

Computing Curriculum Strands	Digital Literacy - Online Safety <i>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>	Digital Literacy <i>Technology around us</i> <i>Recognise common uses of information technology beyond school.</i>	IT- Digital Media - Create, Share, Respond <i>Create, Share, Respond</i> <i>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</i>	IT - Multimedia and Digital Writing <i>Create, Share, Respond</i> <i>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</i>	IT- Data <i>Create, Share, Respond</i> <i>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</i>	Computer Science- Coding <i>Understand what algorithms are; how they are implemented as programs on digital devices; that programs execute by following precise and unambiguous instructions.</i> <i>Create and debug simple programs.</i> <i>Use logical reasoning to predict the behaviour of simple programs.</i>
0-3	Online Safety To appropriately and safely interact with technology the way they are designed	Technology around us To recognise different forms of technology To acquire basic skills in turning on and operating some ICT equipment (Everyday buttons, switches and icon - volume/home button on iPad)				Computer Science- Using Toys (unplugged) To explore toys that can move in different directions (buttons, flaps and simple mechanisms) To operate mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car. To begin to follow instructions in the correct order.
3-4 (Nursery)	Online Safety I know who to talk to if I ever feel worried whilst using technology (Jessie & Friends) Digital Wellbeing I know when to take a break from technology (before bed, when teacher talking, Digital Free Meal Times) + Digital Charter	Technology around us To sort different pieces of technology that they may find at school and what they may find at home eg: <i>A washing machine in the kitchen not in the classroom.</i> To recognise 'plugged' and 'unplugged' (online and offline) activities	Tinkering with Technology To experience simple apps (BusyThings/ JIT/ LGfL Resources) To input commands using a mouse or use finger control to interact with a tablet Digital Photography I can take a photo using an ipad/camera I can explain what makes a good photo Audio: To use technology to record voice (Sound buttons/Microphones) To use listening devices (CD Player, Headphones, Seesaw) Digital Painting To make careful choices when painting a digital picture To use the shape, colour, eraser and line tools	Tinkering with Technology To experience simple apps (BusyThings/ JIT/ LGfL Resources) To input commands using a mouse or use finger control to interact with a tablet Keyboard skills I can recognise a keyboard I have some experience of using a keyboard Digital Writing To make careful choices when creating digital writing To identify that the look of text can be changed on a computer (size, colour, font)	Data To count objects with the same properties (Pictogram) To compare groups of objects To answer questions about groups of objects	Computer Science - Real Life Algorithms (Barefoot Computing) To follow and act out a series of instructions (Follow an algorithm) To explain what a given command will do Computer Science - Floor Robots To use buttons to control (program) a floor robot To use buttons to control (program) a robot in an app (bee bot app) Computer Science - Early Coding (Busy Things/Beebot apps) To explore games on technology that move forwards, backwards, left and left. (Busy Things, Beebot, JIT, Scratch Jr)
4-5 (Reception)	Online Safety To create rules for using technology responsibly To be aware that we need passwords to protect our work and will use them with an	Best Uses of Technology To manage a device by correctly closing websites or apps and safely turning on and off. To input commands using the spacebar, backspace, enter, letters and numbers on a	Digital Photography To take a photo using different forms of technology I know ways to improve a photo (filter/edit/crop) Audio: To change the way things	Keyboard Skills I can use spacebar and backspace To add and remove text on a computer Digital Writing To explain why I used the tools	Data To use technology to organise objects into groups (pictogram) To show the value (amount) of objects (data) using technology (Pictogram/JIT/Busygraph)	Real Life Algorithms To understand that instructions need to go in the correct order. If you mix them up then the task will not be completed correctly. <i>Eg: making toast- you can't butter the bread and then put it into the toaster.</i> To combine forwards and backwards commands to make a sequence (Creating an

