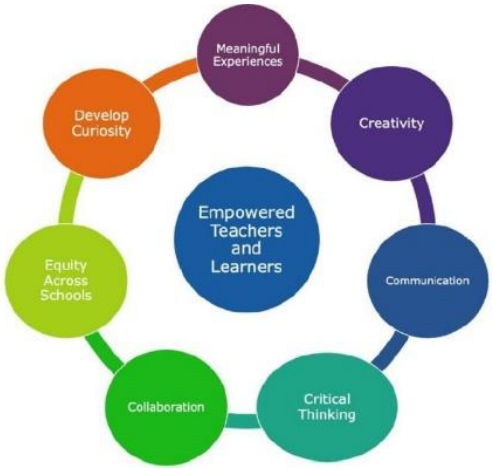
Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Our **Digital Technology Curriculum Overview** has been created to support the develop of digital skills across our learning community. Our aim is for our teachers and practitioners to be empowered to incorporate the teaching of digital skills into all areas of the curriculum.



This document should be referred to when planning learning experiences, so digital elements are embedded within planned activities. All staff have a responsibility to teach the skills required at their level to ensure progression, breadth and depth of learning for our learners.

Our **Digital Technology Curriculum Overview** highlights the benchmarks as well as a range of activities/lessons where these benchmarks can be met.

The Overview is designed to be a working document where new examples of good practice are added each session. The overviews take a similar form to the 'What Digital Learning Might Look Like' document (*Education Scotland, 2020)*.

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Early Level ELC and Primary 1	
Driver: Using digital products and services in a variety of contexts to achieve a purposeful outcome	
	Suggested Activities

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

E&O: I can explore digital technologies and use what I learn to solve problems and share ideas and thoughts. TCH 0-01a

Benchmarks:

- Recognises different types of digital technology.
- Identifies the key components of different types of digital technology.
- Logs on to a preferred device with a given password.
- Identifies icons for different applications.
- Opens and closes a pre-saved file.
- Identifies and consistently uses the close icon.
- Uses digital technologies in a responsible way and with care

Continuous Provision:

- Availability of technological/ digital tools to support play-based learning – calculators, torches, stopwatches etc.
- Responsive use of iPads to facilitate/ extend play e.g. *looking at Google Earth, learners taking photos and making videos while engaging in role-play.*
- Intended use of the iPad as a provocation e.g. *showing a painting by Picasso/ interesting structures/ flags of the world.*

Interactive Board:

- Use websites for learning games e.g. Top Marks.
- Explore the Whiteboard/ Painting app to create images.
- Use in-the-moment for example to show letter formation or create a visual number line.

iPads:

- Log in using own name and class password (Primary 1 only).
- Use the home button, volume buttons and lock button.
- Log out of iPad when finished.
- Exploring Early Level Apps – *Build A Truck, CBeebies, ChatterPix, Beebot, Duck Duck Moose etc.*
- Create pictures using Draw and Tell.
- Use the *Camera* app to take photos and videos.
- Scan QR Code to access Learning Journal and upload images/ videos
- Scan QR codes to access identified resources e.g. *World Book Day* stories, *Draw with Rob…*

Driver: Searching, processing and managing information responsibly

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

E&O: I can use digital technologies to explore how to search and find information. TCH 0-02a **Benchmarks:** • Identifies and uses images and key words when searching for specific information. • Demonstrates an understanding of how information can be found on websites as text, audio, images and video. • Demonstrates an understanding of how they should not use materials owned by others without permission.	• Look at some of the different ways we can find out information – talking to people, historical artefacts, books, leaflets and posters, websites etc. • Involve learners in small group experiences to search the internet for information/ images as they arise during child-led play and adult-initiated/ directed learning. (Use casting to show learners how to do this on an iPad). • Explore websites such as: *ClickView, BBC Teach* to complement intended and responsive planning. • Use search engines to find specific images/ videos relevant to the learning in class. Introduce the notion of copyright, that what we see on the internet belongs to someone else. • Ensure we always ask permission before we take photos of learners.

