

# Leaders of Early Learning Digital Enhancements



Audrey Hutchinson

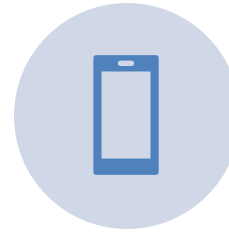
Elaine Quinn



# Aims



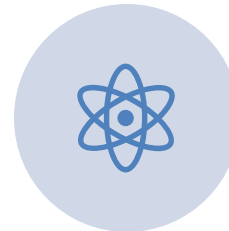
To consider digital learning in the contexts of key policy and guidance



To develop our understanding of how to embed digital learning in our establishments to benefit children, staff and families



To consider how to enhance learning and teaching through a wide range of digital technology



To develop our understanding GCC framework for digital literacy and computing science



# Contents



Key Policies and Documents



Digital strategy



Apple Tools



Planning and Assessment



Reflection

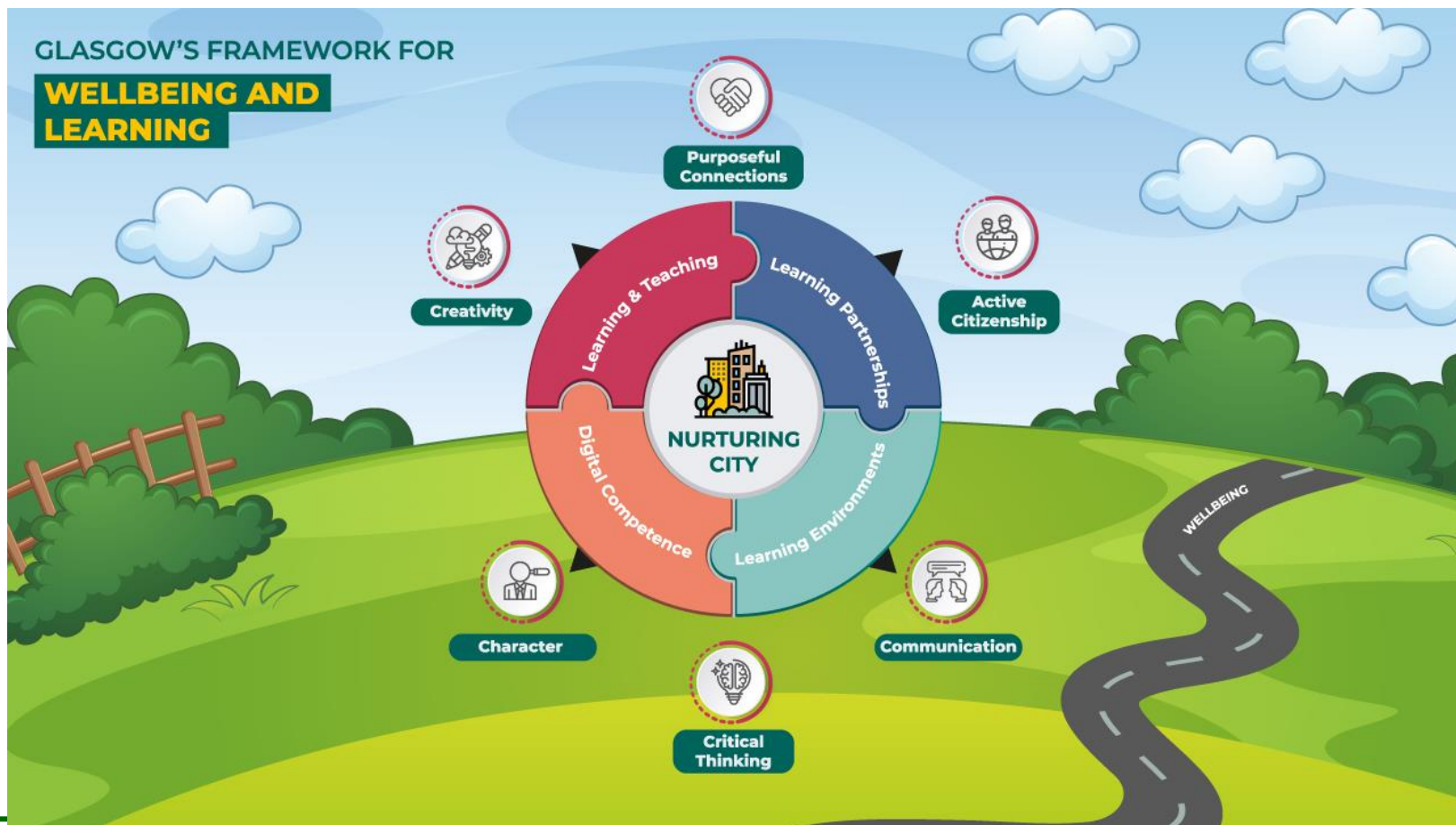


- *"The question is no longer **whether** technology should have a place in the classroom, but **how** technology can effectively be integrated."*

*Sir Kevan Collins*



# Glasgow's Framework



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# Education Endowment Foundation(EEF)



## USING DIGITAL TECHNOLOGY TO IMPROVE LEARNING

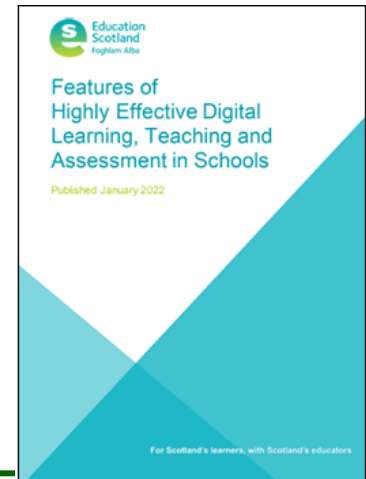
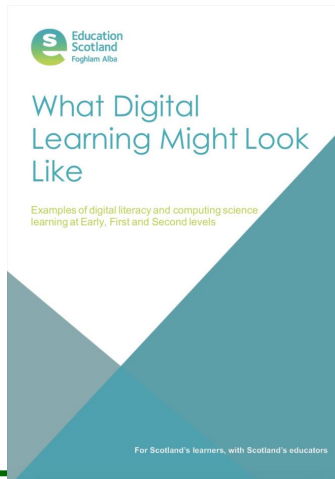
Summary of recommendations