	<p>adult <i>eg: for teachers to log onto their computers or a passcode for the iPads.</i></p> <p>Digital Wellbeing To recognise the 'Digital 5 a Day' and give some examples of activities I know who to talk to if I ever feel worried whilst using technology</p>	<p>keyboard on any device (including on a tablet).</p> <p>Technology around us To recognise technology that is used at home and in school. Understand what a computer is and the different uses of computers i.e. learning, communicating, finding information, playing games etc. Reception</p>	<p>sound using technology To use technology to listen to different sounds, music and audio books (Press play, pause and stop)</p> <p>Digital Painting To use a computer independently to paint a picture I can undo and redo I can save and retrieve work To explain why I chose the tools I used To compare painting a picture on a computer and on paper</p>	<p>that I chose (Thinking about the audience and theme) I can use dictation to support my writing To compare writing on a computer with writing on paper</p>	<p>maker) To interpret greater or less from looking at graphs (data)</p>	<p>algorithm)</p> <p>Computer Science - Floor Robots To plan, follow and complete a simple program on a computer or floor robot. To create and read an algorithm (sequence of instructions) To find more than one solution to a problem (Find the fastest/slowest route)</p> <p>Computer Science - Early Coding (Busy Things/Beebot apps) To give commands/instructions e.g. forward, backwards, go, stop, when using simple software/hardware Make choices about the buttons/icons to press, touch or click on when using simple software/hardware.</p>
<p>Resources: Hardware + Software</p>	<p>Online Safety: Common Sense Media Childnet - Smartie the Penguin/Digiduck ThinkUknow - Jessie & Friends</p> <p>Digital Wellbeing: Digital 5 a Day Digital Charter</p>	<p>Technology Around Us: Ipads Chromebooks Computing Suite Kitchen Lights Fridge Torch Hairdryer TV</p>	<p>Digital Photography: iPads Camera Chromebook iPod Seesaw</p> <p>Audio: CD Players Audio on Seesaw Headphones Sound Buttons Talking books</p> <p>Digital Painting: Class Computer Smart Board iPad/Tablet Homework</p> <p>Software: J2E Toolkit (JIT) -J2write -j2pain -j2animate -j2data -j2mix Busy Things Seesaw Tapestry</p>	<p>Keyboard Skills: Chromebooks iPad Computing Suite Keyboard Floor Rug Printed KeyBoard</p> <p>Digital Writing: Ipad Chromebook Computing Suite Smart Board</p> <p>Software: J2E Toolkit (JIT) -J2write -j2pain -j2animate -j2data -j2mix Busy Things Seesaw Tapestry</p>	<p>Data: Smart Board Ipad</p>	<p>Toys: Remote control cars Wind up cars Tractors Train sets Boats</p> <p>Real Life Algorithms: Barefoot Computing Sequencing Stories</p> <p>Floor Robots: Barefoot Computing Beebots (see unplugged activities first) Beebot Blubot Probots Fakebots Bee Bot app Codapillar Cubetto Osmo Sphero</p> <p>Early Coding Busy Things Code.org Scratch Jr Kodable Tynker JIT - J2Turtle</p>

Teaching Ideas

Lessons & Activities:

[DL - Common Sense Media](#) (1 per half term)

Story time + PSHE Supported by:

[Jessie & Friends Digi Duck](#)
[Smartie the Penguin Digital 5 a Day](#)

Safer Internet Day:

[Digiduck Masks](#)

Posters:

Create whole Class Digital Charter
 Create Rules of Responsible IT use
[Parent Guides](#)

Expressive Arts & Design

[Create the Common Sense Media Digital Citizens](#) (art project)
[Create your own Online Safety Dance routine](#) (dance & music)
 Use

Communication, Language

Tapestry/Seesaw to record videos of how to stay safe online
 Parent Session around Media Balance & Digital Wellbeing (real books before bedtime)

Technology around us:

Parent donation of resources
 People who work in Technology
 Technology hunt around the school
 Ask parents to bring in different forms of technology
 Technology timeline

Examples

In the home – microwave, phone, answer machine

- Doctor surgery/hospital – X-ray machine, CT/MRI scanner, ultrasound

- Office – computer, printer, telephone, photocopier

Keyboard Skills:

Keyboard Floor Mat (Jump onto the buttons)
 Draw buttons and switches into sand
 Donate old computers put into role play areas
 Buy keyboard for iPads
 Draw a computer with chalk on playground

Digital Photography:

Take photos using cameras
 Take photos on Seesaw & annotate (draw your perfect garden in the playground etc.)
 J2 Camera - Editing photos & using Filters
 Minibeast Hunt
 QR Code Hunt

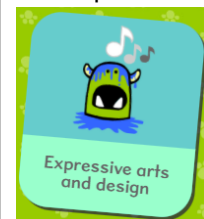
Audio:

Listening AudioBooks - Oxford Owl
 Epic Reading
 Teach Your Monster to Read
 Recording audio books/videos by teacher on Seesaw and sharing QR Codes around Classroom
 Listening Stations

Digital Painting/Writing & Data

Book Creator

BusyThings (including link to EYFS objectives)- project linked as well as by subject.
 Creating paintings through Busy Things > Expressive Arts & Design > Impressionism > Recreate a masterpiece



Annotating images using tools on Seesaw

Self Portraits in Busy Things

Explore Computing Spotlight for ideas linked to topics



Growth
 This topic covers human growth, links to healthy eating and healthy practices, and an area related to animal, insect, plants and underwater growth.