Driver: Awareness of technological developments (Past, Present and Future), including how they work.	
E&O: I enjoy playing with and exploring technologies to discover what they can do and how they can help us. TCH 0-05a **Benchmark:** • Discusses times when they have used different technologies.	• Technology exploration area with old/ historical resources such as: landline phones, mobile phones, computers, cameras, laptops, keyboards, radios, walkie-talkies etc. • Availability of technological/ digital tools to support play-based learning – calculators, torches, stopwatches etc. • Small group Floorbook discussion to capture learner voice on the technologies they have used.

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Driver: Impact, contribution, and relationship of technologies on business, the economy, politics, and the environment.	
E&O: I understand how local shops and services use technologies to provide us with what we need and want in our daily lives. TCH 0-07a **Benchmark:** • Gives examples of how people (for example police, fire, healthcare) who help us use technologies in their every day work.	• Use the RSHP curriculum - *People Who Help and Look After Me* Early Level - RSHP – to draw out the use of technologies e.g. use of walkie-talkies, mobile phones, life-saving equipment, computers etc.

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

First Level Primary 2 - 4	
Driver: Using digital products and services in a variety of contexts to achieve a purposeful outcome	
E&O: I can explore and experiment with digital technologies and can use what I learn to support and enhance my learning in different contexts. TCH 1-01a **Benchmarks** • Identifies the key components of frequently used digital technology and whether it is a piece of hardware or software. • Uses digital technology to collect, capture, combine and share text, sound, video and images. • Communicate and collaborate with others using digital technology for example, email, Glow or other platforms. • Opens and saves a file to and from a specific location.	• Learn the difference between hardware and software. Complete a project using a combination of hardware (iPad) and software (Chatterkid, iMovie). Report back to the class what hardware and software you have used. • Use the iPad Measure app alongside traditional measuring instruments, such as tape, ruler or metre stick, to measure everyday objects • Use the stopwatch app on a digital device to measure time during P.E. when running races or taking turns with equipment. • Use the slow-motion video or photo bursts functions on a device's camera to determine who was first to cross the line in a race or whether someone's foot crossed the line before jumping. • Use the time-lapse video recording function to detail the direction of the sun when exploring how shadows work. • Use the slow-motion to examine how surface tension is present on water when popping a water balloon (see Slow-Mo Science on Apple Everyone Can Create Books) • Access class novels (Epic!) and reading books in a range of formats, including audiobooks, Office Lens or a built-in screen-reader (such as on iPad or in O365 Word). • Create texts indifferent media, such as a class news report with a green screen where they have a background to simulate report e.g. from an exotic or dangerous location, such as the moon or a volcanic eruption (iMovie, Clips, Keynote, Powerpoint). • Present information in a chronological sequence, with PowerPoint or Keynote, including relevant images and information about events in a topic, e.g. The Romans or Our Local Area. • Use apps, such as Chatterpix, Talkr, Sock Puppets or Puppet Pals, to create short films that demonstrate their skills or understanding of a topic, for example: French vocabulary, explaining a maths process or a HWB drama on friendship. • Teacher begins to share appropriate communication on used platforms such as Teams for homework (at this stage children should not be accessing Outlook). Teacher should touch

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	on emails in a general way but not specifically using it as an app. Layout of emails, differences of them depending on relationship. • File Management - Open and save work to shared or personal accounts on Shared iPads. Creating appropriate named folders.