<p><b>1</b></p> <p><b>Consider how technology will improve teaching and learning before introducing it</b></p> <ul style="list-style-type: none"> <li>• New technology can often appear exciting. However, it can become a solution in search of a problem unless it is introduced in response to an identified need. It is often useful to link the introduction of new technology to wider planning, for example, a review of assessment policy.</li> <li>• Schools should consider the pedagogical rationale for how technology will improve learning. The principles of how to use technology successfully are not distinct from questions of how to teach effectively or how children learn.</li> <li>• Without a clear plan for support and implementation, technology is much less likely to have an impact. This includes considering what initial training will be needed, what time and resources are required, and what ongoing support should be available.</li> <li>• Decisions about whether to introduce technology should also include an analysis of the costs of implementing the technology, alongside the expected benefits. This should include both the upfront costs and any ongoing requirements.</li> </ul>	<p><b>2</b></p> <p><b>Technology can be used to improve the quality of explanations and modelling</b></p> <ul style="list-style-type: none"> <li>• Technology has the potential to help teachers explain and model new concepts and ideas. However, how explanations and models are conveyed is less important than their clarity, relevance and accessibility to pupils.</li> <li>• Introducing a new form of technology will not automatically change the way teachers teach. The introduction of interactive whiteboards provides an example that highlights the need to consider the pedagogical rationale for adopting a form of technology, and for carefully planning the training required to enable teachers to use it effectively.</li> <li>• Technology can help teachers model in new ways and provide opportunities to highlight how experts think as well as what they do, but may be most effective when used as a supplement rather than a substitute for other forms of modelling.</li> </ul>	<p><b>3</b></p> <p><b>Technology offers ways to improve the impact of pupil practice</b></p> <ul style="list-style-type: none"> <li>• Technology has the potential to increase the quality and quantity of practice that pupils undertake, both inside and outside of the classroom.</li> <li>• Technology can be engaging and motivating for pupils. However, the relationship between technology, motivation and achievement is complex. Monitoring how technology is being used, including by checking that all learners have the skills they need to use it effectively, is likely to reduce the risk that technology becomes a tool that widens the gap between successful learners and their peers.</li> <li>• Some forms of technology can also enable teachers to adapt practice effectively, for example by increasing the challenge of questions as pupils succeed or by providing new contexts in which students are required to apply new skills.</li> <li>• Using technology to support retrieval practice and self-quizzing can increase retention of key ideas and knowledge.</li> </ul>	<p><b>4</b></p> <p><b>Technology can play a role in improving assessment and feedback</b></p> <ul style="list-style-type: none"> <li>• Technology has the potential to improve assessment and feedback, which are crucial elements of effective teaching. However, how teachers use information from assessments, and how pupils act on feedback, matter more than the way in which it is collected and delivered.</li> <li>• Using technology can increase the accuracy of assessment, and the speed with which assessment information is collected, with the potential to inform teachers' decision-making and reduce workload.</li> <li>• Technology can be used to provide feedback directly to pupils via programmes or interventions, but in all cases careful implementation and monitoring are necessary. Feedback via technology is likely to be most beneficial if it supplements, but is aligned to, other forms of feedback.</li> </ul>
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# Key documents



# Realising the Ambition



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## 6.5 digital technology and the young child

“Children can use any resource to promote their learning in at least two different ways. They can learn about a resource, and then use this knowledge to learn with it”

“An emphasis on learning with and through digital technologies rather than about digital technology will best enhance children’s early learning.”





## 6.5 The Child's View

- Children learn through observations and often mirror behaviour of family members
- High quality interactions with others is key when learning to use technology
- Effective use can help to reduce barriers to learning for all children, including children with additional support needs
- Children thrive when they ask, imagine, plan, create and interact with the world around them



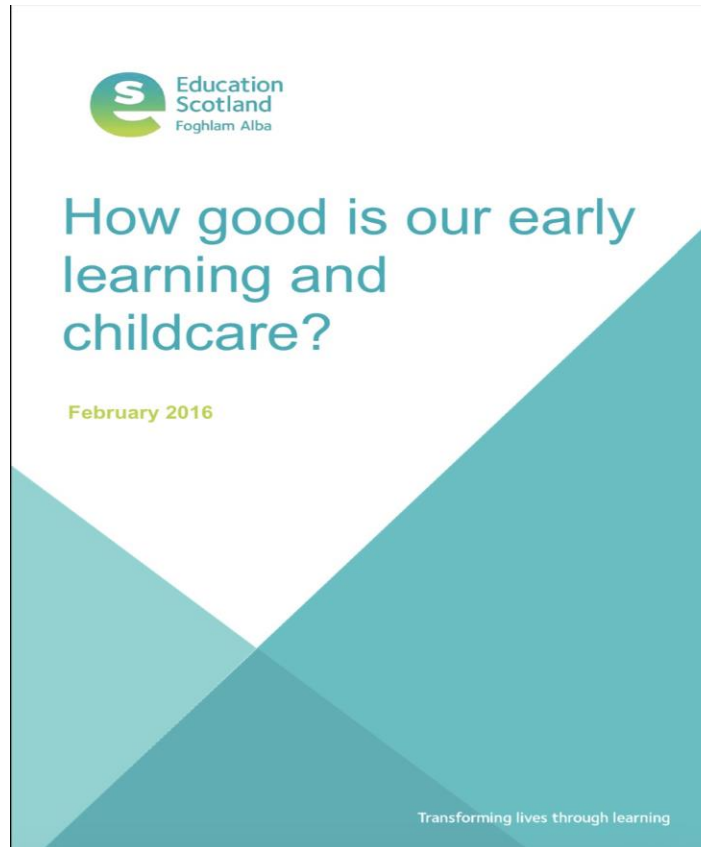


## 6.5 Our Role

- Unique learning spaces for children
- Bringing resources and experiences virtually into the setting can bring learning beyond what has been originally planned.
- Children learning through blogs, portfolios and emails are common place and can be very helpful for parents to see what children can do in real time.



# How Good Is Our Early Learning and Childcare? (HGIOELC)



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## Developing digital skills

- The setting has a clear rationale for developing children's skills in using and exploring digital technologies including staying safe online. Children's use of digital technologies enhances, deepens and personalises play and learning across the curriculum. They recognise a range of everyday technologies and increasingly understand how they work. Children are developing skills very well and are eager to try out and problem solve using new opportunities in digital technologies. They are becoming confident in making choices and decisions about solving problems and use digital technologies to enrich their play and learning in the setting, at home and in the community and how they may use their skills in the future. We make effective use of the skills of children, parents/carers and partners in developing the use of digital technologies across the curriculum.

