children focus on their learning and take ownership of it. By providing opportunities to record or reflect at different points in the lesson, learners begin to shift the focus from the 'how' of computing technology (what tasks to perform), to the 'why' (reflecting on their own understanding). This keeps them engaged, as they are not performing repetitive tasks by rote. Instead, they'll gain a deep understanding of computing concepts by recording their learning in their own words.

Help children self-assess and understand their own learning

An essential component of journaling is freedom: children should feel free to use various media and apps, and openly reflect on their own struggles, mistakes and successes as a learner. The result? Children will steadily develop a strong sense of metacognition — the ability to understand how they learn as individuals. It helps to provide a clear window into what they understood and how they were making sense of the concepts by building on prior understanding or knowledge.



Example of a Pupil Journal created in Book Creator.



Develop higher level thinking skills in children

Digital journals can help children articulate their thinking verbally as they explore logic reasoning and computational thinking. They can quickly and easily record verbal discussions (whether in whole-class teaching, in groups or as they engage in reflective learning activities) and use this to review their predictions with regards to algorithms or programming. This helps to prepare children to record their understanding in written form later.

When encouraging deep-level thinking skills why not try to get students to think about some of the following when journaling:

“I knew I was right when.....”

“The thing you must remember with this kind of problem is.....”

“Tips I would give a friend to solve this problem are.....”

“I wish I knew more about.....”

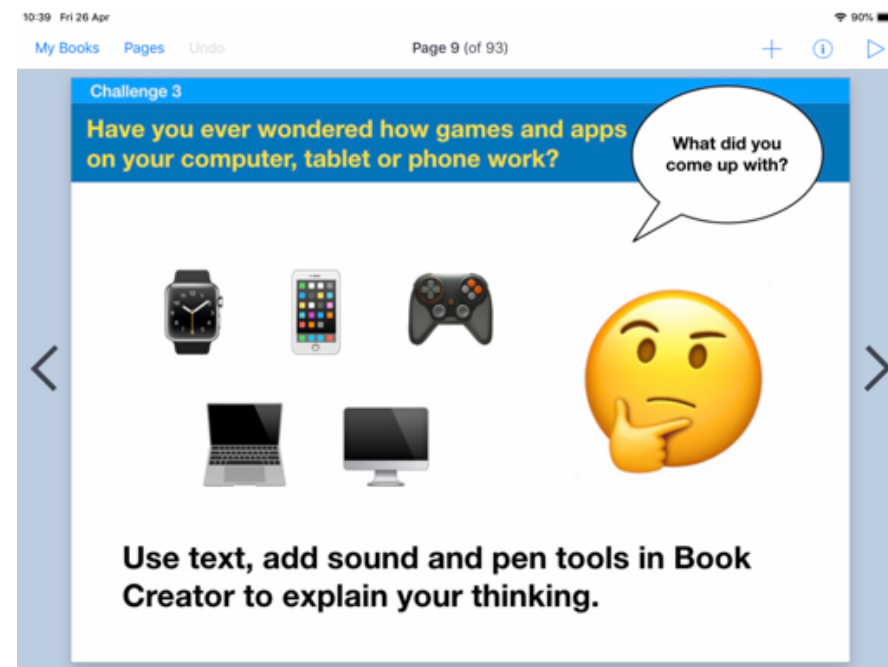
“Could you have found the answer by doing something different? What?”

“Were you frustrated with this problem? Why or why not?”

“What method did you use to solve this problem and why?”

Help teachers assess individual strengths and needs

Journals help children communicate their knowledge about technology, and how they feel about the learning environment they are in. By reading journals, teachers can evaluate their children’s progress and recognise their individual strengths and needs.



Example of a Pupil Journal created in Book Creator.



What Are Pupil Portfolios?

A digital pupil portfolio is a cloud-based collection of your children's work over time. The digital cloud portfolio makes classroom learning more accessible to parents because they provide a window into their child's learning. A portfolio showcases both achievement and learning over time, it can demonstrate growth and knowledge within not only computing but all subjects.

Pupil portfolios encourage children to:

Discuss their own learning with their teachers and parents and families.

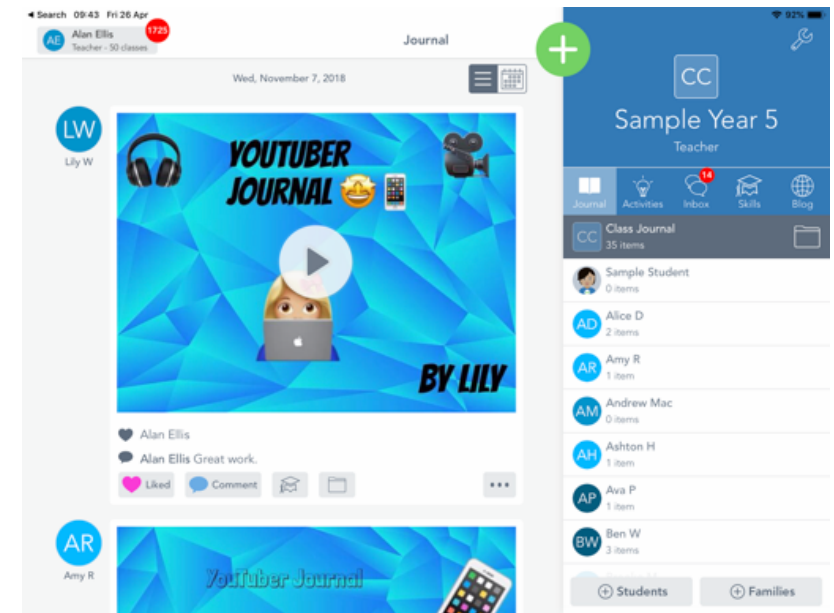
Learn about online communication.

Helps to set meaningful and realistic targets.

Helps children take ownership over their own learning.

To record their own learning using a variety of media and digital content creation.

The children capture their learning with photos, videos of their work, or by adding digital creations such as their own Learning Journals. Everything gets organised in one place and is accessible to teachers from any device at anytime. Children's work can be shared with parents or even the world, this gives children a real audience for their work and offers parents a personalised window into their child's learning.



Example of a Pupil Portfolio in Seesaw.



Reception Activities

Digital Literacy	Computer Science	Information Technology	Byte Size & Fun
R1 Technology & Me: This unit helps children to make sense of and explore the technology around them. The children will get to experience a range of technology/ equipment, including digital cameras, iPads, video cameras, microscopes and sound recorders. Assessment: 1, 8	R2 Robots: This unit gives children their first taste of computing (computational thinking and coding). The children will learn new skills and practice giving instructions to complete tasks. Includes a range of continuous provision activities. Assessment: 4, 5, 6	R3 Animal Safari: This unit helps children use iPads/ tablets independently to collect and record information. The children will learn about opening apps, scanning QR codes, taking photos and recording information in a tally chart. Includes a range of continuous provision activities. Assessment: 1,2, 7	R4 Shape Hunt: The children will use cameras or iPads to photograph shapes and colours from about the school and outdoor area. Assessment: 1, 3
R5 My Online Life: This activity takes place over the course of the term. It covers all the DFE statutory requirements for digital literacy and online safety. Assessment: 8, 9, 10, 11, 12	R6 Nursery Rhyme Coding: Using the theme of traditional tales, this activity develops computational thinking such as sequencing and promotes core technology skills. Assessment: 4, 5, 6	R7 Talking Technology: The children will learn how to take photos, record video and record audio. This is an important skill that will enable them to document their own learning and ideas. The children will create a Tech Museum as they get to explore and play with old technology. Assessment: 1, 2, 7	R8 Beats & Rhythms: The children will use simple sound recording apps and music creation apps to make their own musical loops. Bags of fun for little DJs. Assessment: 1, 3, 7

Coming Soon

Assessment

These activities are to support EYFS practitioners in providing a range of Computing/ICT opportunities and experiences for children in the Foundation Stage that provide continuity and stepping stones into the KS1 curriculum. Early Years Computing assessment is based on pupils having the initial skills in place to progress them to the expected attainment at the end of KS1.

Mandatory Skills

- | | |
|---|--------------------------------------|
| 1 | I can do the basics with technology. |
| 2 | I can go online. |
| 3 | I can use a camera. |

Computer Science

- | | |
|---|---|
| 4 | I can explain an algorithm. |
| 5 | I can explain sequencing. |
| 6 | I can give instructions to a programable toy. |




Information Technology

- | | |
|---|--|
| 7 | I can select and use technology for particular purposes. |
|---|--|




Digital Literacy

- | | |
|----|---|
| 8 | I can discuss the use of technology in the world around me. |
| 9 | I understand that people can talk to each other (communication) online. |
| 10 | I can use a search engine. |
| 11 | I can discuss the rules for staying safe online. |
| 12 | I know online content is made and belongs to someone. |






Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can do the basics with technology.	<p>The child shows curiosity to use digital devices with support. The child is aware that there is a correct way to treat technology and not to do so can be dangerous. The child becomes aware that different choices made using an app on the computer can produce different outcomes.</p> <p>On a computer the child begins to use a keyboard (with support) and notices the effect on screen. On an iPad the child can carry an iPad safely with two hands.</p>	<p>The child can use various digital technologies with support. The child can talk about digital devices and relate them to real life situations. The child understands that digital devices need power to work and that there are controls to turn on and off. The child can talk about how they use digital devices. The child can write their name using a keyboard on different devices. The child can use simple tools on an interactive whiteboard, e.g., software and pen tools.</p> <p>The child can use digital technologies with support. E.g on a Computer the child can click and drag with a mouse or trackpad. Switch on and shutdown a computer with support. Launch an application by double clicking it. E.g. on an iPad the child can press the home button to close an app. Swipe left and right to find an app.</p>	<p>The child can select an appropriate digital device to use for an intended purpose. E.g. play music or create a digital drawing. The child can write their name using a keyboard on different devices. The child can use the shift or caps lock for the initial sound in their name.</p> <p>The child can use digital technologies independently. E.g. on a Computer: Use right click on a mouse or trackpad. Switch on and shutdown a computer independently. Close an application by clicking the x icon. E.g. on an iPad: switch on and off. Change settings on the iPad e.g. volume.</p>
	I can go online.	<p>The child is aware that the internet can be used to find out the answer to questions. The child understands they need to use a device to access online content and can explain what technology should be used. E.g. Watch a video on an iPad or play a game on a computer.</p>	<p>The child is beginning to develop their skills of accessing the internet and understands that with help they can search for/find information and images on the internet. The child with support, can use appropriate websites to locate small amounts of information, images or play a video.</p>	<p>The child can independently open the browser app on a computer or iPad. The child with support can enter text into a search engine to find specific given web sites (e.g. CBeebies).</p>
	I can use a camera.	<p>The child understands that cameras can take still and moving images (video). The child can take appropriate care when using the camera and can use a simple digital camera/iPad app to take a picture.</p>	<p>The child can use a simple digital camera/iPad app to take pictures and demonstrate some basic techniques. E.g. Keeps the camera level and steady. Thinks about and frames the shot carefully before taking the photograph.</p>	<p>The child demonstrates some technique and consideration about the quality. E.g. Thinks what conditions are required to take a good photograph. Is it too dark? The child can delete poorly taken photographs.</p>







Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Computational Thinking: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	I can explain an algorithm.	The child can follow a simple 'algorithm' / list of instructions. E.g. during role play or an unplugged computing activity the child can follow a simple list of instructions. Then say this is an algorithm.	The child can understand that an algorithm is a list of instructions that solves a problem. The child can understand this relates to technology. E.g. during role play or an unplugged computing activity the child can give friends instructions (algorithm) that tells them how to move around like a robot. Or write a simple list of instruction on how to make a pretend jam sandwich.	The child can give instructions for other children to follow involving several ideas or actions. E.g. direction on solving a maze. They can then describe this as an algorithm that solved the problem of the maze.
	I can explain sequencing.	The child with support can sequence a series of events (put things in order). E.g. during role play or an unplugged computing activity the child can sequence a nursery rhythm story into the correct order.	The child can sequence a series of events and explain the importance of sequencing (putting things in order). E.g. brushing your teeth and put the instructions into the correct order. Then explain why instructions need to be in the correct order.	The child can sequence a list of instructions and see this as an algorithm. E.g. brushing your teeth and put the instructions into the correct order. Then explain why instructions need to be in the correct order and use the word sequence.
(CS) Coding: Create and debug simple programs.	I can give instructions to a programmable toy.	<p>The child can use a variety of electronic/programmable toys in play situations (Bee-Bots, Dash robot and remote control toys). The child can understand outcomes when individual buttons are pressed on a robot. The child can use basic directional language like forwards and backwards.</p> <p>The child understands what commands are needed to control different devices, e.g. press a button to make a Beebot move. If robots are not available control simple games on-screen using the arrow keys.</p>	<p>The child can control a range of 'toys' using remote controls and do this with purpose and direction. The child is aware that some technology/devices need commands to operate and control them. They can put this into the context of the real world. E.g. traffic lights.</p> <p>The child can make a Beebot or programmable robot move forwards and backwards. If robots are not available control simple games on-screen using the arrow keys.</p>	<p>The child can guide a floor robot to visit specific locations on a floor map related to another subject, recording the instructions. The child can understand the more advanced sequence of commands needed to control a range of electronic toys. The child can predict the outcome of a set of instructions and test the results.</p> <p>The child can program a Beebot or robot to move forward, backward left and right. The child knows how to clear the code from the Beebot/robot. If robots are not available control simple games on-screen using the arrow keys.</p>
(CS) Logical Reasoning: Use logical reasoning to predict the behaviour of simple programs				



Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	I can select and use technology for particular purposes.	The child knows how computers help us outside and inside school. The child understands there are a variety of applications / apps on a computer or tablet and that they are used for different tasks. E.g. Playing music, drawing, searching and watching videos.	The child understands how various technological devices can be used in the classroom. The child can independently choose an application for a particular purpose. E.g. playing music, drawing, searching and watching videos.	The child can represent their own ideas and thoughts through the use of technology. Combine text, images and possibly other features to create either a printable document or a simple multimedia presentation.
		The child can choose an appropriate application to draw with. The child with support can use an appropriate application and clip art images to create a digital picture.	The child is aware that technology can be used to explore a variety of digital resources to find information for a topic. The child with support can use a browser to search for websites or images. The child can use a paint package to create a picture and then print out from a computer. The child can use a digital/video camera or iPad to record images. The child can use computing to listen/ create sounds and answer simple questions about it.	The child understands there are a variety of tools in an application or app. E.g. in a graphics (art) app and is willing to experiment with them. The child understands that work can be saved and can do so with support.