Driver: Searching, processing and managing information responsibly	
E&O: Using digital technologies responsibly I can access, retrieve and use information to support, enrich or extend learning in different contexts. TCH 1-02a **Benchmarks:** Demonstrates an understanding of: • The different functions of a browser and search engine. • My rights and responsibilities as a digital citizen. • The potential dangers online and who to go to for advice and who to report a concern to. • The need for strong passwords. • The need to get a person's permission before taking a picture or video of them	• Use a web browser, such as Safari or Chrome, to find pictures, videos and games to support topical learning, for example: a picture of a Roman soldier or the inner workings of a volcano. • Use common reputable sources of information, such as BBC or Simple Wikipedia, and explain why they are considered reliable. • Search for places and information on Google Earth or Apple Maps Flyover to learn about different locations across the world. • Save an image from Safari into Photos and insert it onto Pages, or Insert Video From the Web. Select 'copyright free images' when using Google Image Search and explain the reasons for doing this, for example: "The photo belongs to someone else and we need their permission to use it."

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Driver: Awareness of technological developments (Past, Present and Future), including how they work.	
I can explore the latest technologies and consider the ways in which they have developed. TCH 1-05a • Identifies changes to technologies for example, televisions and mobile phones. **I can take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. TCH 1-06a** • Identifies ways in which energy can be saved. • Understands how and where we waste materials and resources. **I understand how technologies help provide for our needs and wants, and how they can affect the environment in which we live. TCH 1-07a** • Demonstrates an understanding of how technologies, by meeting our needs and wants, affect the environment in which we live.	• Look at technology from the present and past. Discuss similarities and differences between each. • Link to global goals – reflect on how modern advances in technology have made an impact on a global and local scale (for example, homework can be completed electronically resulting in less paper waste). What changes could still be made? Electric cars etc. • Discuss key issues such as food waste and deforestation. Where can technology be a beneficial or detrimental tool in tackling climate change? • Investigate how we manage waste in school. Are there ways we could change our approach to create a more eco-friendly environment? Are there other ways that technology has a detrimental impact on our local environment? • https://streaming.discoveryeducation.com/teacherCenter/lessonPlans/pdfs/3-5_Science_TechnologyItsBenefitsAndNegativeEffects.pdf

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Second Level
Primary 5

Driver: Using digital products and services in a variety of contexts to achieve a purposeful outcome

I can extend and enhance my knowledge of digital technologies to collect, analyse ideas, relevant information and organise these in an appropriate way. TCH 2-01a

Benchmarks:

- Identifies and saves in a range of standard file formats.
- Saves files using an organised filing system.
- Stores, shares and collaborates using an online cloud based service for example, Teams
- Identifies the key features of input, output and storage devices.
- Selects and use applications and software to capture, create and modify text, images, sound and video.
- Selects the most appropriate digital software to perform a task
- Know that device and app settings can be changed to make them work differently, including making them easier to us

- Create a range of texts that are increasingly collaborative and multi-modal, for example: writing and recording a song with metaphors and similes or creating a podcast for World Book Day with an app such as GarageBand
- Produce short films, whether live-action or animated. These films will include all the elements of writing, such as setting, characters, dialogue and plot – this will be demonstrated through an increasing understanding and application of sounds used, editing, pacing and scenes/shots. Learners will make links to the job roles involved in digital filmmaking, for example: producer, director, photographer, digital effects artist, animator, sound engineer.
- Creating a quiz about their reading book using online Forms.
- Create a journal to keep a record of learning new concepts and/or revision, such as Microsoft OneNote.
- Use an online storage and collaboration space, such as Microsoft Teams, to access learning, complete tasks and receive feedback.
- Use an online map, such as Google Map, to plan or research a school trip. Calculate large areas, identify the distance and estimated time and propose a method of travel.
- Create graphs from surveys about relevant real-life contexts, such as 'Cycle to School' using software such as Numbers or Excel . They will then demonstrate their understanding of the data by selecting the most appropriate graph for the gathered data, and collaborate digitally to analyse next steps, or make recommendations based on the data, for example: "We should have more oranges available at lunch time as they were the most popular fruit in our survey."
- https://www.bbc.co.uk/programmes/p01661yg – Educational Video about programming – Beebots
- Get started with accessibility features on iPad – Apple Support (UK)
- How are digital photos and videos made? - BBC Bitesize