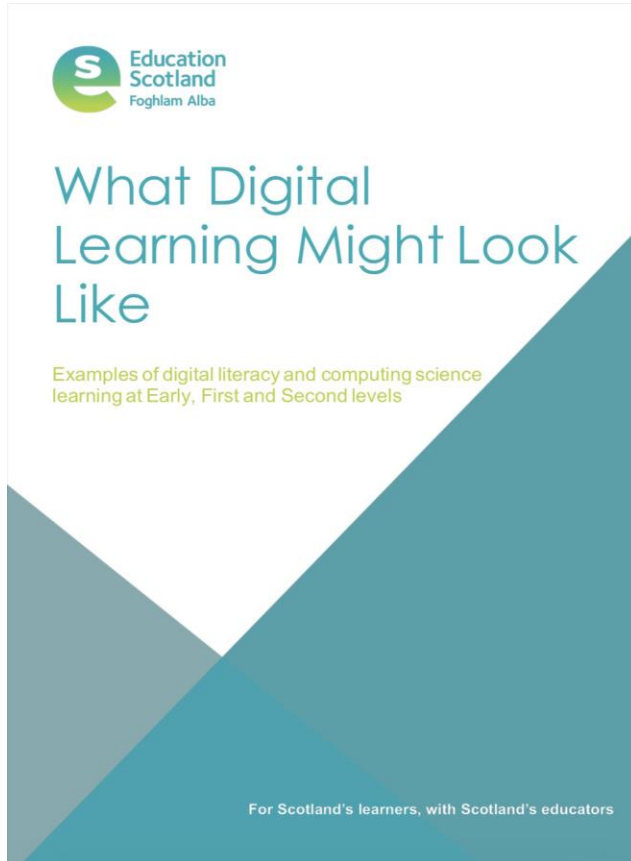




# What digital learning might look like



- Using digital products and services in a variety of contexts to achieve a purposeful outcome
- Searching processing and managing information responsibly
- Cyber resilience and internet safety
- Understanding the world through computational thinking
- Designing building and testing computing solutions



# What digital learning might look like



Early Level - Digital Literacy		
Key Concept	Experiences & Outcomes	Examples of Learning Activities
Using digital products and services in a variety of contexts to achieve a purposeful outcome	I can explore digital technologies and use what I learn to solve problems and share ideas and thoughts. TCH 0-01a	<p><b>When learning about sharing ideas with pictures and videos learners might:</b></p> <p>Gather examples of landmarks and people in the local community by taking screen shots from Google Earth or Apple Maps Flyover</p> <p>Capture photos and videos from a trip out in the local community and then collate and discuss these back at the nursery/class. Learners can then discuss what the image will be used for and if the learners have permission to use or share the image</p> <p>Use multimedia apps, such as Draw and Tell or Chatterpix Kids to express their thoughts and demonstrate their understanding by recording their voice and adding it to a photo to create an animation</p> <p>Choose what images and videos are shared on school blogs or social media that communicate the learners' experiences</p> <p>Record different types of video, including slow-motion and time-lapse, to support investigations in STEM learning, such as: a Venus Fly Trap catching a fly, a spider spinning webs or gravity races with dropped objects.</p> <p>Use digital a device to share media to present information/ideas to their peers, for example a photograph slide show or piece of video recorded on a digital camera/mobile device to the rest of the class, for example: Adventure Ted, home learning, special news from home (family would share the media with educators first)</p> <p><b>When learning about how things work learners might:</b></p> <p>Play at a 'tinker table' or 'exploration station' where they can explore and experiment with a variety of digital devices, such as: alarm clocks, cameras, stopwatches, calculators, BeeBots and old computers or phones</p> <p>Investigate what is inside different devices using a range of tools and instruments, such as; microscopes, shaving brushes to dust over, magnifying glasses or screwdrivers.</p> <p>Suggest the possible faults and solutions to broken devices, for example: "The BeeBot is full of sand because it took a long turn into the sandpit."</p> <p>Look at online resources that support their understanding of how things work, such as: <a href="#">CBeebies 'Maddie's Do You Know'</a> or <a href="#">YouTube 'Bits and Bobs'</a></p>



# What digital learning might look like



Early Level - Computing Science		
Key Concept	Experiences & Outcomes	Examples of Learning Activities
Understanding the world through computational thinking	I can explore computational thinking processes involved in a variety of everyday tasks and can identify patterns in objects or information <b>TCH 0-13a</b>	<p><i>When learning about sorting and identifying patterns learners might:</i></p> <p>sort concrete objects in the world around them, such as: Numicon, Cuisenaire Rods, flower petals, magnetic shapes or buttons. Learners might then sort them by shape, size or colour and this will lead to discussions about any patterns that they can identify, such as "two buttons and a flower, two buttons and a flower."</p> <p>explore rhythm and timing to make up their own sound or dance patterns using an app like Google Chrome Music Labs. Music is a relevant and engaging way for learners to explore repeating patterns</p> <p>consider 'When is the fridge most full – at the start of the week or the end and why is this?' or 'Are there more minibeasts in the garden when it is wet or dry – is it different minibeast depending on the weather?'</p> <p>notice the working patterns of adults, such as certain members of staff on particular days or for certain activities</p> <p><i>When learning about steps required to solve problems (algorithms) learners might:</i></p> <p>Discuss and then explain the steps involved in a simple everyday activity, such as: getting dressed, brushing teeth, bedtime routine or making a fruit kebab.</p> <p>Sing songs with repeating actions, such as 'Head, Shoulders, Knees and Toes' or 'Wind the Bobbin Up'. Learners might then explain the steps involved in such activities and share these with other learners or adults; working through the sequence in order and correcting any mistakes the other person makes</p> <p>Explore some of the Barefoot Unplugged resources, for example: <a href="#">Dance Move Algorithms</a> or <a href="#">House Patterns</a></p>
Understanding and analysing computing technology	I understand that sequences of instructions are used to control computing technology. <b>TCH 0-14a</b>	<p><i>When learning about programmable devices learners might:</i></p> <p>Play, or 'tinker', with programmable devices just like any other toy in the room during play. Exploring concrete materials, such as Code-a-pillar or Bee-bots is essential to learners' understanding of how devices work</p> <p>Solve simple challenges, such as getting the Bee-bot from point A to point B</p> <p>Play the role of the Bee-bot and try to follow a friend's instructions to move through a course or activity, such as making a model with playdough or drawing a picture they describe.</p>

## Digital Strategy



*“Investing in the right technology in education without a digital strategy is like relying on your sat nav for directions without first entering the destination. You can keep on driving, but you’re unlikely to end up at the right location or via the most efficient route.”*

*Al Kinsley, CEO Netsupport*



# Define your what and why?



Set out what you want to do and decide on the tools you need that will have the most impact on learners.