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Technology in the Real World Recognise common uses of information technology beyond school.	I can discuss the use of technology in the world around me.	The child can recognise common uses of information technology beyond school. The child can sort images of technology into groups outside school and inside school.	The child can recognise and discuss common uses of information technology in school and outside of school. The child can discuss some uses of computing in the real world e.g. How phones, traffic lights, digital boards/signs, computers, cameras, TV are used.	The child can discuss the ways in which technology can help keep us safe and some rules for using technology safely. E.g. Using a device for too long can be bad for us.
	I understand that people can talk to each other (communication) online.	The child is beginning to understand that technology can be used to communicate and that this is different from face to face talking. The child can discuss an example when they have seen someone message or talk to someone in a different place via a phone or tablet or computer.	The child can recognise some ways in which the internet can be used to communicate. The child can identify ways that I can put information on the internet. The child can give examples of how an adult (might) use technology to communicate with people they know. E.g. Skype with family living in another country, FaceTime grandparents etc.	The child can describe ways that some people can be unkind online. E.g. calling people names in a game. The child can offer examples of how this can make others feel.
	I can use a search engine.	The child understands that a search engine like Google can help then find information and images. The child can talk about how they could use the internet to find things out.	The child can discuss examples of how to find information e.g. talk through the steps of using a search engine or voice activated searching like Siri or Alexa. The child with support can use a browser to search for websites or images.	The child can identify devices they could use to access information on the internet and independently open the browser application or app. The child can find and access a child friendly website independently on a device of their choice. E.g. CBeebies website
	I can discuss the rules for staying safe online.	The child is beginning to understand rules that help keep them safe and healthy in and beyond the home when using technology. The child can discuss themes from an online safety session e.g. Smartie the Penguin.	The child can give some simple examples of online safety rules. E.g. beware of strangers online. The child can identify some simple examples of personal information (e.g. name, address, birthday, age, location). The child recognises that they can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' somebody who asks me to do something that makes me feel sad, embarrassed or upset and they can explain how this could be either in real life or online.	The child can describe the people they can trust and can share personal information with; I can explain why I can trust them.
	I know online content is made and belongs to someone.	The child knows that work they create with technology belongs to them.	The child understands that online content such as video, images, websites and games are created and shared by people.	The child can name their digital work so that others know it belongs to them.




<div> <div> Year 1 Activities </div> <div> <div>Knowsley CLCs</div> <div>Primary Computing Scheme of Work</div> <div>Inspire a lifelong love of play, design, code, and invention with technology.</div> </div> <div>  </div> </div>				Mandatory Skills	
Digital Literacy	Computer Science	Information Technology	Byte Size & Fun	1	I can do the basics with technology.
Y1.1 Modern Tales: Using the vehicle of the children’s stories, the children will learn to navigate the rules of online safety and communication. The children will make animations based on an online situation they may encounter. Assessment: 1, 10, 11, 12, 15, 17	Y1.2 What is a Computer?: In this unit children will learn about the different parts of a computer and iPad. They will learn new skills, tips and tricks. The children will be able to see the inner workings of a computer and build their own. Assessment: 10, 11, 6	Y1.3 Mini-Beasts: Children will use technology to classify minibeasts. In this activity the children will learn about gathering and presenting information. They will then make their own David Attenborough style nature documentary. Includes a range of continuous provision activities. Assessment: 1, 2, 7, 9, 11	Y1.4 Animate with Shapes: Children will learn the basic skills of stop frame animation and produce a simple animated movie. Assessment: 1, 7, 8	2	I can take a good quality photograph and video on an iPad/digital camera.
				Computer Science	
				3	I can follow a simple algorithm and create a simple sequence algorithm using symbols that solve a problem.
				4	I can create algorithms that can be turned into a program using a robot or digital device.
				5	I can independently debug simple sequence errors in a program.
				6	I can use logical reasoning to predict the outcome of simple programs.
				Information Technology	
				7	I can use technology to create and present my ideas.
				8	I can organise and store my digital work.
				9	I can collect and sort data.
				Digital Literacy	
				10	I can recognise the ways we use technology in our classroom, my home and community.
				11	I can use a search engine.
				12	I understand something online may upset and know where to find help if anything does,
				13	I can communicate politely via the internet.
				14	I understand that once something is posted you lose control if it.
				15	I can describe how to behave online in ways that do not upset others and can give examples.
				16	I know the rules of using technology at home or in school.
				17	I can explain what personal information is and give examples of it.
				18	I am aware that content online is owned by the person that created it.

Year 1 Progression - Mandatory Skills






Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can do the basics with an iPad or computing.	<p>The child can use digital technologies independently and can demonstrate some basic skills.</p> <p>On a Computer: Click and drag with a mouse or trackpad. Switch on and shutdown a computer independently. Launch an application by double clicking it.</p> <p>On an iPad: Switch on and off the iPad. Press the home button to close an app. Swipe left and right to find an app.</p>	<p>The child can select an appropriate digital device to use for an intended purpose. E.g. play music or create a digital drawing. The child can write their name using a keyboard on different devices. The child can use the shift or caps lock for the initial sound in their name.</p> <p>The child can use digital technologies independently and can demonstrate some basic skills.</p> <p>On a Computer: Use right click on a mouse or trackpad. Close an application by clicking the x icon. Log on and log off on a computer independently. Manipulate an application window by moving and resizing it. Understands that work can be saved and can do with support.</p> <p>On an iPad: Switch on and off the iPad. Change settings on the iPad e.g. volume. Use some basic iPad gestures. E.g. Open the search by swiping down. Know how to scan a QR code. Know when and how to charge the iPad/other digital devices.</p> <p>The child can use simple tools on an interactive whiteboard, e.g. drawing with pen tools.</p>	<p>The child can use digital technologies independently and can support other children.</p> <p>On a Computer: Understands where work can be saved and can do it independently. (This could be to shared drive/cloud or pupil portfolio like Seesaw. Explain how and when to use the shift, space and return keys. Can plug in headphones and adjust the volume.</p> <p>On an iPad: Use more complex gestures e.g. Quit an app or slide through open apps. Access the control centre and change basic settings like the volume or brightness.</p>
	I can take a good quality photograph and video on an iPad/digital camera.	<p>The child can use a camera or app to document their own learning. The child takes care when using the camera and keeps the camera level and steady.</p>	<p>The child can demonstrate an awareness of basic photographic and video techniques to document their own learning. The child can frame the shot carefully and can delete poorly taken photographs/video.</p>	<p>The child demonstrates knowledge of what conditions are required to take a good photograph or video to document their own learning. E.g. too dark. The child will take more than one photo and then choose the best one.</p>






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Computational Thinking: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	I can follow a simple algorithm and create a simple sequence algorithm using symbols that solve a problem.	The child can read and follow a simple sequence algorithm. The child can understand that goals can be achieved by following a sequence of steps. The child can discuss a simple everyday sequence, such as cleaning your teeth, the steps involved and why they must be in the correct order. E.g. Remove toothpaste top, squeeze toothpaste onto brush etc.	The child can understand algorithms as a sequence of instructions. The child can read, follow and create a simple sequence algorithm. The child can understand that an algorithm is a set of instructions to complete a task or solve a problem. They can create a simple everyday sequence of instructions and recognise this as an algorithm. Get up, get dressed, eat breakfast, brush teeth etc. The child can discuss the different steps to sort objects into groups. E.g. colour or shape. Then describe this as an algorithm.	The child can read, follow and create symbol sequence algorithm. While understanding the need for “precise and unambiguous” instructions. The child can understand that their instructions need to be “precise and unambiguous” when creating algorithms and will add extra detail. Get up in the morning, get dressed, eat my breakfast, go to the bathroom and brush teeth for 2 minutes etc.
	I can create algorithms that can be turned into a program using a robot or digital device.	The child can use symbols to create a simple sequence of instructions and can press the buttons to make a robot move. The child can arrange some printed symbol cards to create a sequence of instructions for a programmable toy or app. Forward, left, right etc. The child can then attempt to give these instructions so that the robot moves but does not reach a destination.	The child can use symbols to create a sequence of instructions and can press the buttons in the correct order to make a robot reach a desired destination. The child can arrange some printed symbol cards to create a sequence of instructions for a programmable toy or app. Forward, left, right etc. The child can then give these instructions so that the robot can successfully reach a destination.	The child knows that the instructions for a programmable robot to reach its destination need to be precise. The child can recognise that there is more than one way (sequenced algorithm) to do the same thing. The child can identify two routes to go from point A to point B.
(CS) Coding: Create and debug simple programs.	I can independently debug simple sequence errors in a program.	The child can create a simple program and with support correct mistakes (debug). The child can begin to use software or apps to create movement and patterns on a screen. For example they can program a Bee-Bot on an iPad to move. When errors occur the child can with support debug (fix) the program.	The child can create a simple program and independently correct mistakes (debug). The child can create a simple program E.g. An animation in Scratch Jr. Recognise that there is a problem and say what the problem is. The child can use software or apps to create movement and patterns on a screen. For example they can program a Bee-Bot on an iPad to move. When errors occur the child can debug (fix) the program.	The child can identify where in the program or algorithm the bug/ problem occurs. The child can use the word debug when they correct mistakes in code / programs. The child can create programs containing quite lengthy sequence of instructions using a Bee Bot or an app. The child can work out where bugs are in their program, reset the Bee Bot and enter corrected code or fix the code they have used in the app.
(CS) Logical Reasoning: Use logical reasoning to predict the behaviour of simple programs	I can use logical reasoning to predict the outcome of simple programs.	The child can make simple predictions about what a basic program will do. The child can describe what happens when they press buttons on a robot or Bee bot.	The child can predict what will happen for a short sequence of instructions in a program. The child can describe what happens when they press a series of buttons on a robot or Bee bot / use multiple code blocks in an app.	The child can describe what actions they will need to do to create a lengthy sequence of instructions and outcomes while using computational language. The child can describe what happens when they press a series of buttons on a robot or Bee bot / use multiple code blocks in an app.






Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	I can use technology to create and present my ideas.	The child with support can create original digital content on a digital device. The child with support can use a digital camera, video camera or audio recorders to capture their learning or tell a story (the equivalent apps on mobile devices might be used). E.g. the child can create a photo story with audio or presentation with images and can use the keyboard on a device to enter text.	The child can independently create their own original content using digital technology of their choice. E.g. The child may be able to create a short video, ebook or presentation that combines some text and an image in a document that showcases learning or tells a story.	The child has applied creativity in their work. They have considered the design and colour as well as evidence that they have edited content to improve the presentation of their work.
	I can organise, store and retrieve my digital work.	<p>The child with support can use technology to collect information, that could include photos, video or sound. Then with support organise them in a document such as a presentation or ebook.</p> <p>The child with support can save work in a special place and retrieve it again. E.g. Folder on computer or folder in a cloud.</p>	<p>The child can use technology to collect information, that could include photos, video or sound. The child can create a new document and add information. Then organise them in a document such as a presentation or ebook.</p> <p>The child can talk about the importance of saving their work. The child can name their work when saving files. The child can save work in a special place and retrieve it again. E.g. Folder on computer or folder in a cloud.</p>	The child can name their work when saving files and understand why they need to name files appropriately. E.g. using a describing word like poster.
	I can collect and sort data.	The child with support is beginning to develop simple classification skills by carrying out simple sorting activities either on a device or as an unplugged computing activity. The child can sort items (pictures) into sets, groups or simple tables based on simple criteria like colour or size.	The child has continued to develop their classification skills and can independently carry out simple sorting activities using a digital device. The child can sort items into sets, groups or simple tables based on simple criteria like colour or size. The child with help can then produce a simple graph to present their data.	The child can independently produce a graph to present their data and can explain what the graph shows.



Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Technology in the Real World Recognise common uses of information technology beyond school.	I can recognise the ways we use technology in our classroom, my home and community.	The child (with prompting) can list some of the technology in the classroom, at home and beyond. The child can sort images of technology into groups of where it could be found.	The child can list some uses and purpose of technology in the classroom, at home and beyond. The child can discuss some of the ways in which they use or their parents use technology beyond school. E.g. they could talk about how they watch videos, create digital art, typing in documents, listening to music or audio books, video calls, sending emails and social media.	The child can discuss in more depth how technology is used for a range of purposes beyond school. The child is beginning to identify some of the benefits and risks of using technology and can discuss this in conversation. The child might know that modern TVs can be SMART and use digital technology (Netflix or Amazon Prime). That books are often available in a digital format and can discuss Amazon Kindle or iBooks. That music is often recorded using computers and can be downloaded. That people often communicate using computers or apps these days e.g. WhatsApp or Skype.



Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	I can use a search engine. (Online Bullying)	The child understands they need to use Google or other search engines to find information, websites or images. The child with support can use a device and type in a question to a search engine to find out the answer.	The child knows that in order to access the web they must open an app called a browser. The child can independently type into the search bar and use a search engine to find information, website or an image.	The child can recognise links within websites or documents. The child can navigate a search engine to find a simple website e.g. the school website. They understand simple menus and that underlined text are links to other pages.
	I understand something online may upset and know where to find help if anything does, (Self Image)	The child understands that they can tell an adult when they see something unexpected or worrying online that makes them feel sad, scared or confused.	The child can identify people they can trust and discuss any concerns they may have about using the internet.	The child can give an example of when they might need to tell a trusted adult and put this in context of their own lives.
	I can communicate politely via the internet. (Online Relationships)	The child understands the basic idea of sending and receiving a message. This can be an unplugged session, send and receive paper messages to introduce language of online communication.	The child can send a digital message. The child understands the basic rules and format of sending messages. The child can use apps like G-Suite, Purple Mash or Seesaw to safely send their first message.	The child can add an attachment e.g. a picture. The child can discuss the format, benefits and rules of sending emails/messages.
	I understand that once something is posted you lose control if it. (Online Reputation)	The child understands that it is possible to share information, photographs and videos with others online.	The child can discuss the term 'post' and relate it to their own lives. The child understands once you 'post' information, photos or video, others can see it and share it so you no longer have control of who sees your 'post'.	The child can discuss how a 'post' can be shared to lots of people very quickly, including people they might not know.
	I can describe how to behave online in ways that do not upset others and can give examples. (Online Bullying)	The child can talk about why it's important to be kind and polite.	The child knows how they should behave and interact with others in the real world and apply these behaviours in the online world. The child can discuss why it is very important not to over share, share things that are personal or may hurt other people. The child can describe ways that some people can be unkind online.	The child can identify the activities, content and games they are accessing in school / home and demonstrate or talk about how they would do so safely and politely.
	I know the rules of using technology at home or in school. (Health well being)	The child understands that the internet is fun but just like there are rules in the real world to keep you safe there are rules for keeping you safe in the online world.	The child understands and agrees to follow sensible online rules. The child is able to identify safe behaviours in their day to day world such as not talking to or meeting strangers and how this applies in the online world.	The child can explain how to recognise an app or website that isn't age appropriate.
	I can explain what personal information is and give examples of it. (Privacy and Security)	The child can explain what personal information is. The child can identify some simple examples of personal information (e.g. name, address, birthday, age, location).	The child understands what a username and password is and that they must keep them private.	The child can explain the consequences of sharing personal information.
	I am aware that content online is owned by the person that created it. (Copyright)	The child knows that work they create with technology belongs to them.	The child understands that online content such as video, images, websites and games are created and shared by people. The child understands to use other peoples work without asking or giving credit is wrong.	The child can name their digital work so that others know it belongs to them. The child understands to use other peoples work without asking or giving credit is wrong and this is called copyright.