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Driver: Searching, processing and managing information responsibly	
I can use digital technologies to search, access and retrieve information and are aware that not all of this information will be credible. TCH 2-02a **Benchmarks** • Uses search engines to search the internet for specific or relevant information for example, using quotation marks to narrow the results. • Access websites and use navigation skills to retrieve information for a specific task. • Demonstrates an understanding of usage rights and can apply these within a search for example creative commons.	• http://ergo.slv.vic.gov.au/learn-skills/research-skills - Online research skills tool. • Search for and locate information on the web, such as 'The Vikings', and make sure to locate information on at least three different sites in order to ensure accuracy. They will then be able to compare different information and ask questions about the reliability or online sources – why might this be? Are some sites more reliable than others? • Discuss online representations, such as how people are portrayed on social media, 'airbrushed photos', and 'fake news'. They may discuss how online perceptions and interactions shape our thinking and feelings (unreality) – are celebrities healthy, happy or normal role models? • Lessons | Project Real • Fact or fake - is information on the web always reliable? - BBC Bitesize • Use search tools, such as 'advanced options' and +/- beside words to make searches more accurate, for example Google "viking-tyres-office–cruises" to find information on The Vikings but excluding Viking Tyres, Viking Office Supplies and Viking Cruises. They may also select Google Advanced Search settings for similar options. • Include a reference to all sources in all research presented including links to source material, for example 'image from Getty Images' Use web searches to identify and use appropriate media to include in pieces of work, such as the BBC sound effects library to find audio for (http://bbcsfx.acropolis.org.uk/) stop-motion animations or live films. • Use a search engine, such as Google or Creative Commons website, and using the advanced options/tools to filter images or videos which are available for reuse. The teacher should explain the reasons for doing this, for example: "The photo or artwork belongs to someone else and we need their permission to use it. • Role play the steps in data transfer across a network, such as the internet – learners play client, server and DNS and passing pages of information between them. • Go on a network hunt where they go around each room in the school and map out all the devices and their connections to the internet. • Discuss how the school network connects to the internet and manages all the devices connected to it. • Search technologies - BBC Bitesize

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Driver: Awareness of technological developments (Past, Present and Future), including how they work.	
I can investigate how product design and development have been influenced by changing lifestyles. TCH 2-05a **Benchmarks:** • Gives examples of how our changing lifestyles have impacted on product design.	• Make a list of the technologies we have in the world and sort into 'essential' and 'non-essential'. Perhaps there are elements of some technologies that are essential and other aspects that are less so. Discuss how what we see as essential now may not have been in the past. • Look at various technologies and how they have developed over time, for example, mobile phones. Look at advertisements for devices from the past and compare with those of the current world. What are the selling points now compared to the past? • Design a new piece of technology and prepare a sales pitch highlighting all the relevant features. Set up a 'Dragon's Den' scenario in which teams try to promote their product and consider how it suits the needs of modern-day consumers. • Tech for the Planet (techshecan.org)