Set out what the steps of your strategy will be; linked to the learning, teaching, wellbeing, inclusion and curricular design priorities of your school



As Michael Fullan writes, a “pedagogy first” approach is most likely to bring the best rewards here

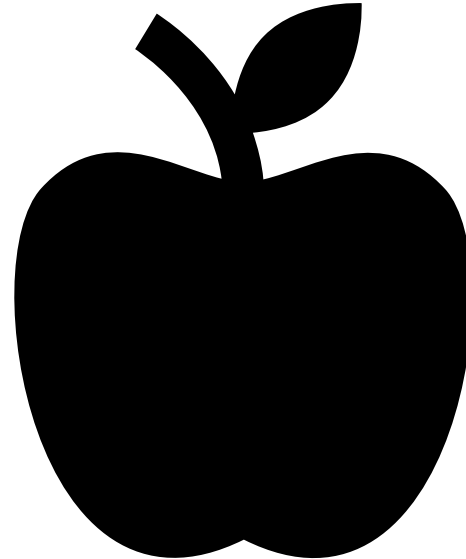


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# Apple Tools

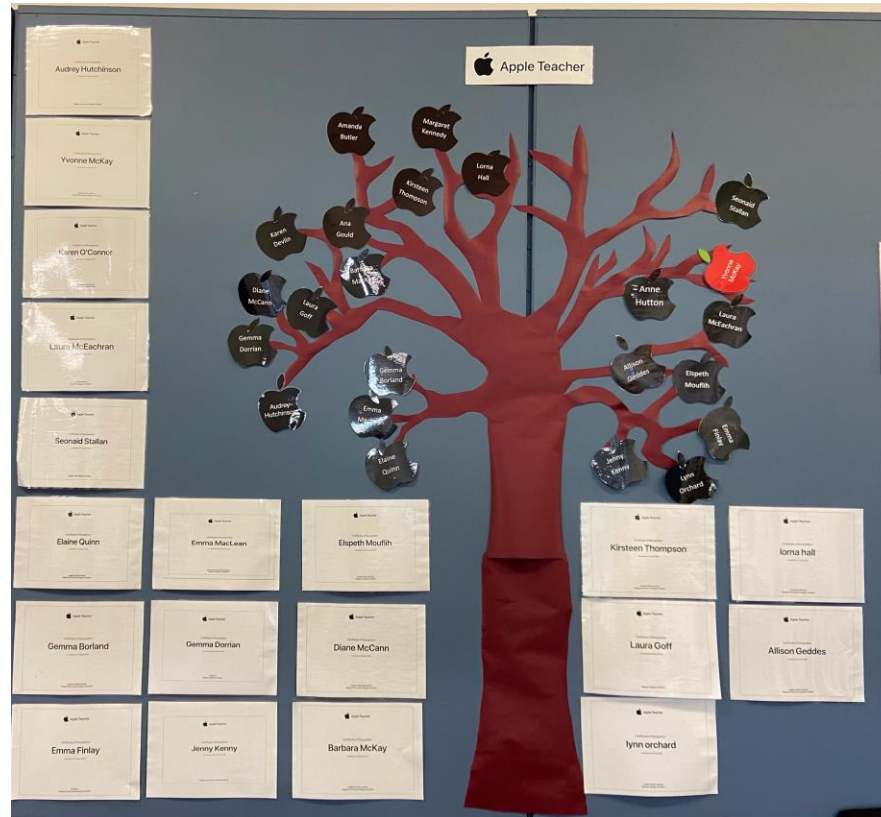


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# Apple Teacher



# Keynote



## Leaders of Early Learning

#KeepGlasgowTalking

Playing, talking and laughing with your children has never been more important. Often we find the best chances for this in everyday activities to help your child to be confident in using language. Here are some tips and ideas to keep your child talking and learning...

**Find opportunities for talk in everyday experiences...**

Invent a song for getting dressed, singing what your child needs to put on next.

Make funny faces in the mirror when brushing your child's teeth.

Encourage your child to help with cooking, making snacks and cleaning up...lots of bubbles makes that washing up a bit more fun.

On your daily walk, you will find lots of interesting things to talk about...turn your walk into an adventure and imagine you are explorers.

**The important thing is to keep your child happy and chatty.**

Have a look at our video for some ideas on how to do this...

**Playing**

Playing and letting your child use their imagination is great for learning new words and trying out new ideas. Remember that you are your child's most important partner in their play, let their imagination lead the way.

You can create play spaces using cardboard boxes, paper, pens and tape...you could use old clothes, materials and household items to dress up and create characters.

## Singing and telling stories are lovely ways to help to develop your child's language skills. Letting your child show you or tell you what they want to do will help to keep them interested. Here are some ideas you can offer....

**Telling Stories**

Sharing stories with your child is a great way to help them to relax, to learn new words and to talk and develop ideas...

When using books, talk about the pictures, the characters, and any interesting words. Ask your child what they think might happen next or what they would do if they were that character. Try using the phrase 'I wonder' to get your child thinking about the possibilities...

I wonder how you would feel if you were the witch?  
I wonder what the witch might put in her cauldron...

Sharing stories does not always have to be with a book. Share stories with your child from special family occasions or funny things that have happened.

**Singing**

Singing is great for language development but also for keeping your child happy and engaged.

Sing the songs and rhymes that you and your child know and love.

You can try to change the words around a little to make your own songs or make instruments from pots and pans to tap out the beat.

## Leaders of Early Learning

#KeepGlasgowCounting

Maths is all around us and is important as a way for children to make sense of the world. Here we share some really simple ideas of how to develop your child's maths and numeracy skills through play and everyday experiences. Just look for the numbers in everything you do.

**We're Going on a Number Walk**

Going for walks is an excellent time to talk about numbers with your child. Help your child to become curious by noticing numbers around them. Look out for numbers on doors, buses, road signs, registration plates etc and talk about what they mean. It's not a test so make it fun.