Year 2 Activities

Digital Literacy	Computer Science	Information Technology	Byte Size & Fun	ideas.	
Y2.1 Online Buddies: This activity will explore what friendship means online. The children will learn about the do's and don'ts of communicating over the internet. Assessment: 11, 13, 14, 15	Y2.2 Code a Story: The children will write a basic story with illustrations. They will then turn this into an animated story using visual coding. The activity will introduce new concepts such as conditional language, repeat loops and debugging. Assessment: 1, 3, 4, 7	Y2.3 Story Land: The children take the role of authors to write the sequel to popular children's stories. They then create illustrations for their story and record them self reading it in order to create an audiobook to publish online. Assessment: 1, 2, 9	Y2.4 Heads Up!: The children play a computing focused game of charades and then create their own version. Assessment: 1, 2, 9	Computer Science	
				3	I can plan out an algorithm with a sequence of commands to carry out specific tasks.
				4	I can identify 'bugs' in computer programs and use the term debug in context.
				5	I can create a simple repeat loop.
				6	I can create a simple game program.
Y2.5 My Online Life: This activity takes place over the course of the term. It covers all the DFE statutory requirements for digital literacy and online safety. Assessment: 12, 13, 14, 15, 16, 17, 18, 19	Y2.6 Making Games: Using Scratch the children will create a hero versus villain game. They will create sprites and learn the basics of using Scratch coding. Assessment: 1, 5, 6, 7 <div>Coming Soon</div>	Y2.7 Presentations & Typing The children will learn to use presentation software and develop their keyboard skills. Assessment: 1, 2, 9, 10	Y2.8 Maths Madness: The children take part in a maths scavenger hunt and then create their own version by creating QR codes and maths videos. Assessment: 1, 2, 9, 10	Information Technology	
				7	I can predict the outcome of a sequence of blocks in Scratch.
				Information Technology	
				8	I can use design and formatting to enhance my digital work.
				9	I can create with technology. E.g. Video, animation, 3D
				10	I can collect and record data purposefully.
				Digital Literacy	
				11	I can give examples of how technology is used to communicate beyond school.
				12	I understand that somethings online may upset me and that I cannot trust everyone online. (Self Image)
				13	I can use online services to communicate safely. (Online Relationships)
				14	I understand that once something it posted you lose control if it and know how to get help if I need to. (Online Reputation)
				15	I can give examples of online bullying behaviour, I understand the impact it may have and I know where to go for support. (Online Bullying)
				16	I can use a search engine and I am aware that not everything I read online is true. (Online Bullying)
				17	I know the rules of using technology at home or in school. (Health well being)
18	I can explain what personal information is and understand the need for passwords to protect it. (Privacy and Security)				
19	I am aware that content online is owned by the person that created it. (Copyright)				




Coming Soon






Year 2 Progression - Mandatory Skills

Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can save, share and retrieve my digital work.	The child can with support save and share their digital work. The child knows their work must be saved but needs support to do so. This could be a photo or document that is saved to a shared drive, cloud folder or pupil portfolio like Seesaw. On an iPad the child could use Airdrop, Seesaw, Email, Cloud etc.	The child when prompted can use digital technologies independently to save or share their work. The child can with support retrieve their digital work and open it in the appropriate app. The child understands where work can be saved and can do it independently. The child with support can retrieve their work from a folder to continue editing or present.	The child can use digital technologies independently and can save or share their work when required. The child can support other children with saving work. The child can retrieve their digital work and open it in the appropriate app. The child understands there are different methods of saving work depending on the digital device used. If required the child can explain their actions and help others.
	I can use technology to organise and present my ideas.	The child can with support use digital technologies to create a presentation or basic digital book that represents an idea or learning during a topic. The child can use simple editing and formatting techniques in a document such as bold or different fonts. The child can combine a set of photographs and basic text to tell a story or present an idea.	The child can use digital technologies independently to create a presentation or basic digital book that represents an idea or learning during a topic. The child can answer questions about their design choices. The child when typing text on a computer keyboard can use the "shift" key independently to add capital letters and symbols. The child can insert an appropriate emoji to use as a graphic and explain its relevance. The child chooses to apply formatting, effects, filters and transitions to enhance their work.	The child can use option keys and basic shortcuts/gestures on an iPad to enhance work flow. E.g. copy and paste. The child can answer questions about why they have used the enhancements.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Computational Thinking: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	I can plan out an algorithm with a sequence of commands to carry out specific tasks.	<p>The child can explain what an algorithm is e.g. a set of instructions.</p> <p>The child can create a basic set of instructions (algorithm) to carry out a specific task.</p> <p>The child can give instructions to a friend that might get them from point A to point B using forward, backward and turn. They can also physically follow instructions themselves.</p> <p>The child can with support program a robot to travel from point A to point B following their algorithm.</p>	<p>The child can explain what an algorithm is with an example e.g. the child can tell you the order (sequence) I need to do things in order to make something happen and talk about this as an algorithm. The child can create, read and follow written sequence algorithms that include commands with additional detail to carry out a specific task. The child can give instructions to a friend to get them from point A to point B using commands with additional detail such as forward 3, backward 1 and right 90° to solve the problem. They can also physically follow instructions themselves. The child can implement their algorithm as a program on a digital device or programmable toy/robot so it travels from point A to point B by following their algorithm.</p>	<p>The child will test, edit, correct and refine a set of given instructions until they get the correct outcome.</p> <p>The child can recognise that there is more than one algorithm to do the same thing e.g. they can identify two routes to go from A-B.</p>
	I can identify 'bugs' in computer programs and use the term debug in context.	<p>The child can explain the term 'debug' e.g. fix bugs, things that don't work in programs.</p> <p>The child with support can fix a simple 'bug' in a program.</p>	<p>The child can independently identify and can fix a 'bug' in multiple programs. e.g. the child can problem solve and correct errors to achieve the correct outcome to make a robot/app to do a particular task. Then explain what was wrong and how they fixed it while using the term debug in context.</p>	<p>The child can watch a program execute and spot where it goes wrong so that they can debug it.</p> <p>The child can offer improvements to a program.</p>
	I can create a simple repeat loop.	<p>The child with support can create simple repeat x times loop. E.g. the child using Scratch Jr or Scratch can add an event block with a repeat loop to make a character (sprite) move repeatedly x times.</p>	<p>The child can independently create a simple program that includes a repeat x times loop. E.g. The child using Scratch Jr or Scratch can create a simple program that includes an event block with a repeat loop to make a character (sprite) move repeatedly x times.</p> <p>The child can suggest other uses for the repeat loop command. E.g this simple repetition could be used to create a dance for a character.</p>	<p>The child can create a program that includes a repeat x times loop and several other blocks of their own choice to add improvements.</p> <p>The child can explain the repeat command and why it can be a benefit when creating programs.</p>
(CS) Coding: Create and debug simple programs.	I can create a simple game program.	<p>The child can with support follow a simple set of instructions in a tutorial to create a game/program. E.g. The child can recreate a sequence of simple instructions in a tutorial and add code blocks in Scratch or Scratch Jr.</p>	<p>The child can add small non critical adaptations to improve the game/program. E.g. The child can add extra movement or audio.</p> <p>The child understand the difference between inputs and outputs.</p>	<p>The child can improve the game/program by making significant changes. E.g. Create multiple sequences running concurrently. The child is happy to tinker and play with the program and can explain why their ideas and changes using the correct vocabulary.</p>
	I can predict the outcome of a sequence of blocks in Scratch.	<p>The child can describe the outcome of a sequence of blocks with some success. E.g. the child can look at a friend's program and tell you what will happen.</p>	<p>The child can offer accurate predictions of the commands required to move a sprite (character in Scratch) from x to y and then create a program to check if they were correct.</p>	<p>The child can spot simple patterns in the program or algorithm e.g. if the program is drawing a square the angles and sides are the same.</p>
(CS) Logical Reasoning: Use logical reasoning to predict the behaviour of simple programs				






Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	I can use design and formatting to enhance my digital work.	<p>The child can use basic word processing skills in a range of situations and with support can change elements such as font size, colour and style to enhance their work. The child can use the keyboard on a device to add, delete and space text for others to read.</p> <p>The child when creating a piece of digital work (presentation, digital book or poster etc) is beginning to consider the layout and design.</p>	<p>The child can create a presentation or basic digital book that is well designed and has images included.</p> <p>The child can resize images inside a document. The child can use a wider range of punctuation, editing and formatting skills to improve their work. The child can use capital letters, delete key, symbols, numbers and correct grammar such as full stops. The child should be able to discuss how they have changed their work and discuss audience. E.g. if they are creating a piece of work about technology does it look like it is about technology. Appropriate images, font, emojis, style etc.</p>	<p>The child in addition may attempt to create digital content by using more than one app, filters or effects or piece of software to enhance it. E.g. the child may attempt to include their own illustrated pictures.</p> <p>The child is proficient at using a computer keyboard and using keys like “shift” and basic short cuts like copy and paste.</p>
	I can collect and record data purposefully.	<p>The child with support can create a digital tally chart or bar chart. The child can talk about the different ways they could use technology to collect information, including a camera, microscope or sound recorder. The child can organise the data they collect. The child understands that a database can store data such as names and addresses. The child can make and save a chart or graph using the data they collect.</p>	<p>The child can explain what kind of information could be used to help investigate a question. The child can read a simple database to find information. The child can organise the data they collect. The child can make and save a chart or graph using the data they collect and show understanding through answering and asking questions.</p>	<p>The child understands that a database is a set of information organised by fields of information. The child is starting to understand a branching database. They can add information to a database.</p>






Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	I can create with technology. E.g. Video, animation, 3D	<p>The child with support can create digital content using one app.</p> <p>For example when creating with technology: The child can produce a short video/Stop Frame Animation showing a sequence of events or telling a story e.g. recording a weather report presented by another pupil, interview a teacher linked to a news story.</p> <p>The child can with support create an electronic game (without coding) E.g. Boxel, Sketch Nation or Floors. Including demonstrating some basic IT skills e.g. use the mouse to paint pictures on a computer/iPad. Draw a basic sprite and explain what a sprite is.</p> <p>The child can use an app/software to create a 3D model.</p>	<p>The child can create digital content using more than one app or piece of software. The child puts thought into their use of technology and how to organise and present ideas in different ways. The child is starting to be more discerning and can discuss design, method and use of tools. The child can save and open files on the device they use.</p> <p>For example when creating with technology: The child can produce a short video/Stop Frame Animation showing a sequence of events or telling a story. They can use simple editing and formatting techniques to improve the quality of their content e.g. recording a weather report presented by another pupil, interview a teacher linked to a news story. The child is starting to be more discerning when taking video, framing image, zooming in before filming as appropriate and move the camera carefully. They can play back a video recording to look for improvements. They can explain the process of creating content.</p> <p>The child can create an electronic game (without coding) E.g. Boxel, Sketch Nation or Floors. Including demonstrating some basic IT skills e.g. use the mouse to paint pictures on a computer/iPad. Draw a basic sprite and explain what a sprite is. The child will explore new or advanced features to see if they will improve their content creation. Save work on computer/ iPad to a cloud and understand that work can be retrieved later.</p> <p>The child can use an app/software to create a 3D model. They will consider the use of a variety of materials and shapes. They will investigate new tools and settings to achieve better results.</p>	<p>The child can take feedback and improve their work accordingly. The child can help and support other children by explaining how to use digital tools.</p> <p>For example when creating with technology: The child can produce a short video/Stop Frame Animation showing a sequence of events or telling a story. They can use simple editing and formatting techniques to improve the quality of their content e.g. recording a weather report presented by another pupil, interview a teacher linked to a news story. The child is starting to be more discerning when taking video, framing image, zooming in before filming as appropriate and move the camera carefully. the child will consider advanced elements like sound quality and music. They can play back a video recording to look for improvements and will correct any errors. They can explain the process of creating content.</p> <p>The child can create an electronic game (without coding) E.g. Boxel, Sketch Nation or Floors. Including demonstrating some basic IT skills e.g. use the mouse to paint pictures on a computer/iPad. Draw a basic sprite and explain what a sprite is. The child will explore new or advanced features to see if they will improve their content creation. Save work on computer/ iPad to a cloud and understand that work can be retrieved later.</p> <p>The child can use an app/software to create a 3D model. They will consider the use of a variety of materials and shapes. They will investigate new tools and settings to achieve better results.</p>






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Technology in the Real World Recognise common uses of information technology beyond school.	I can give examples of how technology is used to communicate beyond school.	<p>The child can identify some benefits of using technology including finding information, creating content and communicating.</p> <p>The child can identify some different ways of communicating online both inside and outside of school. e.g. email, Skype or FaceTime (video call) etc. The child can describe the basic idea of email and what it is. E.g. that an email is a letter to someone and written using a device such as a computer or phone.</p>	<p>The child can give examples of how online communication is used. E.g. the child might know that adults can share work and discuss how ideas or problems are shared in online communities or that photos can be taken, edited and shared easily using digital technology.</p> <p>The child can list different methods of online communication and may be able to discuss this in terms of apps. The child when explaining different ways of communicating online can talk about the differences between the Internet and things in the physical world e.g. difference between a face to face chat and an email. The child understands that as communication is private it requires 'signing in' e.g. the use of a username and password.</p> <p>The child knows that people use email for a range of purposes and can make comparisons e.g. sending a letter is like sending an email and discuss the advantages of using technology to communicate. The child can discuss sending and receiving messages via email or instant messaging. They can use vocabulary like 'inbox' and 'attachment'.</p>	<p>The child can understand that the web is made up of information shared by people and organisations. The child understands that they can communicate with organisations by leaving feedback or a review of products on their website.</p> <p>The child can discuss the journey an email makes with reference to servers and connected computers.</p> <p>The child understands the need for the SMART online safety rules when using online communication. The child can list the SMART rules.</p>
	I know the rules of using technology at home or in school. (Health well being)	<p>The child can explain how they use technology in the classroom to develop their work. E.g. the internet to find out facts or make a presentation. The child can give examples of how technology can be used at home and in the community. E.g. their own use of technology, the games they play, the apps they use and why.</p> <p>The child is aware that there are rules when using technology and these rules are there to help keep them safe.</p>	<p>The child can explain the rules for using technology in the classroom and at home. The child can talk about their use of the internet and why it is important to stick to the rules. The child is beginning to understand why they should go online for a short amount of time and that too much time online (screen time) may not be good for them, especially just before bed. The child understands when to ask for help and who to ask for help.</p>	<p>The child can discuss the rules and give examples from their own experiences of how the rules help keep them safe. E.g. how there might be adverts on web pages and these can mainly be ignored as these are aimed at adults. That games and app have age restrictions (PEGI rating) and these are there for a reason.</p> <p>The child understands the need for the SMART online safety rules when using online communication. The child can list the SMART rules.</p>






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	I understand that some things online may upset me and that I cannot trust everyone online. (Self Image)	The child understands that they should only go online or play games that are approved by trusted adults and that if they come across something upsetting to tell a trusted adult immediately. The child can list the people who they can trust and explain why. The child understands that some people online may not be who they say they are.	The child can discuss what safe sites/apps they can use and what sites/apps they shouldn't be using and why e.g. PEGI rating, age requirements, violent/explicit content. The child knows to talk to a trusted adult before sharing personal information online and to protect their information using strong passwords. The child is aware that the characters and people they interact with aren't always real people and may be computer generated. The child can talk about the differences between the Internet and things in the physical world.	The child can explain how to find out the PEGI rating of a game or app. The child understands that when they are playing games or online, the characters they are interacting with could be computer generated characters or real people in other parts of the world and they should be able to identify if they are real or fictitious.
	I can use online services to communicate safely. (Online Relationships)	The child understands that an online service refers to any information and services provided over the Internet. E.g. a search engine to find information, a bank to manage money or a social media site to communicate with others.	The child can use an online service to send a message. E.g. the child can send an email/ message to a safe contact. The child understands they should always communicate and interact with others in a polite manner. The child understands that you can be connected to many people in your life (real life and online). E.g. email all your friends or chat with friends through social media. The child understands they should always communicate and interact with others in a polite manner.	The child can add an attachment to an email e.g. share a photograph of their work.
	I understand that once something it posted you lose control if it and know how to get help if I need to. (Online Reputation)	The child understands the term 'post' and knows this refers to online services such as social media. The child can explain what is meant by personal information and why it is unsafe to post personal information online were it can be seen by anyone. The child knows to talk to a trusted adult if they accidentally post something they shouldn't or see something that they don't like online.	The child knows to ensure a trusted adult is aware of who they are interacting with online and has approved the interactions because some people online may not be who they say they are. The child can explain some of the potential risks when posting something to the internet. The child understands that once something is posted others can read the post and share it, which means they no longer have control of who sees it. The child knows to talk to a trusted adult before submitting or sharing their full name, address, school name, phone number and date of birth online.	The child is aware posts can be deleted but this might not stop others from seeing it first. The child understands posts can be reported and people can get into trouble for inappropriate posting. The child can list the people they should talk to if something goes wrong online.