Animals
 This topic covers animal life cycles, local or farm animals, wild animals, pets and caring for animals, sorting and classifying animals and also explores various traditional animal tales.

Minibeasts
 This topic covers minibeast life cycles, exploring and caring for the environment, plans of hunting and sequencing activities as well as exploring various traditional minibeast tales.

Superheroes
 This topic covers story sequencing and structure, MAI speaking and creating your superheroes, playing healthy and active games to help children be a community hero.

J2E Toolkit (JIT) JiT – mixed platform with built in backgrounds, stampers and word banks; Write, Paint, pictograms etc

-J2write
 -j2pain
 -j2animate
 -j2data
 -j2mix
 Busy Things
 Seesaw
 Tapestry



Toys:

Donate old Toys
 Use Sand, water and stations to support

Real life algorithms:

Dress up station - Follow instructions to dress as....

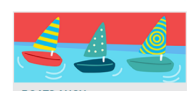
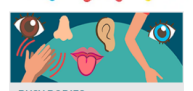

[Hello Ruby text](#)

Barefoot Computing:



Barefoot Computing EYFS Resources

Early Years Resources

 <p>BOATS AHOY Age: 4-6 years Curriculum Links: Science, Maths, English, DfT Concepts & Approaches: Algorithms, Decomposition, Creating, Drawing, Logic, Patterns, Abstraction, Collaborating Takes children on a journey of discovery as they investigate boats. Four activities make up this set of resources: includes: different uses of boats, floating and sinking predictions, creating a good boat through exploring designs and role play.</p> <p>Download Resource</p>	 <p>BUSY BODIES Age: 4-6 years Curriculum Links: PSHE, English, Science Concepts & Approaches: Algorithms, Decomposition, Debugging, Logic, Patterns, Abstraction Provides four activities that help children discover how bodies move and grow. Using the resource provides them explore and learn about parts of the body, growth and movement. Simple algorithms are created and adapted to form a routine of movements.</p> <p>Download Resource</p>	 <p>GUIDE TO EARLY YEARS COMPUTATIONAL THINKING A guide to explain the importance of computational thinking in early years and the terminology used.</p> <p>Download Resource</p>
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Floor Robots/Beebots:

[Barefoot Computing](#)

Unplugged + Plugged tinkering activities
 Using Fake Bots first

[TTS bee bots](#)

Open ended investigation - How many forwards is it to get across the playground?
 What is the fastest route?

Link to Maths – directions
 Sequencing stories/instructions
 Counting on/back
 Spelling words
 Matching (phonics/words/pictures)

Creating Mats linked to class texts:

[Days of Week & Geography](#)








[Fairy Tales](#)

[Linking to texts](#)