**Try these counting ideas:**

Let's use our fingers to count how many dogs we can find.

How many stars are there up to the house? 1-2-3-4. We went up 4 steps. Let's go back down now and count. 4-3-2-1

How many red cars will we see as we walk around the block?

If we start at ten, do you think we can reach home before we get to zero?

Can you find me 3 flowers?

I think we will see five ducks in the pond. How many do you think we will see?

**Laundry Learning**

There are lots of opportunities for learning maths when doing the washing.

**Why not try some of these ideas:**

**Sorting** - Use one basket for light colours and one for dark colours. Take turns to put an item from the pile of dirty clothes in the correct basket

**Matching** - your two year old might enjoy finding and creating a pile of their own clothes. Your three year old might like to match socks. Talk to your child about what they are noticing and ask them about how they make a match. Older children can sort in more complex ways such as tops on one pile and trousers in another.

**Capacity** - Is the machine empty? Half full? Full? Is there anymore space?

## Young children learn best when they are playing and taking part in something fun. Here are some ideas...

**Brilliant Baking**

Children love to join in with cooking and baking and it's a great, fun way to help them learn all about maths.

**Here are some simple ways to involve maths learning in cooking:**

Count the ingredients in a recipe, one at a time using your fingers.

Ask your child to count out a number of ingredients (2 slices of bread per sandwich)

We have 10 tomatoes, if I eat one how many do we have?

We need to use 3 oranges, how many will be left in the bowl?

Ask your child to find or read the numbers on a recipe.

As well as counting, adding, subtracting and recognising numbers you will be helping your child develop their language of shape, pattern, measurement and understanding time.

And when you are finished you have something yummy to eat.

Check out our videos here...

**Playful Puzzles**

Playing with puzzles is a great way to develop problem solving skills. Making your own puzzles is fun, easy to do and can be made with the stuff from your recycling pile.

All you need is any type cardboard you have around the house or your favourite cereal box.

Cut along the edges of the picture to make the border of your puzzle.

Flip the cardboard over and use a pencil to make the lines of your puzzle pieces on the box and with scissors cut along lines.

Now you have a puzzle.

When playing with the puzzle, chat to your child about how they are trying to solve it. Pick up a piece and say,

"Look at the shape of this piece, where do you think it will fit?"

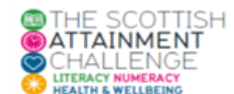
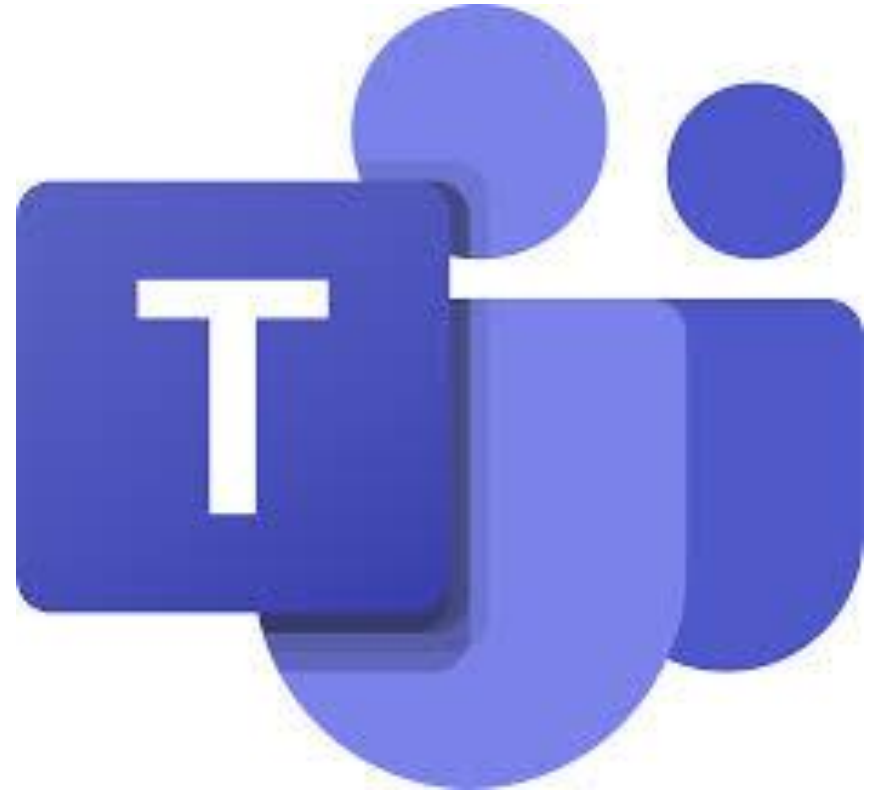
"How did you know that piece would fit in that space?"

"Which way do we need to turn this piece so that it will fit?"















# Teams

- Team Meetings
- CPD training
- Working parties
- Family Links
- Collaboration
- Sharing