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	I can give examples of online bullying behaviour, I understand the impact it may have and I know where to go for support. (Online Bullying)	<p>The child can explain what is meant by the term cyberbullying / online bullying and can give examples.</p> <p>The child knows to communicate and interact with others in a polite manner. The child knows to tell a trusted adult if others are communicating / interacting with them in an unpleasant manner. The child understands that not everybody online is who they say they are.</p>	The child can identify real and fictitious characters they interact with online or in games. The child can talk about why it is important to be kind and polite online and in real life. The child understands that just because they cannot see the person they are communicating with it doesn't mean that they should communicate differently. The person will still be hurt or upset by things you say or do online that are unpleasant.	<p>The child can discuss examples of appropriate online communication that is polite and respectful.</p> <p>The child understands that passwords should only be shared with trusted adults and describe what might happen if somebody else has their login details. E.g. they could post from their account or read all their private messages or information.</p>
	I can use a search engine and I am aware that not everything I read online is true. (Online Bullying)	The child knows what a browser is. The child can explain what a search engine is and why they would use one. The child can find out facts by using a search engine and navigating websites. E.g. the child can visit the school website and find information about school dates. The child knows not all the information found on the internet will be accurate or useful.	The child can explain what a web address/URL is. The child can discuss how some information may be inaccurate or untrue e.g. tomato spider. The child can independently use a search engine to find information to answer questions. The child can navigate to a website via favourites, bookmarks or typing in the URL to the address bar.	The child can discuss ways to check the information on a website is true, accurate or useful. The child can name at least two search engines. The child can use the tools button in Google to sort their results e.g. most recently published.
	I can explain what personal information is and understand the need for passwords to protect it. (Privacy and Security)	The child understands that online sites need login details to use the site or service. The child can login to devices / accounts with a username and password and use computing to communicate with others, following instructions on safe use.	The child understands that login details and passwords should only be shared with trusted adults. The child understands the idea of personal information and that this includes their full name, address, school name, phone number and date of birth and why using a nickname is a safer way to interact online. The child can list personal information that they need to talk to a trusted adult about before sharing online.	The child can describe what might happen if somebody else has their login details. The child can explain what makes a good user name and what makes a good password.
	I am aware that content online is owned by the person that created it. (Copyright)	The child is starting to understand that other people have created the information they use and that it is wrong to use it with out permission.	The child understands that content such as text, images and video from websites can not just be download and used without the author's permission. The child understands that copyright is something that projects people stealing others work (content).	The child can search for or use a website to get copyright free images.

Digital Literacy	Computer Science	Information Technology	Byte Size & Fun
<p>Y3.1 Online Detectives: This activity is designed to support children in mastering the art of advanced internet searching. They will learn new tricks to improve their searches while they try to solve puzzles and challenges.</p> <p>Assessment: 8, 9, 13, 14, 15</p>	<p>Y3.2 Dancing Robot: The children will be using some of Scratch Jr's more advanced coding blocks to create their own interactive dancing robot game. The children will learn the important skills of critical thinking, problem solving and debugging.</p> <p>Assessment: 1, 3, 4, 6, 7</p>	<p>Y3.3 Rainforests: The children will explore rainforests through new Virtual Reality (VR) apps. They will also use Augmented Reality (AR) to create their own learning games for younger children to play.</p> <p>Assessment: 1, 2, 10, 11</p>	<p>Y3.4 Keyboard Adventures: In this activity the children will master the art of using a keyboard and short cuts with a series of fun activities.</p> <p>Assessment: 1, 10, 11</p>
<p>Y3.5 My Online Life: This activity takes place over the course of the term. It covers all the DFE statutory requirements for digital literacy and online safety.</p> <p>Assessment: 14, 15, 16, 17, 18, 19, 20, 21, 22</p>	<p>Y3.6 Programming with Robots: Robots can be found almost everywhere. In this unit the children explore the history of robots and then get to program a robot around a maze.</p> <p>Assessment: 1, 3, 5, 6, 7</p>	<p>Y3.7 Be Digitally Awesome: This unit is all about ensuring the children possess core skills with word processing, spreadsheet and presentation apps.</p> <p>Assessment: 1, 2, 10, 11, 12</p>	<p>Y3.8 T-Shirt Designer: The children will become illustrators and design their own t-shirts.</p> <p>Assessment: 1, 2, 10, 11</p>






Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can troubleshoot when something doesn't appear to be working with my device.	The child understands that if they can't complete an action with a device, an error message may appear on their device.	The child can show independence and attempt to fix a problem they may have before asking for help. E.g. a website isn't loading. The child understands reading an error message may help fix the problem. The child can attempt some simple steps that may fix the error. For example: Ask a friend if they are having the same problem. Is the wifi turned off / are you in aeroplane mode? Refresh the page. Restart/quit your app/browser. Restart your iPad/computer. Are any cables not in properly? The child knows to watch the battery life of a device and can put the device on charge.	The child can do the more routine digital tasks independently and without being instructed. E.g The child can mirror/connect a digital device to a projector or TV. e.g. Airplay, Chromecast or wired. The child knows there are more than one way to complete a task on a digital device and will attempt other solutions. E.g. try a different browser or app.
	I can discuss different types of digital content and file types.	The child understands that there are different types of file types for digital content. E.g. book files are different from video files. The child knows how to play video content on a device. E.g. that a player like VLC or Quicktime is required.	The child understands that every graphic they see online is an image file. The child understands that different media has different file types and name at least two file types and purpose. Eg. Jpeg are image files and MP4 are video files. The child knows how to use digital books on a mobile device. The child can add annotation to a file or document.	The child can save/export a document in various formats as required and explain why.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Computational Thinking: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	I can plan, create and debug programs.	The child can explain what an algorithm is and give examples. The child understands that an algorithm can be used to plan out a program. The child can create an algorithm needed for a simple task in the form of a flow chart. The child can explore an online simulation.	The child can create a detailed flow diagram using the correct symbols. The child can turn an algorithm into a simple program on a digital device. The child keeps testing the program and can recognise when it needs to be debugged. E.g. the child can create a basic game using Hopscotch / Tynker / Scratch / Scratch Jr and fix errors. The child can explain the rules behind the simulation and how they can be realistic / represent reality.	The child can independently plan, create a simple game, fix errors, make improvements after testing and explain how they did it to others. The child can use simulations to spot patterns and test predictions.
	I can use decomposition to help me solve computing problems.	The child understands that decomposition means to break an open-ended problem up into smaller parts and this will make it easier to solve.	The child can demonstrate how they solved a problem by breaking it into smaller parts. The child can plan out a program and break it into smaller steps when tackling the structure, incorporating sequencing, commands and procedures. E.g. the child can plan what code might be required to create a simple game.	The child can recognise that different solutions exist for the same problem and can discuss alternative solutions.
(CS) Coding: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	I can use sequence, selection, repetition and variables in programs.	The child can understand that programs are made up of sequences of instructions in the appropriate order. The child can put programming commands into a sequence to achieve a specific outcome. E.g. the child can use a sequence of coding blocks to make a sprite move in Scratch.	The child can create my own sprite in Scratch/ Scratch Jr. The child can add a repeat command in a program. The child can refine/ improve a program by using the repeat command. E.g. the child can independently write programs to draw different regular shapes using the repeat command.	The child can create a variable. The child can explain why variables are used in programs and give examples. Eg. Timer, life counter or points. The child can create a procedure in Scratch (group of commands) to do a specific task, draw a specific shape.
	I can work with various forms of input and output.	The child can talk about the parts of a computer, including inputs and outputs. e.g. keyboard and mouse/trackpad or touch screen) and output (screen and speakers) for a computer.	The child when viewing a program can identify inputs and outputs. The child can create a program that contains inputs and outputs. E.g. when a button is pressed the program plays a sound.	The child can create a program with multiple types of inputs and outputs. E.g. the program uses the keyboard, mouse, noise detection as the input. The program uses sound, movement or text as the output.
(CS) Logical Reasoning: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	I can use logical reasoning to predict and correct errors in algorithms and programs.	The child can make predictions about what an algorithm will do. The child can make predictions about what a program will do.	The child can detect potential problems in an algorithm which could result in unsuccessful programming. The child when running a program, can describe what went wrong and offer ideas on how this could be fixed/ debugged. The programs can be the child's own or ones provided for them.	The child can debug problems and confirm that they have fixed them by testing the new version of their program.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Networking: Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web	I can explain how the internet works.	The child understands that the internet is a network of linked computers. The child understands that this network of connected devices can provide multiple services, such as the world wide web and email.	<p>The child is able to describe the World Wide Web as the part of the Internet that contains websites.</p> <p>The child can send an email and understands how this works. E.g. the message is sent over the internet to other devices.</p> <p>The child can explain that any information has to be converted to numbers (binary) before it can travel through computer networks.</p>	<p>The child can create/add content to a blog page. The child understands that this content is now visible to the whole world via the internet.</p> <p>The child can understand the process in which information can be converted into a binary code.</p>
(CS) Online: Appreciate how [search] results are selected and ranked	I can explain how a search engine works.	The child understands that there are billions of web pages on the internet. The child understands search engines help us find information.	The child understands what key words are. The child understands that search engines try to put the most useful websites at the top.	The child can begin to explain why certain websites might appear first in their searches.







Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	I can improve the quality and presentation of my work using editing and formatting techniques.	The child can create basic content E.g. a digital book or presentation containing images and text with little or no formatting.	The child can create digital content using a range of mixed tools/media to improve its design. E.g. text, graphics and sound to share my ideas and learning. The child can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker.	The child can create different effects with different technology tools. The child can evaluate their own work and improve its effectiveness.
	I can create with technology. E.g. Video, animation, 3D	The child with support can create content with unfamiliar apps or technology.	The child understands what apps may be required to complete a task. E.g. Microsoft Word to create a document or iMovie to edit a video clip. The child demonstrates creativity and independence while using unfamiliar apps or technology to create content. The child understands the need to create a plan/storyboard when producing digital content. For example: The child can create a well presented digital document to retell a story. They can combine a mixture of text, graphics and sound to share an idea or learning. The child can use an art package using various tools to create their own illustrations.	The child is beginning to recognise that similar icons/features are present within apps and that these are consistent across different types of applications. E.g. the export/save button, the add image button or record button.
	I can collect, analyse, evaluate and present data and information.	The child can collect, record and organise data. The child can discuss the different ways data can be organised. The child can use a data logger to monitor changes and can talk about the information collected. The child can search a ready-made database to answer questions.	The child can design a simple questionnaire to collect information, and display the information in a graph or table. The child can answer questions based on the data they have collected and present findings. The child can add information to a database. The child can filter and sort records in a database to answer questions.	The child can explain the purpose of a branching database. The child can explore a branching database to see how it works and is structured. The child can make a branching database.
(IT) Online: Use search technologies effectively	I can use advanced search tools.	The child can use a search engine to find an appropriate website. The child is aware that Google is not the only search engine.	The child understands that the top results are based on things like most popular, recently updated and you can filter results by adding more detail or using advanced tools.	The child can use advanced search tools in Google to get better results. E.g. latest posted. The child can explain the process and why it can be useful.






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Technology in the Real World Understand the opportunities [networks] offer for communication and collaboration	I know how to use the internet. (Online Bullying)	The child understands that the internet can be used to find information. The child understands that the web (www) contains billions of web pages. The child understands they need to use a browser to access the web. The child understands a search engine is required to find a website unless you know the address. The child can discuss how the internet is used in school, at work by an adult and at home. The child can discuss how the internet may be used for communication. e.g. email.	The child understands that the internet is a computer network. The child understands the internet can provide multiple services, such as the world wide web and email. The child can explain a web sites journey from first request to appearing on the screen to their partner. The child can name the web sites and services that they use and create a world map. The child knows what a URL is.	The child understands other internet services such as streaming video, voice chat (Skype), file transfer services (FTP). The child knows how to find out if a website is https.
	I can analyse information and make accurate searches.	The child can independently answer questions by searching for and using information from a range of sources.	The child can make judgements about the usefulness of information. The child can explain the term 'fake news'. The child understands not all information on the web is accurate.	The child can explain the process of how to check if information is accurate.
(DL) Media & Content: Be discerning in evaluating digital content	I understand the need for copyright and the consequences of ignoring it. (Copyright)	The child knows to ask an adult before downloading files and games from an unfamiliar site on the Internet.	The child can explain what copyright is and why we have copyright. The child knows how to recognise copyright material. The child knows that to use copyright material without paying for it or getting consent is against the law.	The child can search for copyright free images online to use in their own work. The child knows that copying and pasting information and claiming it as their work is wrong (plagiarism). The child can reference website sources.