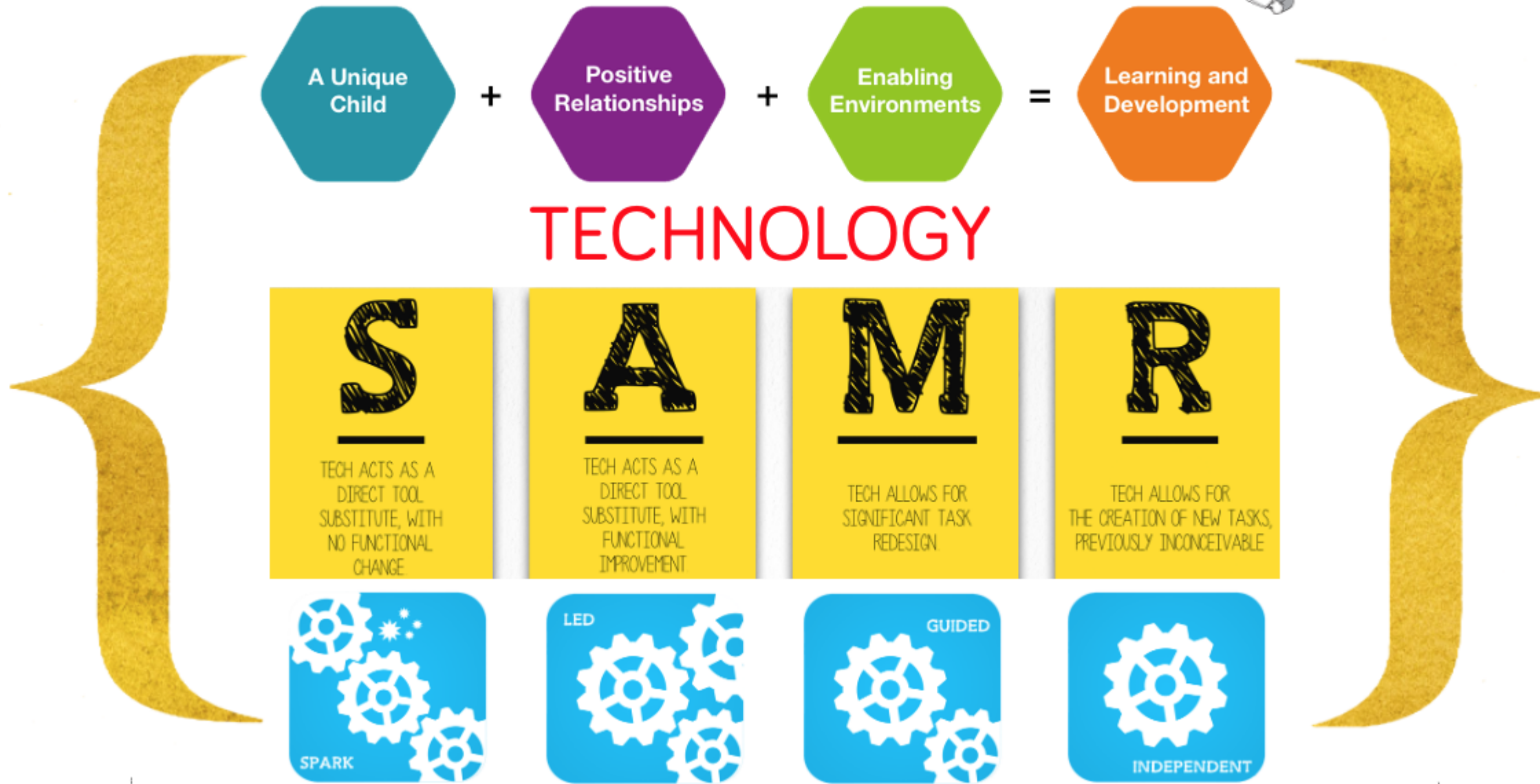
[Examples on Twitter](#)

Early Coding:

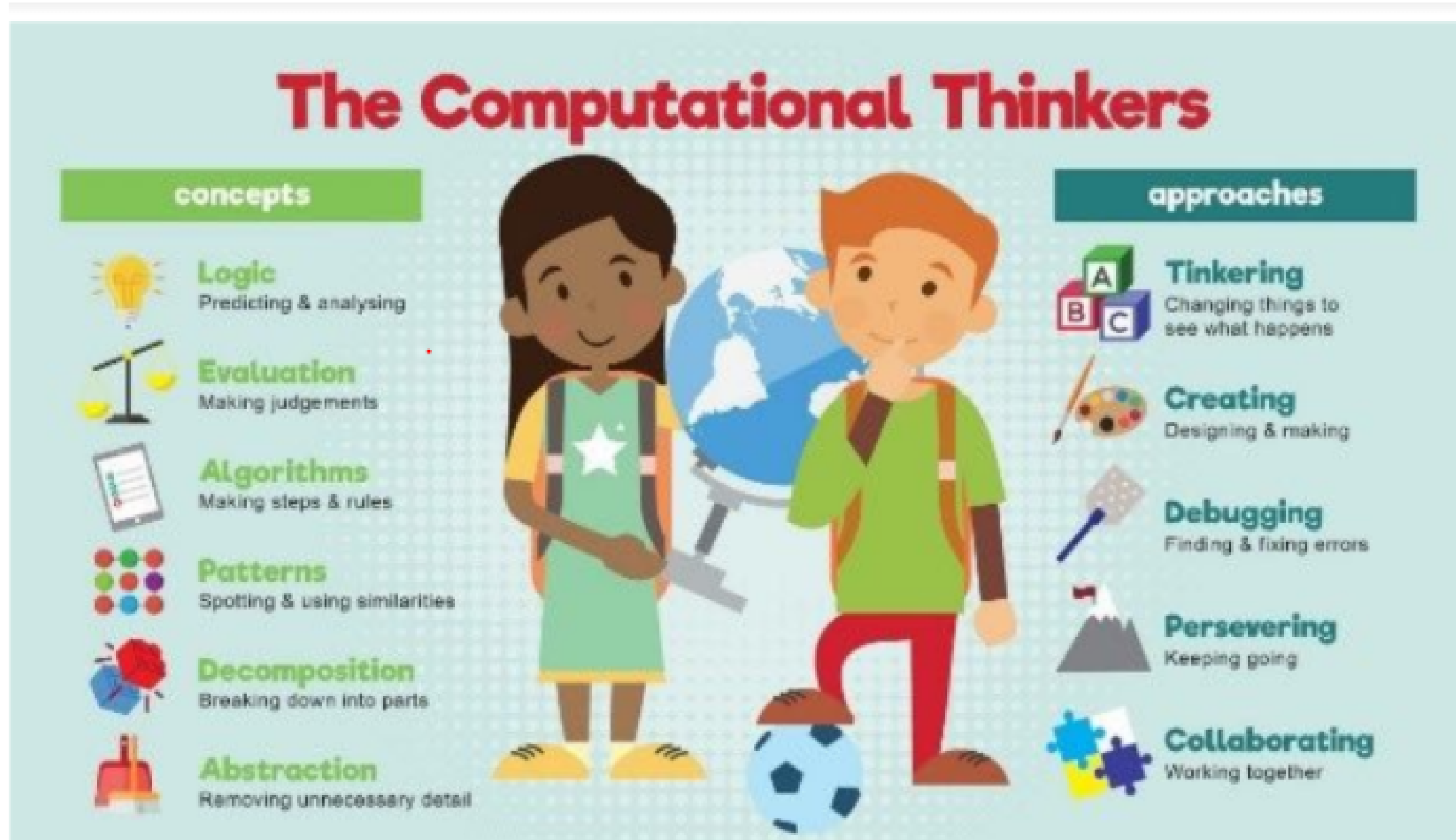
Coding station
 Hour of Code
 Using parents to come in and support from their