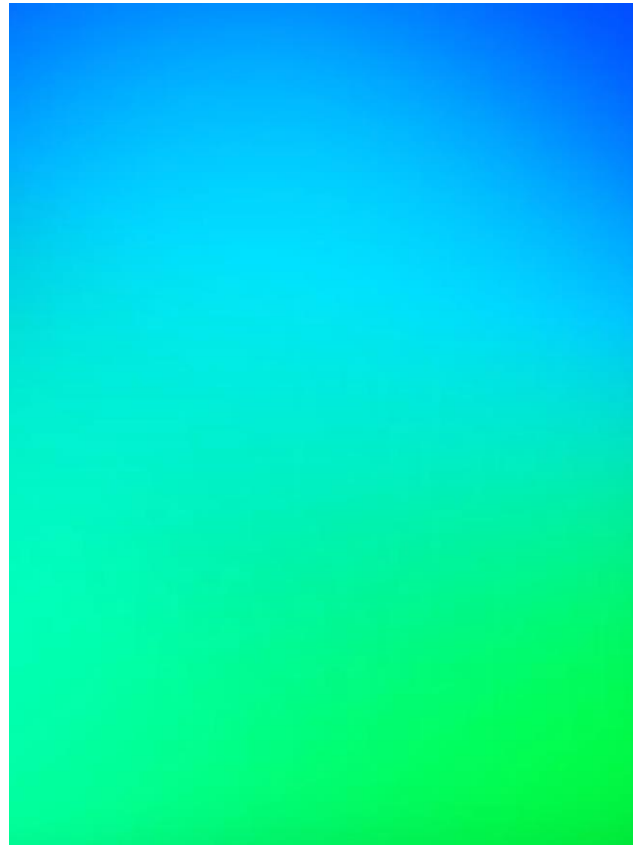


 <p><b>Camera (iPad)</b> Take photographs, videos, time-lapse or slow-motion recordings with the camera app.</p>	 <p><b>Book Creator:</b> Create and design your own digital books using text, drawing, photographs, videos, voice clips and more.</p>
 <p><b>Photos (iPad):</b> View photos and videos stored. Built in edit features, including crop, filter, change colour balance, trim video length. Use <i>Mark Up</i> tool to edit photographs with set of drawing tools.</p>	 <p><b>Kodable:</b> Create Activities to encourage computational thinking and code from the very basics through to creating JavaScript. Paid version also includes lesson plans (American).</p>
 <p><b>PicCollage:</b> For editing photos and creating collages of photos/video. Pupils learn editing process of photography - this demonstrates that photography has a purpose and that their photographs are seen by other people.</p>	 <p><b>Bee-Bot:</b> Based on the programmable robot Bee-Bots, the app replicates the controls of a Bee-Bot, with the aim being to input sets of instructions for the bee to follow.</p>
 <p><b>Puppet Pals HD:</b> easy to use cartoon creator app that allows you to create your own animations using a variety of themes and characters. Puppet Pals is a really fun and engaging app which can be used in many ways. Choose a puppet and background to tell a story.</p>	 <p><b>Padlet:</b> Collect together information and create mind maps with image, text, audio and links. Work collaboratively with others on a shared space.</p>
 <p><b>Clips (iPad):</b> app for making videos with text, effects, graphics and more. Easily record clips in the app, or add photos and clips together to make a video. Use pre-made frames, filters, animated graphics, annotate with text and add live subtitles using automatic voice recognition. Great for creating short clips to share learning.</p>	 <p><b>Seesaw:</b> app or web-based, this is a digital learning log for pupils, to keep a record of learning through text, image, video and audio. It empowers pupils of all ages to create, reflect and collaborate, as well as share their learning to a private feed for their families to see (optional) and engage with through the family app.</p>
 <p><b>ChatterPix Kids:</b> Bring photos of objects/characters to life. Take a photo, use stickers, frames and filters, then give your picture a mouth and record your voice talking.</p>	 <p><b>Swift Playgrounds (iPad):</b> app that makes learning Swift (a programming language) interactive and fun. Solve puzzles to master the basics using Swift is used by pros to build today's most popular apps</p>