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I am aware of what I should be sharing online and where to go for help if I need it. (Online Reputation)	The child is aware of the SMART rules and that they exist to help keep them safe on the internet. The child knows that if they have concerns or are worried about something that has happened online, they need to tell someone.	The child can explain the SMART rules about using the internet safely and responsibly. The child can discuss what personal information is and what they shouldn't be sharing. The child understands that they should pause before posting and consider if what they are sharing is appropriate, is it respectful and would it hurt someone's feelings. The child can explain who they should seek help from about online concerns.	The child can discuss the consequences of sharing too much online. The child can discuss the concept of a digital footprint and how this can have a negative effect in the future. The child knows to take a screenshot of anything they find worrying and understands they should discuss it with a trusted adult before doing anything else.
	I understand that I cannot trust everyone I talk to online, that I should be a good digital citizen and where to go for help if something upsets me online. (Online Relationships)	The child can discuss online 'stranger danger' and 'smart doesn't go' campaigns. The child understands the term 'digital citizen'. The child can discuss the adults they trust to help them with any online concerns.	The child when presented with various hypothetical scenarios makes the correct and sensible choices. The child can send and reply to online messages, such as email, respectfully and understand the difference between online and face-to-face. The child is aware of and knows how use the safety features of websites as well as reporting concerns to an adult they trust.	The child understands that some online accounts are not real people and that these are called bots.
	I can explain what bullying is and know where to go for help. (Online Bullying)	The child understands online bullying is the same as bullying in the real world.	The child can explain what online bullying/ cyberbullying is and some of the forms it can take. The child knows how to report any concerns and who they consider a trusted adult.	The child can send and reply to online messages, such as email, respectfully. The child is aware how to screenshot messages on various devices in order to show an adult.
	I understand the impact technology can have on my health, well being and lifestyle. (Health well being)	The child understands that too much time spent using technology may have a negative impact on their health.	The child understands that they need to have a balanced approach to their use of technology. The child can make good choices about how long they spend online. The child can recognise websites and games appropriate for my age. E.g. PEGI rating.	The child understands that if they see something online that makes them feel unhappy, they should discuss this with a trusted adult. The child can discuss what a balanced approach to technology should look like E.g. Digital 5 A Day - By Children's Commissioner.
	I know who I should be sharing information with and how to keep my data secure. (Privacy and Security)	The child can discuss who are the trusted adults in their lives. The child can discuss what personal information is and what is safe to share and what isn't.	The child understands why online accounts need to be signed in to and why passwords should never be shared. The child can talk about what makes a secure password and why they are important. The child can label secure and weak passwords. The child can use a password security checking tool.	The child knows they need to protect their personal information when they do different things online and can give an example of the steps they take. E.g. never leave an account signed in when on a shared device.
	I understand the term identity and I can take appropriate measures to protect my own online identity. (Self Image)	The child understands that the information they put online leaves a digital footprint or "trail." This trail can be big or small, helpful or hurtful, depending on how they manage it.	The child can outline what represents an online identity E.g. images, username, information shared and digital footprint. The child can post positive comments online. E.g. give feedback on another child's work using Seesaw.	The child understands that photos can be altered digitally. The child can discuss the creative upsides of photo alteration, as well as its power to distort our perceptions of beauty, health and self image.

<div> <div> Year 4 Activities </div> <div> <div>Knowsley CLCs</div> <div>Primary Computing Scheme of Work</div> <div>Inspire a lifelong love of play, design, code, and invention with technology.</div> </div> <div>  </div> </div>				Mandatory Skills	
Digital Literacy	Computer Science	Information Technology	Byte Size & Fun	1	I can label the different types of input connections on devices.
Y4.1 Fake or Real?: Fake news is a serious concern and in this activity children will learn how they can sort the truth from the lies. Making videos to show what they have found out. Assessment: 7, 10, 12, 14	Y4.2 Hour of Code: The class will sign up for Hour of Code and work through various challenges. The class can also choose to take part in global coding events. Assessment: 4, 5, 6	Y4.3 Dinosaurs: In this activity the children will make their own summer blockbuster. They will learn all about filming techniques and storytelling skills. Assessment: 2, 8, 9	Y4.4 Minecraft Challenges: Who is the best at building. The children take part in a series of maths/Minecraft challenges. Assessment: 9, 11	2	I can explain common file types.
				Computer Science	
				3	I can design an algorithm to simulate a real-life situation.
				4	I can solve an open-ended problem by breaking it up into smaller parts.
				5	I can design and write a program for a given purpose including specific programming features.
				6	I can test existing programs to see how they could be improved.
				7	I can understand the different methods of communication using the internet.
				Information Technology	
				8	I can improve the quality and presentation of my work using editing and formatting techniques.
				9	I can create with technology. E.g. Video, animation, 3D
				10	I can use a search engine and I am aware that not everything I read online is correct. (Online Bullying)
				Digital Literacy	
				11	I can collaborate online to create digital content.
				12	I can evaluate information presented to me to make informed choices about what is Fake News.
				13	I can describe strategies for safe and fun experiences in a range of online social environments and I'm respectful to others online. (Online Relationships)
				14	I understand that people may have a different online identity to that in real life and am able to interact with others. (Self Image)
				15	I am aware others can find information out about me by searching online. (Online Reputation)
				16	I know which technologies are used for online bullying and I am considerate of others when posting myself. (Online Bullying)
				17	I understand the impact technology can have on my health, well being and lifestyle. (Health well being)
				18	I am aware that some people want to access my data and can take appropriate measures to ensure this doesn't happen. (Privacy and Security)
				19	I understand the need for copyright and the consequences of ignoring it. (Copyright)






Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can label the different types of input connections on devices.	<p>The child understands that external peripherals such as printers, keyboards, speakers, microphones and pen drives can be plugged into devices.</p> <p>The child understands the difference between input and output and can give examples.</p>	<p>The child can explain that an input is data that a computer receives. An output is data that a computer sends.</p> <p>The child can label input and output slots on a device. E.g. USB, HDMI, Firewire, Mini/Micro USB, SD Cards, VGA, DVI, headphone/speaker jack, Lightning connector etc</p>	The child can give examples of specific uses of inputs and outputs. E.g. HDMI is for displays or televisions. VGA is for connecting to the projector. USB is for connecting the keyboard or mouse.
	I can explain common file types.	The child understands that applications will only open specific file types. E.g. Word opens .doc files but not video files such as .mp4.	<p>The child knows when using an application how to save their work. The child can choose the best way to save their files. E.g. as an image (jpeg) to share online.</p> <p>The child can discuss the common file types and their uses, including; jpeg, pdf, doc, animated gif, mp3 and mp4.</p>	The child can describe what cloud computing is. The child can add work to folders within my own digital pupil portfolio, saving them in the relevant file types.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Computational Thinking: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	I can design an algorithm to simulate a real-life situation.	The child can relate the concept of algorithms back to everyday real-life activities. The child can design a simple algorithm to show a real-life situation without reference to the code required. E.g. the child can write a simple traffic light algorithm.	The child can demonstrate the skill of abstraction. E.g. the child can define all the elements in something and then remove the ones that are not needed. The child's algorithm design makes an attempt to show how to accomplish the task in code. The child recognises that using algorithms will also help them solve problems in other learning such as Maths, Science and Design and Technology.	The child's design uses coding structures for selection ("If" and "Then") and repetition. The child can include the use of a sensor to detect a change which can select an action within their program.
	I can solve an open-ended problem by breaking it up into smaller parts.	The child understands that sometimes a problem can be so big or complex that they may struggle knowing where to start. The child can explain the computing term 'decomposition' and why this is a useful skill to help solve problems.	The child can demonstrate a clear process when solving problems. The child breaks the problem up into smaller parts. E.g. what am I trying to do? What have I done already that might help? What do I think the program should be doing? What is it actually doing? Is there more than one solution? How can I test my solution?	The child can recognise that an algorithm will help them to sequence more complex problems/programs.
(CS) Coding: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	I can design and write a program for a given purpose including specific programming features.	The children can produce a simple design (algorithm) for a program that shows the basic structure they want to create without referencing the code required. The child can create a program using applications such as Scratch that achieves at least some of the desired outcomes.	The children can produce a design (algorithm) for a program that shows that they are thinking of the structure of a program in logical, achievable steps and referencing coding structures. For example, 'if' statements, repeat loops and variables. The child can create a program using applications such as Scratch, the program achieves all the planned outcomes. The child can write a program, incorporating features such as inputs, repetition, variables and procedures. The child attempts to debug their own algorithm/program and corrects/debugs errors in code.	The child can explain the coding features they have used. E.g. they understand that 'if statements' are for selection and they are about asking the program to make a choice. They can understand how variables can be used to store information while a program is running.
(CS) Logical Reasoning: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	I can test existing programs to see how they could be improved.	The child can 'read' programs with several steps and predict the outcome accurately.	The child can recognise an error in an existing program and suggest how it might be debugged/ fixed. The child can investigate existing programs, evaluating them and consider how they could be improved.	The child can discuss how a program might be improved by incorporating features such as inputs, repetition, variables and procedures.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Networking: Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web	I can understand the different methods of communication using the internet.	The child understands that the internet is a network of connected devices and it provides multiple services, such as the world wide web and email.	The child can identify and discuss the key services that can be used to communicate on the internet. The children can recognise the main components (hardware) which allow computers to join and form a network.	The child understands and can discuss the online safety implications associated with different methods of communication.
(CS) Online: Appreciate how [search] results are selected and ranked				






Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	I can improve the quality and presentation of my work using editing and formatting techniques.	The child understands that they need to consider the user/the person reading their work and make appropriate improvements. The child can use basic formatting tools e.g. they can change the background colour, size of the text, font and add images.	The child is able to produce documents and presentations with increasing competence. The child can confidently use different layouts and effects (such as text box, columns, tables, justification, borders, background colour) to refine and improve their work. The child can use features such as; add slide transitions and animation effects. The child can use a keyboard confidently and make use of a spellchecker to write and review their work.	The child can give constructive feedback to friends to help them improve their work and refine my own work. The child understands the different types of media content that can be added to a document. The child can use photos, video and sound to create an atmosphere when presenting work to different audiences.
	I can create with technology. E.g. Video, animation, 3D	The child with support can create content with unfamiliar apps or technology. The children with support can share digital content.	<p>The child is confident using a range of software/apps to create content. The child understands what apps may be required to complete a task. E.g. Microsoft Word to create a document or iMovie to edit a video clip. The child demonstrates creativity and independence while using unfamiliar apps or technology to create content. The child understands the need to create a plan/storyboard when producing digital content.</p> <p>For example: The child can create a well presented digital document to retell a story. The child can plan an animation using a storyboard. They can combine a mixture of text, graphics and sound to share an idea or learning. The child can use an art package using various tools to create their own illustrations.</p>	The child is a confident user of technology. The child recognises that similar icons/features are present within apps and that these are consistent across different types of applications. E.g. the export/save button, the add image button or record button. The child is able to create with a range of software/apps. E.g. create films, animations, manipulate images, create illustrations, green screen etc.
(IT) Online: Use search technologies effectively	I can use a search engine and I am aware that not everything I read online is correct. (Online Bullying)	The child understands the layout of a search engine and can enter keywords in the search field. The child can identify key words to use when searching safely on the World Wide Web.	The child can search for and use information from a range of sources. The child can make notes from information found on websites to present their findings. The child knows that not all sources of information including websites are accurate and can check information using a different sites.	The child can use more complex search criteria to narrow down their searches.






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Technology in the Real World Understand the opportunities [networks] offer for communication and collaboration	I can collaborate online to create digital content.	The child can use a shared space online to save and share their work. The children can discuss key concepts relating to online safety and can use a basic concept mapping app such as Popplet or Padlet to show their understanding.	The child can tell you whether a resource, document or app they are using is on the Internet, the school network or their own device. The child can use computing to communicate and collaborate. E.g. the child can post to a class blog and explain how to use it correctly with others. The child understands certain documents can be shared and worked collaboratively. E.g. Google Docs. The child can take part in collaborative activities e.g. contribute to a class / school blog, share information with link class in another school to find out about a different locality.	The child can comment positively and respectfully when using collaborative online tools. The child can help others to understand the importance of online safety. The child can create a hyperlink to a resource on the World Wide Web in order to share it.
(DL) Media & Content: Be discerning in evaluating digital content	I can evaluate information presented to me to make informed choices about what is Fake News.	The child when presented with both true and Fake News can choose which news stories could be fake. The child can discuss examples of Fake News based on the class lessons. The child understands the different ways data can be captured and presented online.	The child can explain what Fake News is and outline the purpose of Fake News. The child understands there are a range of sources where information can be sourced and that Fake News can be found on all media. E.g. the internet, newspapers, journals, transcripts from radio or TV programmes, leaflets and photographs. The child can outline pointers that may suggest an article or piece of information may not be true. The child understands that data can be manipulated to make Fake News appear to be true.	The child knows why it is important they know how to check information to protect themselves against Fake News. The child knows that not all sources of information including websites are accurate and can check information using different sites. The child can appraise selected webpages for credibility and information at a basic level. The child knows what plagiarism is and when they can use the work of others.



Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I can describe strategies for safe and fun experiences in a range of online social environments and I'm respectful to others online. (Online Relationships)	The child can outline their digital life in terms of the apps, services and websites they use. The child can explain the importance of using the internet safely and responsibly.	The child can talk about the potential online risks and ways they can protect themselves and friends from harm online. The child can discuss the safety features of websites and apps. E.g. how to block or report content/user. The child knows they should report concerns to a trusted adult.	The child can explain what it means to be a good digital citizen and how they should be responsible and respectful online.
	I understand that people may have a different online identity to that in real life and I'm able to interact with others. (Self Image)	The child understands that not everyone online is who they say they are and can't always be trusted.	The child understands that the Internet is a great place to develop rewarding relationships. They understand not to reveal private information to a person they know only online. The child understands that friends/followers profiles may not reflect the truth about their real lives.	The child knows that some communication online could be spam or from online bots (not real people). The child can discuss the forms it takes, and they can identify strategies for dealing with suspicious messages/emails.
	I am aware others can find information out about me by searching online. (Online Reputation)	The child knows that anything they post online can be seen by others. E.g. if they write a comment on a YouTube video, other users can read this.	The child can explain the term 'digital footprint'. The child knows that the information they put online leaves a digital footprint or "trail." This trail can be big or small, helpful or hurtful, depending on how they manage it. The child can search for their own name and usernames in Google to test their digital footprint.	The child can discuss how to manage their online reputation.
	I know which technologies are used for online bullying and I am considerate of others when posting myself. (Online Bullying)	The child can discuss online bullying and the apps/websites where it may take place.	The child can discuss how they should act appropriately & respectfully online. The child knows how to deal with online bullying.	The child when given specific online scenarios can discuss how to comment positively and respectfully online.






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I understand the impact technology can have on my health, well being and lifestyle. (Health well being)	The child can describe their use of technology inside and outside of school.	The child understands how photos can be altered digitally. The child can consider the creative upsides of photo alteration, as well as its power to distort perceptions of beauty and health. The child can discuss the positive and negative effects technology may have on their health.	The child can explain why they should choose websites and games that are appropriate for their age. The child can help their friends make good choices about the time they spend online.
	I am aware that some people want to access my data and can take appropriate measures to ensure this doesn't happen. (Privacy and Security)	The child knows how and why to keep their personal information private. The child can display themselves appropriately online, e.g. avatar instead of a profile picture, appropriate username and no personal information.	The child can talk about why they need to ask a trusted adult before downloading files and games from the Internet. E.g. virus and malware. The child can choose a secure password when they are using a website or app. The child can explain why using an avatar and online name is advisable.	The child can explain what makes a secure complex password and give an example. The child can discuss how they can protect themselves from online identity theft.
	I understand the need for copyright and the consequences of ignoring it. (Copyright)	The child can explain what copyright is and give an example based on lesson activities.	The child can explain why copyright laws exist. The child knows that copying the work of others and presenting it as one's own is called plagiarism. The child can use a copyright free image gallery, or they can change the search criteria in Google images to copyright free.	The child can explain when and how it's ok to use the work of others (different types of copyright).