					area of work
<p>How does it link to the curriculum?</p> <p>Developing Matters New</p> <p>+</p> <p>Busy Things Resources</p>	<p>Personal, Social and Emotional Development + Understanding the World</p> 	<p>Expressive Arts and Design</p> 	<p>Communication, Language & Literacy + Physical Development</p> 	<p>Mathematics</p> <p>Maths games and simulations: ICT games, iboard, BusyThings, Espresso</p> 	<p>Technology (Early Programming)</p> 
<p>Key Apps Sourced from Alan Ellis - KnowsleyCLCS</p> <p>Examples of how they can be used</p>	<p>Go Noodle Peg & Cat Games Bit Breaker Picollage Magnify Seesaw Google Earth</p>	<p>Quiver Garageband Seesaw Voice memos Chatterpix Toontastic Stop Motion Studio iMovie Cbeebies</p>	<p>Camera Clips Beebot Puppet Pals Seesaw Bookcreator Piccollage Chatterpix Greenscreen Teach Your Monster To Read</p>	<p>Busythings J2E Keynote Google Slides Google Jamboard Powerpoint</p>	<p>Busy Things Code.rg JIT Beebot Cubetto Ozobot Tynker Kodable</p>
<p>LGfL Resources for use with Early Years</p> 	<p>EYFS Spotlight Fairy Tales J2E - JIT Busy Things Widgit Fossils & Dinosaurs</p>				






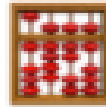


Technology as an early learning goal has gone but the idea of technology as a tool for learning is still vital.



Source: Bradley Dardis @LGfL



Source: Alan Ellis with Barefoot Computing & knowsleyclcs.org.uk

EYFS & Computational Thinking Skills	Simple Definitions Open with ▼	What to observe across the 7 areas of learning & ELG Examples
Tinkering 	Play and exploring	Communication and Language: speaking. Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher.
Making 	Making things, checking and fixing things	Physical Development: Fine Motor Skills. Use a range of small tools, including scissors, paint brushes and cutlery.
Collaboration 	Playing and working collaboratively	Personal, Social and Emotional Development: Building Relationships. Work and play cooperatively and take turns with others.
Persevering 	Not giving up	Personal, Social and Emotional Development: Managing Self. Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.
Logic 	Anticipating and exploring - logical reasoning	Communication and Language: Speaking. Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate.
Pattern 	Group things, comparing, spotting similarities and differences, working out rules	Mathematics: Numerical Patterns. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.
Abstraction 	Naming and labelling, working out what is important, sticking to the main theme, ignoring what is not important, creating a summary	Literacy: Comprehension. Demonstrate understanding of what has been read to them by retelling stories and narratives using their own words and recently introduced vocabulary.
Algorithms & Decomposition 	Responding to instructions, ordering things, sequencing things, introducing storylines, working out different ways to do things, breaking problems down into steps	Literacy: Comprehension. Anticipate where appropriate – key events in stories.