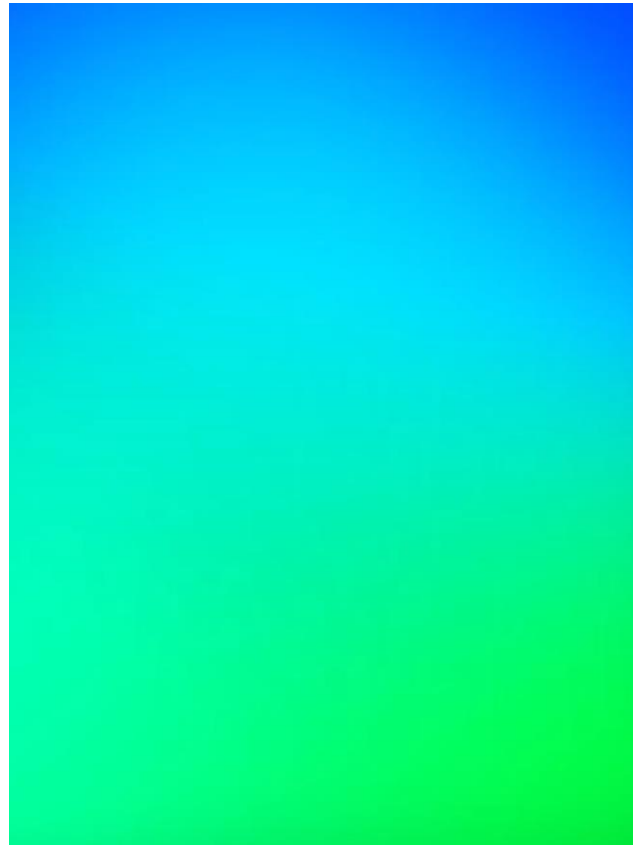





# Beebots for coding











# Beebot story sequencing

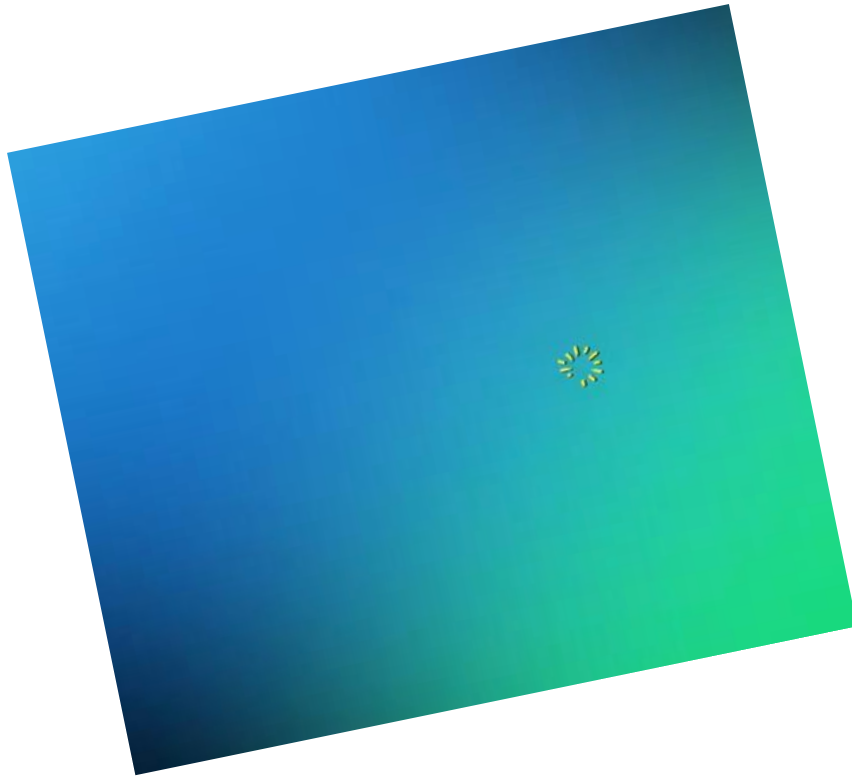


 <p><b>Tynker:</b> A community space with iPad-friendly coding games, including Hour of Code and Swift. Uses block or Swift coding to introduce learners to simple movement of a character, and simple debugging/improving routines</p>	 <p><b>Stop Motion Studio:</b> create stop motion animations using this software with simple interface</p>
 <p><b>Tynker Junior:</b> Suitable for early years/pre-readers, learn to code through solving puzzles and games using picture-based block coding before moving onto block coding.</p>	 <p><b>Plickers:</b> formative assessment tool, which can be used with one device and a set of Plicker cards to gather multiple choice responses from large groups</p>
 <p><b>Kahoot:</b> Used for formative assessment; find and create quizzes and games for pupils to play via their device.</p>	 <p><b>iMovie (iPad):</b> movie-making and editing software on iPad. Use your own images, videos, audio and text to create movies or trailers using simple drag and drop interface.</p>
 <p><b>Green Screen by DoInk:</b> create videos using a green screen effect – insert your own background images/videos to a film, or create interesting effects using green objects.</p>	 <p><b>Podcasts (Apple):</b> Access podcasts from creators around the world – this is a catalogue of existing podcasts (caution: not always child-friendly content, please review any proposed podcasts before giving to pupils)</p>
 <p><b>Scratch Jr:</b> Learn to code with this introduction to visual programming and block coding. Use sample projects or create your own to make scenes with backgrounds, objects and characters. Focuses on creating movement; make changes to what's seen on the screen using visual blocks.</p>	 <p><b>HP Reveal:</b> Making augmented reality easy and accessible to everyone. Upload assets, assemble Auras and share or insert into your work. <a href="#">Find out more.</a></p>
 <p><b>Explain Everything:</b> virtual whiteboard, use as a whiteboard through Apple TV, or for children as a canvas to work upon. Use text, image, video, hyperlinks all in one place. Can record mark making and play it back, also records audio.</p>	 <p><b>Garageband (iPad):</b> this app has a range of touch instruments and a recording studio for children to create music or DJ with provided songs.</p>



	<p><b>BeeBot:</b> programmable 'robot' focusing on direction, movement and sequencing short code using arrows</p>		<p><b>Drone:</b> often programmable via an app, or 'driven' with directional joystick</p>
	<p><b>Sphero:</b> programmable robot ball – use 'drive' for movement, 'draw' for visual programming and 'block' coding elements all within the Sphero Edu app. Also interacts with Swift Playgrounds on iPad. Watch <a href="#">this video</a> to find out more.</p>		<p><b>Roamer-Too:</b> programmable roaming robot, with changeable keypad for increasing challenge</p>
	<p><b>Code-a-pillar:</b> programmable caterpillar device, where the body parts make up the 'code' – these click together and light up as they perform the code created so that children can follow the effects of what they input</p>		<p><b>Remote-controlled objects:</b> not usually a programmable device, as it responds immediately to movement, but useful as a stepping stone and comparison; for learning about movement and direction (instructions given to the remote are followed by the object)</p>
	<p><b>Dash &amp; Dot:</b> programmable robots, come with their own apps for creating visual and block code</p>		<p><b>Micro:bit:</b> open-source hardware, ARM Cortex-M0 processor, accelerometer and magnetometer sensors, Bluetooth and USB connectivity, display consisting of 25 LEDs, two programmable buttons, and can be powered by either USB or an external battery pack; inputs and outputs through five ring connectors that form part of a larger 25-pin edge connector</p>

# Clips and iMovies





# Digital Literacy Key Concept – Using digital products and services in a variety of contexts to achieve a purposeful outcome

## How things work

Tinker table or  
exploration  
station



Problem  
solving



Online  
resources



## Understanding routine and procedure

Create digital  
books about  
routines



Make  
selections  
digitally



Create  
instructions  
using voice,  
video and text



I can explore digital technologies and use what I learn  
to solve problems and share ideas and thoughts.

TCH 0-01a



# Online Communication

Video calls



Watch live broadcasts



communication in the past



Read books about internet safety



Passwords



Uses of technology



## Sharing ideas with pictures and videos

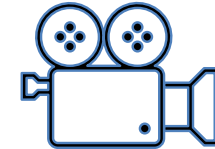
Google Earth /  
Maps



Chatterkid



Different types  
of videos



Create a book  
using images  
from a walk



Choose  
learning to be  
shared



Present  
information to  
peers





# Seesaw

Glasgow's Improvement Challenge - Leaders of Early Learning  
(Glasgow Council, Learning at Home - Numeracy Early Starter 1)



## Split a Sandwich

Young children start to learn about fractions through everyday experiences. Start exploring this by splitting a whole into smaller parts and chatting about the sizes of the smaller parts. You don't have to worry about learning  $\frac{1}{2}$  means a half.

This experience will give your child the opportunity to develop their understanding of the terms "half", "equal" and apply it to parts of a "whole".

### What to do

When preparing a sandwich with your child ask them "Can you cut your sandwich in half?"



Compare the two parts of the sandwich. It is unlikely that the two parts will be equal so this creates an opportunity to discuss what this means.

Do you think that your parts are the same size? Why?

Equal parts "the same".

Show your child the difference by placing the two parts together.

Cut another sandwich in half equally and place the two halves together to show that they are the same size.



Remember to emphasise the word "equal" and explain that this means "the same".

### You will need:

- 2 sandwiches (toast, rolls, cakes etc will also work)
- a knife that a child is able to use safely

"Are these parts of the sandwich equal?"

Having everyday conversations about maths really helps children make connections between learning and the world they live in.

**BM** Barbara McKay



Assign...

## Student Instructions

### Split a Sandwich

We have been learning about splitting a "whole" into "equal" and "unequal" parts. Why not try to Split a Sandwich with your child over lunch to explore this at home?

Kindergarten

Compatible with: Chromebooks, computers, iPads, iPhones, Android tablets, Android phones, Kindle Fire tablets.