Mandatory Skills	
1	I can make a QR codes that links to my own work.
2	I can film and produce a short video.
Computer Science	
3	I can decompose a problem, design an algorithm and use this to write a program.
4	I can design and write a program linked to physical systems and sensors.
5	I can use variables, conditional statements, procedures & repeat commands to improve programs.
6	I can use logical reasoning to detect & debug a program.
7	I can explore networks and internet traffic.
8	I can translate binary numbers to decimal.
9	I can create a basic web page using HTML.
Information Technology	
10	I can record and produce a podcast / audio clips.
11	I can use unfamiliar technology to create content.
12	I can improve the quality and presentation of my work.
13	I can use a spreadsheet to collect and record data.
14	I can use a search engine and I am aware that not everything I read online is correct.
Digital Literacy	
15	I can access school email and can send emails to classmates and teacher.
16	I can create a subject specific vlog and understand the potential risks of sharing content online.
17	I can collaborate to develop & improve work.
18	I can search for someone online and create a summary report about that person.
19	I understand the need for copyright and the consequences of ignoring it.
20	I am aware that there are people online who may try to upset me and my group of friends. I make a positive contribution to my online community.
21	I understand the impact online bullying can have and I know what to do if I am the victim or I witness online bullying.
22	I understand the impact technology can have on my health, well being and lifestyle.
23	I can create a strong password and understand the real cost of some apps.
24	I am aware that my identity can be copied by other users and take appropriate measure to minimise the risk of this happening.






Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can make QR codes that links to a piece of my own work.	The child can scan QR codes and discuss what happens as a consequence. The child knows that QR stands for Quick Response.	The child can create a QR Code. The child knows that they need to use an app or website to create a QR code. The child can upload a piece of work to a cloud or blog. The child knows what a URL is and how to copy it. The child can print out the QR code and test it.	The child can use the setting within the app or website to change the appearance of the QR code they create.
	I can film and produce a short video with elements such as text, images, narration and music.	The child can film a series of short clips either using an iPad or video camera.	The child can use technology to tell a story. The child understands basic elements of filming such as quality of sound and lighting. The child can edit video clips e.g. trimming and re-ordering clips. The child can add a voice-over and / or background music to a video. The child can add titles and credits to their video.	The child can improve their video with editing tools and effects e.g. blur, filters, speed up/slow motion etc. The child can create a separate audio recording or piece of music in another app and then add it to their video.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Computational Thinking: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program.	The child understands that decomposition means to break a problem into smaller parts. The child understands that using an algorithm can help plan a solution to a problem. The child recognises that using algorithms will also help them solve problems in other learning such as Maths, Science and Design and Technology. The child can write an algorithm for a specific outcome without reference to code. The child with support can use their algorithm to write a simple program.	The child can independently decompose problems and plan, write and test their algorithms and programs, detecting and correcting errors as needed. E.g. what am I trying to do? What have I done already that might help? What do I think the program should be doing? What is it actually doing? Is there more than one solution? How can I test my solution? The child can plan an algorithm that uses coding structures for event handling, selection ("If" and "Then") and repetition (loops). The child can turn their algorithm into a program with a specific outcome.	The child uses logical thinking, imagination and creativity to extend or improve an algorithm or program they are planning. The child is willing to experiment and refine their programs. E.g. the child can design and create a game incorporating variables to increase programming possibilities, testing and correcting errors as they go. The child can refine a procedure using repeat commands to improve a program. They can change an input to a program to achieve a different output.
	I can design and write a program linked to physical systems and sensors.	The child can design and write a simple program linked to physical systems and sensors. E.g. the child's program can turn a light on when when a button is pressed.	The child can design and write a more complex program that controls or simulates physical systems and sensors with multiple outcomes. E.g. the child's program can turn a light on and make a sound when triggered by a sensor.	The child uses logical thinking, imagination and creativity to extend or improve an algorithm or program they are planning. The child can talk about how a computer model can provide information about a physical system and how this is useful in the real world.
(CS) Coding: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	I can use variables, conditional statements, procedures and repeat commands to improve my programs/game.	The child with support can write a simple program containing; variables, conditional statements, procedures and repeat commands.	The child can create a complex game within Scratch or other block based coding app that uses variables, event handling, selection ("If" and "Then"), procedures and repetition (loops) to increase programming possibilities.	The child can confidently discuss their use of variables, event handling, selection ("If" and "Then"), procedures and repetition (loops).
(CS) Logical Reasoning: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	I can use logical reasoning to detect and debug mistakes in a program.	The child can use logical reasoning to make predictions about outcomes and errors in code. The programs do not have to be written originally by the child.	The child after the code has been run, can give a well-thought-through explanation of any errors they identify in program code. The child can suggest how this can be debugged/fixed.	The child can use logical reasoning to identify errors before the code has been run e.g. the child can review a program with errors and identify them by looking at the code. The child can debug an error and suggest how improvements could be made in a program.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Networking: Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web	I can explore networks and internet traffic.	The child understands that the internet and web are different. The child understands that the internet is made up of connected devices. The child understands that the web is made up of billions of web pages.	The child can explain about the hardware that connects computers. The child knows how data is transmitted via the internet. The child can describe different parts of the Internet and services. The child can use a Trace Route tool to create a map of the sites they visit.	The child can discuss the implications of how networks work on internet safety. The child can explain networking terms such as IP address, ping, ipconfig and tracer commands.
	I can translate binary numbers to decimal.	The child can recognise binary code. The child understands binary is made up of 1s and 0s.	The child can explain that binary is a way of sending data/information between computers. The child can convert denary numbers into binary numbers.	The child can explain why and how computers use binary. The child can convert characters into binary numbers.
	I can create a very basic web page using HTML.	The child can say what HTML stands for. The child understands that HTML is a way of laying out a page. The child can list different types of webpages found on the internet.	The child can create a basic web page using HTML, explain tags and insert media. The child can identify what types of digital content can be used in websites. The child can explain the basic elements that make up a website e.g. head and body.	The child can create a simple website using an app such as WordPress. The child understands the internet safety implications of publishing a website.
(CS) Online: Appreciate how [search] results are selected and ranked				

Year 5 Progression - Information Technology






Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	I can record and produce a short audio podcast and understand basic elements of audio editing.	The child can explain what a podcast is and where they can listen to/download them. The child understands the equipment they need to record audio. E.g. microphone, computer/iPad, a quiet place and an appropriate app.	The child can produce a well scripted podcast plan including elements that they may need such as jingles. The child can record spoken audio clips using an app. The child can edit, enhance and sequence audio clips. The child can add additional elements such as background music, sound effects or jingles. The child can save/share their finished podcast to the appropriate place. The child can collaborate with others to develop and improve work.	The child understands the internet safety implications of publishing content online. The child can evaluate an appropriate online or offline tool to create and share ideas. The child can think through the process and predict potential problems e.g. they need a quiet place to record. The child can compose their own music on a computer/iPad and save/share to the appropriate place for use in their podcast.
	I can use unfamiliar technology to create content and share my ideas. E.g. Augmented Reality, VR, 3D, digital music etc.	The child is able to evaluate new and unfamiliar technologies and discuss possible uses. The children can select the right program/app to complete an IT or creative task.	The child can use the skills they have already developed to create content using unfamiliar technology. The child can create content using new technology. E.g. Augmented reality, virtual reality, 3D, digital music etc.	The child attempts to go beyond the basic requirements of the lesson and use the more advanced tools. The child can present their work and is comfortable discussing the tools within new technology.
	I can improve the quality and presentation of my work using editing and formatting techniques.	The child can create a basic presentation or word processing document. The child can add multimedia elements, e.g. images, video, sounds or animation.	The child can create documents and presentations with a common design theme. The document should provide consistency of font and style. The child can use align text left, right and centre to improve the presentation of text. The child can source, store and combine images from cameras or the internet for a purpose. The child when creating a presentation can trigger animations or link to other slides when objects are pressed. The child can use text, photo, sound and video editing tools to refine their media/content.	The child can independently select, use and combine the appropriate technology/app tools to create effects that will have an impact on others. E.g. edit pictures using various tools / photo-manipulation software. This may involve using more than one app to create content. The child can independently review and improve their own work and support others to improve their work too.
	I can use a spreadsheet/database to collect and record data.	The child with support can use a data program such as Excel/Numbers/Sheets to collect simple data that supports an investigation. E.g. The child can add text and numbers to spreadsheet cells. The child can change the appearance of cells, e.g. size, borders and colours. The child can present data in a graph. The child can answer questions relating to their graphs and pose their own questions.	The child can use a spreadsheet and database to collect and record data. The child can add simple formulae: +, -, *, /. The child can copy and paste formulae within a spreadsheet. The child can present sets of data in different graphical forms, discussing and evaluating which layout is best. The child can insert a graph in a document / presentation to share findings with others. The child understands the difference between discrete and continuous data and can give an example of both. The child can search a database using different operators to refine my search. The child can use information in a database to create a graph in order to answer questions.	The child can explore existing spreadsheets to see how they can be changed and used. The child can use simple functions, e.g. SUM, AVERAGE, to solve problems. The child can create more complex spreadsheets to model mathematical problems and to solve real life problems e.g. budgeting or funding a class trip. The child can produce a presentation that acts as a branching database to classify a set of items. The child can design and create a database. e.g. favourite actors and films, TV programmes and actors, football teams and players / managers, countries and key features / things of interest.
(IT) Online: Use search technologies effectively	I can use a search engine and I am aware that not everything I read online is correct. (Online Bullying)	The child can recognise different browsers and they can label the icons and functions. The child can use a search engine to find appropriate information. The child can describe the different parts of a webpage, including the elements such as adverts.	The child can use complex searches and advanced tools to find, select and use information. The child can check the reliability of information on the internet. The child can recognise and evaluate different types of information and media they find on the web. The child can take steps to find out who the information on a webpage belongs to.	The child is aware that anybody can publish information online and identify examples such as blogs, YouTube, etc. The child can discuss simple steps they can take to help ensure information is accurate and reliable such as using multiple sources and identifying reliable sources such as the BBC, National Museums, etc.



Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Technology in the Real World Understand the opportunities [networks] offer for communication and collaboration	I can access school email and can send emails to classmates and teacher.	The child can discuss the benefits of online communication. The child can describe different parts of the Internet e.g. including services like email. The child can sign in to an online account. The child understands how and why to create secure passwords for online accounts.	The child can discuss different online communication tools/apps and how they could be used for different purposes. The child can exchange ideas and information with others using email. The child can send and reply to emails using an appropriate and respectful tone. The child understands the difference between online and face-to-face communication. The child knows how to email and add / open attachments.	The child knows not to open messages and attachments from strangers. The child knows what spam is, and how to deal with it. The child can discuss scam emails/phishing and what to look for. The children can discuss how to unsubscribe or block emails from other accounts that they do not wish to receive anymore.
	I can create a subject specific vlog and understand the potential risks of sharing content online.	The child can explain what is meant by the term vlogger. The child can give examples of successful vloggers. The child can critically analyse and discuss the positives and negatives of being a vlogger.	The child understands what equipment will be required to create and share video content. The child can edit a video/vlog. The child can construct a persuasive argument for or against becoming a vlogger. The child understands that information they put online leaves a trail, or what is called a digital footprint.	The child can identify the potential risks when putting content online. The child can explain what a digital footprint is and be aware of potential consequences of this. The child can conduct a search of themselves and explore their own digital footprint.
	I can collaborate with others to develop and improve work.	The child can discuss the importance of collaboration and give examples of this from the real world.	The child can review and improve their own work and support others to improve their work while working in a group. The child can listen to other points of view and give constructive feedback.	The child can discuss strategies for working well as a group.
(DL) Media & Content: Be discerning in evaluating digital content	I can search for someone online and create a summary report about that person. I understand that judgements are made about people based on whats online about them. (Online Reputation)	The child can use a search engine / the internet to productively search for information and resources to support work in other subjects e.g. they are able to search for information about an individual. The child is aware that anybody can publish information online and identify examples such as blogs, YouTube, etc.	The child can use advance search tools to refine their web searches. The child knows the information found on some sites will be biased. E.g. newspapers with political stance. The child is aware they should always question the reliability and plausibility of information they find. The child can select trusted and suitable websites to find out information.	The child can discuss in detail the steps required to fact check information and help ensure it is accurate and reliable such as using multiple sources and identifying reliable sources such as the BBC, National Museums, etc.
	I understand the need for copyright and the consequences of ignoring it. (Copyright)	The child can explain what copyright is and how to find out who the information on a webpage belongs to.	The child knows that images and text found on websites is subject to copyright. The child knows how to credit the use of websites in their work and why this should be done. The child can produce a list of websites they have used as reference for work produced. The child understands the legal and moral reasons not to plagiarise or infringe copyright, the impact it can have on the creator of the content and know legal download sites for video and music.	The child knows what plagiarism / copyright are and understand people often plagiarise without thinking by cutting and pasting information or images. The child is aware of copyright and can modify searches to retrieve images that can be used under Creative Commons licence e.g. copyright free or able to use in Education for non-profit.



Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I am aware that there are people online who may try to upset me and my group of friends. I make a positive contribution to my online community. (Online Relationships)	The child can discuss negative online behaviours such as bullying, trolling, griefing and harassment.	The child can demonstrate and explain the importance of communicating kindly and respectfully. The child can explain why they need to protect themselves and their friends and the best ways to do this, including reporting concerns to an adult.	The child can discuss how they manage the risks associated with the digital world. E.g. reporting, screen time, age-appropriate apps/sites, over sharing etc.
	I understand the impact online bullying can have and I know what to do if I am the victim or I witness online bullying. (Online Bullying)	The child can explain what online bullying (cyberbullying) is and discuss empathy and the effects of online bullying.	The child knows that anything they post online can be seen, re-shared, re-used and may have a negative effect on others. The child can explain why they need to protect themselves and their friends and the best ways to do this, including reporting concerns to an adult. The child is familiar with the relevant websites and support lines if they need to seek advice or help.	The child can discuss what to do if they experience online bullying. The child can discuss how to report or block users within the games, apps and websites they use and make reports to external agencies including CEOP and ChildLine in conjunction with a trusted adult.
	I understand the impact technology can have on my health, well being and lifestyle. (Health well being)	The child can give simple examples of how technology could impact their health. E.g. talk about the dangers of spending too long online or playing a game.	The child understands the 'Digital 5 a Day' plan and they need to have a balanced approach to their use of technology. The child can discuss the positive and negative effects technology may have on their health. E.g. discuss the importance of choosing an age-appropriate website or game.	The child can discuss how they manage their own digital usage. E.g. how they get enough exercise, limit their screen time and get enough sleep etc.
	I can create a strong password and understand the real cost of some apps. (Privacy and Security)	The child understands they need to protect their passwords and other personal information.	The child can outline what makes a secure username and password. The child can explain why it is important not to enter personal information on websites or in apps that appear suspicious.	The child can explain how to avoid being tricked by scammers online. E.g. Phishing emails. The child can explain why an app may be free but have in-app-purchasing and what that is.
	I am aware that my identity can be copied by other users and take appropriate measure to minimise the risk of this happening. (Self Image)	The child can explain what an online identity or internet persona is, e.g. social identity in online communities and websites (Facebook, Instagram, YouTube etc) in including photos and posts.	The child understands that their identity is one of their most valuable assets. The child understands if someone's identity is stolen they can lose money. The child understands why people set up fake accounts or copy others identities.	The child can discuss some simple steps to avoid having their identity copied. E.g. the child knows the difference between http and https and that https are more secure sites. The child can explain why they need to protect their computer or device from harm. E.g. virus or malware.