# Green screen



Christmas card



Graduation – inclement weather conditions



Storytelling and songs



# Early Years Training



- Remote sessions via teams on Fridays
- School CPD sessions Monday – Friday
- CPD manager: <https://Glasgow.cpdservice.net/>





# DLCS Framework

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**Glasgow**



**DIGITAL  
learning**  
For All

**Framework for Digital Literacy &  
Computing Science –  
Early, First & Second Level**



LEL Literacy Group 2015



# Framework

Digital Literacy	<a href="#">Using digital products and services in a variety of contexts to achieve a purposeful outcome</a>	Recognises different types of digital technology	Uses digital technologies in a responsible way with appropriate care	Identifies different applications and programs by icon	Logs on to devices with a password/ passcode	Opens and closes a pre-saved file	Identifies and consistently uses the close icon
	<a href="#">Searching, processing and managing information responsibly</a>	Identifies and uses images and key words when searching for specific information		Demonstrates an understanding of how information can be found on a website (text, audio, images, video)		Understands they should not use materials that belong to others without permission	
	<a href="#">Cyber resilience and internet safety</a>	Demonstrates understanding of appropriate behaviour and language in the digital environment	Some awareness of what to do and who to ask for help if something inappropriate happens while using a device		Identifies where passwords and passcodes are used in school and at home		Understands the importance of having passwords and passcodes
Computing Science	<a href="#">Understanding the world through computational thinking</a>	Classifies objects, and groups using simple categories	Identifies similarities and differences between objects	Begins to identify patterns (objects and information)		Identifies beginning and end of an everyday process and recognises there are steps in between	Can give a set of instructions or directions in correct sequence
	<a href="#">Understanding and analysing computing technology</a>	Understands that computers follow a process and need precise instructions	Follows a simple set of instructions using visual representation (e.g. arrows)	Understands that devices can be controlled and respond to commands	Predicts what a device (or person) will do when given a simple set of instructions	Follows and designs simple algorithms for a programmable device (or person) to carry out a task (e.g. directions to a goal)	Identifies computing devices and everyday technology in the world around them and the impact it has on their daily life
	<a href="#">Designing, building and testing computing solutions</a>	Uses directional language (e.g. forwards, backwards, turn)		Identifies and corrects errors in a simple set of instructions or algorithm			Uses key language of computational thinking



# Benchmarks

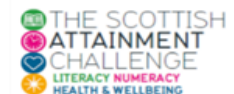
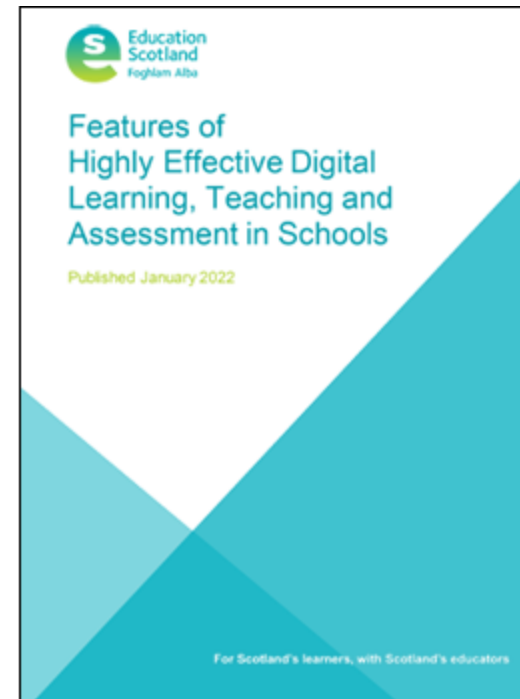
Digital Literacy	Using digital products and services in a variety of contexts to achieve a purposeful outcome	I can explore digital technologies and use what I learn to solve problems and share ideas and thoughts <b>TCH 0-01a</b>	<ul style="list-style-type: none"> <li>Recognises different types of digital technology</li> <li>Identifies the key components of different types of digital technology</li> <li>Logs on to a preferred device with a given password</li> <li>Identifies icons for different applications</li> <li>Opens and closes a pre-saved file</li> <li>Identifies and consistently uses the close icon</li> <li>Uses digital technologies in a responsible way and with appropriate care</li> </ul>
	Searching, processing and managing information responsibly	I can use digital technologies to explore how to search and find information. <b>TCH 0-02a</b>	<ul style="list-style-type: none"> <li>Identifies and uses images and key words when searching for specific information</li> <li>Demonstrates an understanding of how information can be found on websites as text, audio, images and video</li> <li>Demonstrates an understanding of how they should not use materials owned by others without permission</li> </ul>
	Cyber resilience and internet safety	I can explore, play and communicate using digital technologies safely and securely. <b>TCH 0-03a</b>	<ul style="list-style-type: none"> <li>Demonstrates an understanding of appropriate behaviour and language in the digital environment</li> <li>Demonstrates an understanding of the importance of passwords and passcodes for example access to a school building</li> </ul>
Computing Science	Understanding the world through computational thinking	I can explore computational thinking processes involved in a variety of everyday tasks and can identify patterns in objects or information. <b>TCH 0-13a</b>	<ul style="list-style-type: none"> <li>Identifies and sequences the main steps in an everyday task to create instructions/an algorithm for example, washing hands</li> <li>Classifies objects and groups them into simple categories for example, groups toy bricks according to colour</li> <li>Identifies patterns, similarities and differences in objects or information such as colour, size and temperature and simple relationships between them</li> </ul>
	Understanding and analysing computing technology	I understand that sequences of instructions are used to control computing technology. <b>TCH 0-14a</b>	<ul style="list-style-type: none"> <li>Demonstrates an understanding of how symbols can represent process and information</li> <li>Predicts what a device or person will do when presented with a sequence of instructions for example, arrows drawn on paper</li> <li>Identifies computing devices in the world (including those hidden in appliances and objects such as automatic doors)</li> </ul>
		I can experiment with and identify uses of a range of computing technology in the world around me. <b>TCH 0-14b</b>	
Designing, building and testing computing solutions	I can develop a sequence of instructions and run them using programmable devices or equivalent. <b>TCH 0-15a</b>	<ul style="list-style-type: none"> <li>Designs a simple sequence of instructions/algorithm for programmable device to carry out a task for example, directional instructions: forwards/backwards</li> <li>Identifies and corrects errors in a set of instructions</li> </ul>	



# Planning, teaching and Assessment

## Features of Highly Effective Digital Learning

- Planning
- Teaching
- Assessment



# Digilearn Scotland



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# Final Thought



“To improve learning, technology must be used in a way that is informed by effective pedagogy”

**Using Digital to Improve Learning EEF**



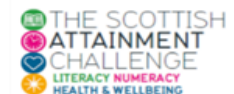
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# Digital Enhancements