Year 6 Activities




Digital Literacy	Computer Science	Information Technology	Byte Size & Fun	Mandatory Skills
Y6.1 Online Safety Dilemmas: In this activity the children will become online safety ambassadors. They will be given modern day dilemmas. Dilemmas that children face everyday online and asked to produce a series of “what to do” videos to explain how to cope online. Assessment: 1, 2, 8, 11, 12, 13, 14, 22	Y6. 2 Chicken Run - Crossy Roads: The children will create their own version of the popular app Crossy Roads using visual coding. They will learn about decomposition and how to evaluate games. Assessment: 3, 4, 6	Y6.3 VR Worlds: The class will explore Virtual Reality (VR) and how it can be used in the classroom. The children will also build their own VR world. Assessment: 2, 7, 9, 10, 11	Y6.4 Maths: Solve IT Club: Children will produce their own digital guide to being a maths genius. Making videos and animations showing how to solve various maths problems. This is an opportunity to connect with other schools. Assessment: 1, 2, 9, 10, 11	1 I can collaborate to create digital content. 2 I can create a consistent design for my presentation, and present to others.
Y6.5 My Online Life: This activity takes place over the course of the term. It covers all the DFE statutory requirements for digital literacy and online safety. Assessment: 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22	Y6.6 Coding Playground: Children will be introduced to text-based programming and how apps are made. They will complete self paced programming challenges. Finally the class can explore connecting programable toys and drones. Assessment: 4, 5, 6	Y6.7 Money: The children will explore money, stocks and shares through a series of challenges and games. Creating a spreadsheet and digital book to explain the importance of understanding how money works. Assessment: 2, 9, 10, 11,	Y6.8 Quiz Show Host: The children will research questions and create quizzes using a variety of online apps. Finally the children must present their quiz show to the class. Assessment: 1, 9, 10, 11	Computer Science 3 I can design, plan & create a complex programs. 4 I can test, debug and modify a program to improve it. 5 I can write a program using a text based programming language. 6 I can use logical reasoning to detect and correct errors in algorithms and programs. 7 I understand how computer networks work, including the internet. 8 I can talk about the way search results are selected and ranked.
				Information Technology 9 I can create and combine a range of media in order to produce digital content. 10 I can improve the quality and presentation of my work using editing and formatting techniques. 11 I can create a digital storyboard to plan a project or investigation. 12 I can use a search engine and I am aware that not everything I read online is correct and that other people may be attempting to influence my opinions.
				Digital Literacy 13 I can explain how to protect my computer or device from harm on the Internet. 14 I understand the need for copyright and the consequences of ignoring it. 15 I support my friends to protect themselves and make good choices online, including reporting concerns to an adult. 16 I am aware of the ways in which the media can shape our ideas about gender. 17 I am aware that if I need help I keep asking for it until I get help. 18 I am aware of the need for positive online relationships and I am mindful of others feelings at all times 19 I understand I need to create a positive online reputation. 20 I know how to capture evidence of online bullying and how to report it. 21 I know how to keep my data private and secure. 22 I understand the impact technology can have on my health, well being and lifestyle.

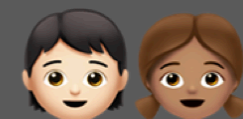
Coming Soon




Coming Soon

Year 6 Progression - Mandatory Skills






Computing Strand: Mandatory Skills	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
Essential: Age appropriate skills for the use of core devices and applications within their setting.	I can collaborate online to create digital content.	The child understand that certain documents/ apps contain the function to live collaborate in order to create content. The child can discuss the importance of collaboration and give examples of this from the real world. The child is able to sign in to an online account such as Google, Apple or Microsoft.	The child can contribute useful ideas to a partner or group. The child can share a document with another child in order to collaborate. The child can review and improve their own work and support others to improve their work while working in a group. The child can listen to other points of view and give constructive feedback.	The child can discuss strategies for working well as a group. Then child can add notes to a shared document. The child can encourage others to share their ideas. The child can lead a group and include everyone in the group in tasks.
	I can create a consistent design for my presentation, and present to others.	The child can independently create basic content that support their learning e.g. word processing documents, spreadsheets or presentations.	<p>The child can demonstrate familiarity and confidence when using common office apps e.g. Microsoft Word, Excel, PowerPoint, Text Edit, Notepad, Apple iWorks and Google Docs.</p> <p>The child can create, edit, save, and publish written work independently. The child can troubleshoot basic errors and use shortcuts. The child uses effective language and compelling graphics to compliment their digital work.</p>	The child can create documents, spreadsheets and presentations for a variety of audiences that have a consistent design and purpose, considering the appropriateness of text and formatting choices. The child can present their work to others and consider improvements based on feedback.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Computational Thinking: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	Design, plan & create a complex programs.	The child is able to think through the steps or rules of a problem and design a basic algorithm which could be turned into a program. The child can build a sequence of blocks in Scratch. The child can use conditional statements in Scratch or other visual coding apps.	The child when attempting a programming challenge can deconstruct the problem into smaller steps, recognising similarities to solutions used before. The child can create an algorithm and turn their designs into a program. The child's program incorporates variables, procedures and different forms of input and output.	The child when designing an algorithm will be refining and looking for the best, most efficient solution. The child can recognise when they need to use a variable to achieve a required output. The child can use a variable and operators to stop a program. The child can explain how decomposition / abstraction can be used to solve complex problems.
	I can test, debug and modify a program to improve it.	The child is aware that they need to test the programs they create. The child can explain how testing and debugging can lead to improved programs.	The child is repeatedly experimenting, making, testing and debugging their programs. The child can describe how they overcame problems to arrive at a solution.	The child can develop, debug and test more than once until a product is refined. The child is able to learn from setbacks and is happy attempting to solve difficult problems.
(CS) Coding: Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	I can write a program using a text based programming language.	The child with support can execute common commands using a text-based language e.g. Python/Javascript/SwiftPlayground.	The child can persevere when solving difficult problems even if the solution is not obvious. The child can execute and adapt common commands using a text-based language e.g. Python/Javascript/SwiftPlayground.	The child can describe how they overcame problems to arrive at a solution when writing programs. The child recognises that there is often more than one way to solve a problem.
(CS) Logical Reasoning: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	I can use logical reasoning to detect and correct errors in algorithms and programs.	The child can use logical reasoning and attempt to explain each of the steps in an algorithm or program.	The child can use logical reasoning to detect and correct errors in an algorithm and program. The child can recognise that there is often more than one way to solve a problem in an algorithm or program.	The child is able to adapt a solution from one problem to solve something else. The child can explain how they adapted a solution to solve a different problem.






Computing Strand: Computer Science	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(CS) Networking: Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web	I understand how computer networks work, including the internet.	The child can explain in basic terms what a network is and that the internet is a large network of connected computers.	The child can describe how information/data is transported on the Internet and between computers using packets and IP addresses. The child can describe the opportunities computer networks and the internet offer for communication and collaboration.	The child can understand the difference between the internet and an internet service, e.g. the world wide web, email, VOIP etc. The child is able to describe using network vocabulary the way a classroom device connects to the internet and web. E.g. the child can discuss wireless, wired, routers, servers and networks.
(CS) Online: Appreciate how [search] results are selected and ranked	I can talk about the way search results are selected and ranked.	The child understands that the internet is made up of billions of web pages. The child understands that search engines help us find the information we want by indexing web pages and sorting them.	The child can use search engines effectively, and knows how search results are selected and ranked. The child can use advanced search tools to improve their searches.	The child can explain how algorithms can be used to sort data.






Computing Strand: Information Technology	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(IT) Harnessing Technology: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	I can create and combine a range of media in order to produce digital content.	The child can explain why they select a particular online tool or app for a specific purpose. E.g. an art app to create an illustration. The child can independently create a new document (word processing, spreadsheet, presentation or digital book) and insert media such as images, video and links.	The child can confidently identify the potential of unfamiliar technology to increase their creativity. E.g. the child can make predictions about what software / apps can do. The child can create a well designed document and create various media elements themselves. E.g. make a short video clip, animation, illustration, take photographs, record audio or insert graphs.	The child is aware of a range of apps and software and uses. The child can independently select and use the appropriate multimedia tools/apps, and combine these for a given purpose with confidence to produce an end product. E.g. a digital book containing various media elements. The child can produce digital content that has a consistent theme and shows they thought about design and the impact on their audience.
	I can improve the quality and presentation of my work using editing and formatting techniques.	The child is able to produce a digital document to present their ideas, data or understanding of a subject. The child can apply basic editing and formatting to improve their digital work. The child can create digital work with a common design theme. The document should provide consistency of font and style. The child can use align text left, right and centre to improve the presentation of text.	The child can source, store and combine copyright free images from cameras or the internet. The child when creating a presentation can trigger animations or link to other slides when objects are pressed. The child can add tables and graphs. The child can use text, photo, sound and video editing tools to refine their media/content. The child can independently select, use and combine the appropriate technology/app tools to create effects that will have an impact on others. E.g. edit pictures using various tools / photo-manipulation software.	The child can use more than one app to create content. The child can independently review and improve their own work and support others to improve their work too. The child can use advanced features within apps. E.g. create a spreadsheet for a specific purpose, incorporating different features of design, functions and formula. The child can talk about audience, atmosphere and structure when creating digital content.
	I can create a digital storyboard to plan a project or investigation.	The child can plan and create an animation for a given purpose. The child understands that a storyboard is a sequential breakdown of events. The child can create a digital storyboard to plan a project/ investigation such as an animation or film.	The child can create a digital storyboard with a complete narrative of the project or investigation. The child can produce a story that contains additional details such as characters in the story, dialogue, time, camera details and tools that should be used. The child can storyboard next steps such as editing an animation to improve it / make it more realistic.	The child can make predictions about problems they may encounter and how they will solve them. The child includes details about sound recording and placing it over an animation. The child includes details about adding titles and photos into their animation.
(IT) Online: Use search technologies effectively	I can use a search engine and I am aware that not everything I read online is correct and that other people may be attempting to influence my opinions. (Online Bullying)	The child can recognise different browsers and they can label the icons and functions. The child can use a search engine to find appropriate information. The child can describe the different parts of a webpage, including the elements such as adverts.	The child can use complex searches and advanced tools to find, select and use information. The child can check the reliability of information on the internet. The child can recognise and evaluate different types of information and media they find on the web. The child can take steps to find out who the information on a webpage belongs to. The child is aware that information and news can be bias / only presenting one side of an argument or trying to sell an idea or product.	The child is aware that anybody can publish information online and identify examples such as blogs, YouTube, etc. The child can discuss simple steps they can take to help ensure information is accurate, impartial and reliable such as using multiple sources and identifying reliable sources such as the BBC, National Museums, etc.






Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Technology in the Real World Understand the opportunities [networks] offer for communication and collaboration	I can explain how to protect my computer or device from harm on the Internet.	The child understands viruses and malware are programs that can attack computers, tablets, phones and other digital devices.	The child understands that viruses are just one type of malware. Other types include spyware, worms and trojans. The child knows these are small programs designed to cause trouble by gaining access to your device. Viruses can copy your personal data or slow your device down. A virus spreads by duplicating and attaching itself to other files. The child knows that anti-virus software can help protect devices from infection. The child understands the terms antivirus, firewall, security updates, pop up blocker, scams, phishing, HTTPs, location based settings, in app purchasing, trolling, filtering, malware, etc.	The child can discuss the rules to protect themselves and their devices from harm. E.g. avoid suspicious websites, there is a difference between http and https, don't open emails from strangers (phishing), don't download music and videos from unfamiliar websites.
(DL) Media & Content: Be discerning in evaluating digital content	I understand the need for copyright and the consequences of ignoring it. (Copyright)	The child can explain what copyright is and how to find out who the information on a webpage belongs to.	The child knows that images and text found on websites is subject to copyright. The child knows how to credit the use of websites in their work, and why this should be done. The child can produce a list of websites they have used as reference for work produced. The child understands the legal and moral reasons not to plagiarise or infringe copyright, the impact it can have on the creator of the content and know legal download sites for video and music. The child understands that breaking copyright and downloading music, videos and games illegally can get them in trouble with the police or fined.	The child knows what plagiarism / copyright are and understand people often plagiarise without thinking by cutting and pasting information or images. The child is aware of copyright and can modify searches to retrieve images that can be used under Creative Commons licence e.g. copyright free or able to use in Education for non-profit.



Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I support my friends to protect themselves and make good choices online, including reporting concerns to an adult.	The child can give tips on how to stay safe when playing online games, communicating and using technology. The child understands if they have any questions or concerns they should talk to a trusted adult immediately. The child can list trusted adults in their life.	The child can discuss the advice they would give friends about making good choices online. E.g. protect passwords and other personal information, the consequences of sharing too much about yourself online, what online bullying is and how to report any concerns, the consequences of spending too much time online or on a game, ensure you have approval from a trusted adult before using a webcam or send photos of yourself to other people online and how to check the reliability of websites.	The child can discuss the consequences of making poor online choices. E.g. Online bullying, Inappropriate comments (racially or sexually orientated), uploading inappropriate material (adult / illegal / anti-social), accessing inappropriate sites (anti-social or illegal behaviour / adult content) and breaching copyright laws.
	I am aware of the ways in which the media can shape our ideas about gender.	The child can explain what the term 'media' means, with examples. The child can give example of gender stereotypes E.g. boys are smarter than girls or certain jobs are better for men and others for women.	The child can discuss the way men and women can be stereotyped in movies and TV. The child can conduct a survey and gather data about other children's notion of gender. The child can discuss stereotypes in advertising.	The child can identify movies and shows with non-stereotyped characters -- for example, female characters with realistic body types and non-aggressive male characters. The child can create a simple presentation to show others.
	I am aware that if I need help I keep asking for it until I get help. (Self Image)	The child understands if they have any questions or concerns they should talk to a trusted adult immediately. The child can list trusted adults in their life they could ask for help.	The child understands that if they have any kind of negative online experience they should keep a record/evidence. The child knows to seek help from a trusted adult and not to try and deal with online situations on their own. The child can discuss how to block and report inappropriate comments or behaviour online.	The child knows and can list the websites and agencies they can contact in case they need help.
	I am aware of the need for positive online relationships and I am mindful of others feelings at all times. (Online Relationships)	The child can explain the consequences of not communicating kindly and respectfully online.	The child can discuss how to maintain healthy positive relationships with others while online.	The child can discuss the importance of empathy and how this relates to online communication.



Computing Strand: Digital Literacy	Statement	What to Observe in Learning		
		Working towards expectations 	Meeting expectations 	Exceeding expectations 
(DL) Online Safety: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	I understand I need to create a positive online reputation. (Online Reputation)	The child can explain what a 'digital footprint' is and what impact it may have on them in the future.	The child understands that any information about themselves shared online by them and others could be accessed by anybody in years to come and that this 'trail' of digital information creates a 'digital footprint' about them. The child can describe positive and negative implications of anybody accessing their 'digital footprint' now and in the future.	The child can describe what steps they can take to create a 'positive online image' including defining acceptable and unacceptable online behaviour and the benefits this will have to them now and in the future.
	I know how to capture evidence of online bullying and how to report it. (Online Bullying)	The child understands the causes and consequences of online bullying. The child understands the first step to stopping bullying is to tell a trusted adult.	The child can create a screenshot/screencast as evidence. The child can identify the different types of online bullying. The child understands how to use blocking / unsubscribing / reporting mechanisms if you come across online content / interactions that are unsolicited or make you feel sad, scared, threatened or confused.	The child can discuss behaviours and strategies to prevent and stop online bullying. The child knows and can list the websites and agencies they can contact in case they need help.
	I know how to keep my data private and secure. (Privacy and Security)	The child understands that to remain safe and secure online you need to ensure the devices you use to connect online are suitably secure and that you are using a secure connection including games consoles, tablets and mobile phones. E.g. don't connect to insecure public wifi.	The child knows how to create and regularly update strong passwords and not to use the same password for all accounts and devices. The child recognises the need to ensure all technology they use is secure. The child understands the terms antivirus, firewall, security updates, pop up blocker, scams, phishing, HTTPs, location based settings, in app purchasing, trolling, filtering, malware, etc.	The child can discuss privacy / security setting on accounts and devices. The child can explain what steps they could take to ensure devices and connections are secure.
	I understand the impact technology can have on my health, well being and lifestyle. (Health well being)	The child is aware of the amount of time they are spending in front of a screen and the impact this may have on their physical and mental health. Describe non-screen activities they can engage in to ensure they have a balanced lifestyle.	The child can describe some of the effects that too much screen time could have on them. The child understands the need to have a balanced lifestyle and be aware of the impact of too much 'screen time'. The child understands what games / internet addiction is. The child understands PEGI ratings and other criteria to identify age appropriate games. The child is able to make informed judgements on the suitability of the content for a given age range.	The child can outline what a balanced lifestyle might look like. The child can create and apply their own rating system to games and online content with no PEGI rating. The child can explain why social media apps and some websites have age restrictions and why these might be in place.



Year Group	Key Vocabulary: This is a guide to key computing vocabulary for year groups or Key Stage.
Foundation	Instructions, camera, robot, QR code, sequence, share, technology, control, Google, information, internet, algorithm, computer, iPad/tablet, app (application), keyboard, button, printer, save, zoom.
Year 1	3D, program, debug, design, emoji, search, selection, website, personal information, link, menu, icon, trusted adult, online, sign in, game, wireless (Wifi), online bullying, landscape, portrait, Bluetooth, download, frame, processor, green screen, hard drive, illustration, log in, tool, send, follow, digital, communicate.
Year 2	Browser, computer networks, data, computational thinking, execute/run, input, output, software, World Wide Web (WWW), password, username, interact, images, facts, scan, chat, post / re-post, copyright, backdrop, repeat / loop, characters, avatars, fictitious/fake, evaluation, publish, trust, stroke, template, reputation, identity, digital book (eBook/ePub).
Year 3	Block, palette, code/coding, command, decomposition, sprite, stage, condition, control block, costume, digital content, simulation, hyperlink, attachment, URL, blog/blogging, consequences, illustrator, untrusted, cyberbully, cyberbullying, reliable, MegaByte, GigaByte, report, sceptical, verify, fake news, soundtrack, VR (virtual reality), font, shortcut, shots, 360° Video, authenticate, multimedia.
Year 4	Logical reasoning, audio, selection, page ranking, hacker, repetition (sometimes referred to as 'iteration' in upper KS2), script, scripts area, secure (https), PEGI, netiquette, conditional, scene, filters, grieving, storyboard, cloud computing, positive online communication, online persona, digital footprint, animation, age restrictions, social network, screenshot, screencast.
Year 5	Abstraction, vlog, YouTuber, IP address, pixels, vector, HTML, CSS, services, ISP, LAN, TCP/IP, variables, hub, peripheral, bandwidth, CEOP, ChildLine, cache, harassment, plagiarism, infringe copyright, illegal downloads, streaming, blocking, victim, cookie, junk mail, RAM / ROM, USB, ZIP, augmented reality, bit & bytes, upload, score, podcast, edit.
Year 6	Antivirus, new media, collaboration, visual coding, text based coding, adware, trojan, feedback, bot, boolean, checksum, server, firewall, generalisation, security updates, plug in, pop up blocker, scams, phishing, location based settings, in app purchasing, trolling, sexting, exclusion, doxxing, catfishing, flaming, fabotage, creeping, dissing, ghosting FTP, filtering, malware, screen time, balanced lifestyle, configuring.



A

Abstraction

Taking the detail out of a 'problem' to make it easier to solve.

Adware

Software application which displays adverts and can redirect searches.

Algorithm

Steps to follow to achieve a task.

Application (App)

A program (such as a word processor or a spreadsheet) that performs one of the important tasks for which a computer is used

B

Bandwidth

The amount of data that can fit through an Internet connection.

Block

An instruction in Scratch. Blocks linked together are called a script or program in Scratch. Also to block someone from contacting a user on a social media account for example.

Blog/Blogging

Short for 'web log', a shared online journal or diary. Normally a webpage containing users' opinions/experiences/observations.

Bluetooth

Allows the exchange of data over short distances from devices.

Boolean

A variable whose value can only be true or false.

Bot

A program that can do things without a user needing to give instructions. Many bots are malware.

Browser

A computer program used to access the World Wide Web.

C

Canvas

A region on which you can draw lines, shapes or text.

Catfishing

This is where someone steals your photos and uses them as their own, usually in a bid to meet other people on the internet or to trick or fool someone.

CEOP

Child Exploitation and Online Protection Command is tasked to bring offenders to UK Courts.

Checksum

The total number of packets sent to/from a router.

Circumventor Sites

Parallel websites that allow children to bypass sites their adults have blocked.

Cloud computing

A system in which data is stored on a central server owned by a company (e.g. Google) and accessed virtually.

Code

Lines or blocks of instructions (see program).

Computer

A device that takes input, processes it, then produces output.

Computer networks

Connected devices that make it possible to transfer data using an agreed method ('protocol').

Costume

In Scratch, the costume is what a sprite can look like on screen.

Command

A step or line of programming (instruction for younger children).

Computational Thinking

An analytical approach to 'problem' solving (involving abstraction, decomposition, logical thinking, pattern, evaluation, generalisation)

Condition

Something that is either true or false

Cookie

A small file which records a user's personal preferences, shopping choices and other information.

Copyright

Gives the creator of an original work ownership rights.

Creeping

Someone who follows someone else's social network profile closely.

Cyberbullying

The use of electronic communication to bully someone.



D

Data

Numbers that represent images, video, text and sound.

Debug

Finding and correcting errors.

Decomposition

Splitting things into smaller parts.

Decoy App

These apps help children hide videos/images from their parents.

Digital Footprint

A person's trail of data on the internet that can last indefinitely.

Digital content

Any media created, edited or viewed on a computer.

Dissing

The act of commenting on a status with single liners that insult a specific person.

Download

Transfer of a file, from a central computer to your computer.

Doxxing

The publishing of an individual's home address or bank details etc.

E

Ebook / ePub

Digital book format file.

Emoticon / Emoji

The use of icons or text to portray mood or facial expression, e.g. :) when happy and :(when sad.

Etiquette

A set of rules that people try to abide by out of respect for other people around them.

Evaluation

Is this 'good'? Can it be improved?

Exclusion

This occurs when an individual is passively ignored or actively rejected by others, and can occur face-to-face (offline) or via the Internet (online).

Execute

Run or follow a series of instructions in a program.

F

Fabotage

Accessing someone else's social media account without their knowledge and changing information on it.

File format

The particular code that a file is stored in. Different software and devices use different formats, e.g. video uses MP4 and audio use Mp3.

Firewall

A system designed to prevent unauthorised access to your computer when connected to a network such as the Internet.

Flaming

Flaming is the act of posting or sending offensive messages over the Internet. These messages, called "flames," may be posted within online discussion forums, or sent via instant messaging programs.

Fraping

This is a combination of 'Facebook' and 'rape' and it is when someone has used your Facebook account without permission and destroyed comments or pictures, or created new and offensive comments and pictures pretending to be you.

FTP

File Transfer Protocol. A service for moving files from one computer to another.



G

Gamer

A person who plays video games including online, likely with other online users.

Gamer Tag

An alter ego made from an alias, picture or avatar. Sometimes these are offensive.

GB GigaByte

1024 kilobytes. Unit of measuring data.

Generalisation

Adapting solutions already found to solve new problems.

Geocaching

Is an outdoor activity in which the participants use (GPS) to hide and seek containers, called “geocaches”.

Geotag

To attach the exact geographical coordinates of longitude and latitude to a digital image, giving the location of where it was taken.

Ghosting

This means breaking off a relationship by stopping all communication and contact without any apparent warning or justification.

Griefer

Someone who deliberately harasses online gamers during a gaming session.

Grooming

Someone who gains a child’s trust for sexual exploitation or trafficking.

H

Hacker

A person who uses technology to gain unauthorised access to information.

Harassment

This is the act of sending continuously offensive, rude and insulting messages.

Hardware

The physical parts of a computer system, e.g. the CPU and the devices connected to it.

HDMI (high-definition multimedia interface)

Required for connecting devices to show high-definition video.

HTML

Hyper Text Markup Language: the ‘code’ used to create and lay out web pages.

Hub

A device that joins a group of computers together.

I

Identity theft

A crime that involves someone pretending to be another person in order to steal money or obtain other benefits.

In-app purchasing

Purchases of services or products are possible within some apps, such as game apps, and real money is required by them.

Incognito browsing

This allows a user to browse the web without their history being recorded on their device.

Information

Data processed and/or presented to users in a meaningful way.

Input

A method of computers receiving data (Eg. keyboard, mouse, touch, sensors etc.).

Instant Messenger

A way of communicating where messages are sent over the internet in real time.

Internet

The global collection of computer networks and their connections, all using shared protocols (TCP/IP) to communicate.

Internet Shaming

Online shaming is a form of Internet vigilantism in which targets are publicly humiliated using technology like social and new media.

IM (DM / PM)

Instant message also known as direct message, Private or personal message. These are messages sent between users via the internet or social media apps. These are very popular with younger generations.

IP Address

Numerical label assigned to each device on a computer network.

ISP

Internet Service Provider. The company you pay to connect you to the Internet.



J

Java

Programming language that enables the browser to perform a function or feature not normally available

JavaScript

Programming language that allows a web designer to add extra features to their web page.

JPEG

A format for compressing image files.

Junk Mail

Unwelcome or unwanted emails also known as SPAM.

K

Kbps

Kilobits Per Second, primarily used to measure data transfer rates.

Keyboard

A board of keys. One of the primary input devices used with a computer.

Keyboard Shortcut

Key combination that performs a certain command, such as copy or paste.

Keywords

Words or phrases that describe content.

Kilobyte

Most often used to measure the size of small files.

L

LAN

Local Area Network. Computers connected together that are geographically close to each other (e.g. home or school).

Link

Allows users to navigate. E.g. by clicking on a link, the user can 'jump' to a new screen.

Logical reasoning/thinking

A systematic approach to solving problems or deducing information using a set of universally applicable and totally reliable rules.

**M****Malware**

Software that is designed to cause problems for users.

Metadata

Provides information about the content of a digital item, e.g. each digital image from a digital camera has a file attached listing such things as date, time, camera and shutter speed.

Multimedia

A combination of different content types such as text, audio, still images, animation and video.

N**Navigation**

If a product is interactive, the user must be able to move around it easily. Navigational aids such as buttons and links are an important feature of interactive digital products.

Navigation bar

Usually placed along the top or side of the screen, this consists of a series of links to other screens. The navigation bar appears in the same position on every screen of the product, making it easy for users to find their way around.

Netiquette

Netiquette is the code of good behaviour on the internet. As the internet changes, so does netiquette.

Network

A group of computers that are connected (including the Internet).

O**Outing**

'Outing' people by publishing or disseminating confidential information online.

Output

The information produced by a computer system for its user, typically on a screen, through speakers or on a printer, but possibly through the control of motors in physical systems. Also an action performed by the computer e.g. switching on a light, moving a turtle or sprite across the screen.



P

Packet

Small pieces of data.

PageRank

A way of ordering the results of a search on the internet.

Pattern

Finding and using repetition in programs.

Pharming

Directing a user to a bogus website that pretends to be a real one in order to extract information from them.

Phishing

A form of Internet fraud that aims to steal valuable information such as credit card details, usernames and passwords.

Photo Sharing

Some apps allow users to share images for a few seconds. These apps can be very damaging to children.

Profile

Often social media sites will allow users to create their own personal profiles which other users can see.

Program

A sequence of instructions written to perform a specified task on the computer.

Q

QR Code

A QR code (short for "quick response" code) is a type of barcode that contains a matrix of dots. It can be scanned using a QR scanner or a smartphone with built-in camera.

QWERTY

This term is used to describe a standard (Latin alphabet-based) keyboard.

R

RAM / ROM

Random access memory (RAM) is a form of computer data storage. Read-Only Memory - is a computer hard drive.

Repetition

Instructions that can be repeated until a condition is met – i.e. a loop. Sometimes referred to as 'iteration'.

Resolution

The number of distinct pixels in each dimension that can be displayed.

Roasting

Girls are ganging up on boys in a new cyberbullying craze called "roasting". The new bullying takes place via mobile apps such as WhatsApp, Instagram or Facebook, where girls pick on a boy and vent the most offensive abuse until the victim "completely cracks".

Router

A device which can be either wired or wireless and is used to connect devices to the internet.



S

Search

Finding data or information that satisfies condition(s).
Such as web pages containing supplied keywords, or files on a computer with certain properties.

Selection

A way in computer programs to make choices (e.g. IF..THEN)

Selfie

Self-portrait photo often taken at arm's length using a Smartphone and uploaded to social media.

Sequence

A set of instructions that are followed in order

Services

Programs running on computers, typically those connected to the internet, for example, to transmit a web page, deliver an email or allow a text, voice or video conversation.

Sexting

Sending and receiving sexually explicit images/videos via IM, text or social media.

Simulate

Using computers to imitate real-world scenarios

Social networking

An online community where people can communicate and share information.

Software

Computer programs and applications (apps)

Spam

Messages sent to large numbers of users for the purpose of phishing, spreading malware and advertising.

Sprite

(in Scratch) an object that can be controlled by programming. Scratch projects are made up of objects called sprites.

Spyware

Software that can be installed on your computer without your knowledge, which collects information and sends details to another computer on the Internet.

Stage

This is where you see your stories, games, and animations come to life. Sprites move and interact with one another on the Stage.

T

TB

Terabyte or 1024 gigabytes.

TCP/IP

Language computers use to communicate.

Trojan

A program that appears legitimate but which performs some harmful activity when it is run.
Trojans often sneak in attached to a free game.

Troll

A user who posts inflammatory messages typically on Social Media sites to upset others.

U

Upload

Transfer a file from your computer to a central computer, e.g. your ISP.

URL

Uniform Resource Locator: a nickname (address) for a website

USB (Universal Serial Bus)

A standard method of connecting devices such as keyboards and printers to a computer.



V

Variables

A way in which computer programs can store, retrieve or change simple data, such as a score, the time left, or the user's name.

Video Hosting Sites

Websites and apps which allow users to post and view video clips, like YouTube.

Virus

A program designed to cause other programs on a computer to malfunction or stop working altogether.

Vlog (Vlogger)

Short for 'video log', a shared online journal or diary. Normally a video shared to YouTube or Vimeo containing users' opinions/experiences/observations.

W

Web Server

A computer connected to the Internet that provides access to (hosts) websites.

World Wide Web (WWW)

All of the web pages on the Internet, accessed using a browser.

Wireless (wifi)

Devices that are connected without wires or cables. They communicate via radio waves.

X Y Z

You Tube

A video sharing and streaming platform.

Zip

A compressed file format for emailing files or downloading.