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Second Level Primary 6 - 7	
Driver: Using digital products and services in a variety of contexts to achieve a purposeful outcome	
I can extend and enhance my knowledge of digital technologies to collect, analyse ideas, relevant information and organise these in an appropriate way. TCH 2-01a **Benchmarks:** • Identifies and saves in a range of standard file formats Saves files using an organised filing system. • Stores, shares and collaborates using an online cloud based service for example, Glow or other platforms. • Identifies the key features of input, output and storage devices. • Selects and use applications and software to capture, create and modify text, images, sound and video. • Selects the most appropriate digital software to perform a task.	Word Processing using Word or Pages • use more complex text/page manipulation (paragraphing, bullet points, numbering, text alignment, copy/cut/paste, page layout) insert tables, pictures, clip art use spell check and select from suggestions use simple keyboard shortcuts for copy, cut and paste and selecting text manipulate tables and pictures (by adding rows and columns, formatting cells) • assessment Submitting a piece of independent personal research Displaying/presenting information collected from surveys in maths or as part of an enterprise project Extended writing piece Compiling notes for use in class debate Creating a contents page Peer assessment/editing of written work, adding notes or highlighting text • Creating school newspaper, or a newspaper page for language or other topic work Images • continue to crop and resize an image with increasing confidence and independence in a range of software packages including Textease, MS Word, MS Publisher, Comic Life use Ctrl + Print Screen to make a copy of the visible work space to be pasted into a document for manipulation show awareness of different image file formats change resolution/file size/ quality of image for different purposes • Saving • save and name files appropriately use the search facilities in Windows to retrieve documents efficiently save a file adding a tag for efficient searching purpose • This should be done within the context of day to day saving of work whether it is maths, language, topic or any other area where the pupil is using ICT

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	Sounds Video OneNote Teams Animation

Driver: Searching, processing and managing information responsibly	
	• begin to use more complex strategies to increase relevance of web searches (using quotes round words, Google key words, symbols -, ~) • bookmark websites print web pages • create folders to categorise bookmarks for quick reference • Research project e.g. Fair Trade where the expectation would be to access given websites to make notes and save relevant (copyright free) images to create a presentation

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	• Homework task e.g. to find information on a key figure from WW2 (Hitler, Churchill, Stalin) for a group presentation. In this case it may be beneficial to use the – symbol or "Winston Churchill" to rule out insurance references • Any context which requires the learner to search for relevant, accurate, up-to-date, reliable information can be used to achieve this outcome. Contexts which show this is a transferable skill are especially important so that learners see the value of searching efficiently for information on finances, hobbies, and other information relevant to her/him in her/his personal life. Research project e.g. Fair Trade where the expectation would be to access given websites to make notes and save relevant (copyright free) images to create a presentation Homework task e.g. to find information on a key figure from WW2 (Hitler, Churchill, Stalin) for a group presentation. In this case it may be beneficial to use the – symbol or "Winston Churchill" to rule out insurance references research project e.g. victorian Aberdeen Aberdeen Harbour, including research of primary and secondary sources incl cross-referencing websites with Cd romS, journals and other information texts The use of Google in Topic based work ie Locating Pompeii or Mount Vesuvius when investigating Volcanoes or locating schools when undertaking Glow Collaborative Projects Independently access basic Google Earth controls including rotating, zooming in/out Use the search facility on Google Earth to find specific locations Using Layers such as street views on Google Earth to widen or narrow search and access specific data

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Driver: Awareness of technological developments (Past, Present and Future), including how they work.	
I can investigate how product design and development have been influenced by changing lifestyles. TCH 2-05a I can analyse how lifestyles can impact on the environment and Earth's resources and can make suggestions about how to live in a more sustainable way. TCH 2-06a I can make suggestions as to how individuals and organisations may use technologies to support sustainability and reduce the impact on our environment. TCH 2-07a	***What is technology?*** ○ Definition and examples (phones, computers, robots). ○ Discuss and explore how technology has evolved over time and the impact on society. ○ Explore inventions like the printing press, electricity, and the computer. ○ Discuss how these inventions changed daily life and society ○ **Activity:** Pupils can use collaboration applications such as Padlet to create timeline creation of significant technological milestones (like the invention of the wheel, the telephone, the internet). ○ **Activity:** Chatterpix can be used as a tool for pupils to share their knowledge of inventors and their creations in autobiographical form. ***Understanding Modern Technology*** ○ Discuss smartphones and tablets. ○ Talk about how they work in simple terms (e.g., how a smart phone is made, how a smartphone connects to the internet). ○ **Activity**: Life cycle of a phone using presentation applications such a iMovie or Micorsoft PP or Keynote. This might prompt ethical discussions within the class to then be explored and linked to sustainablity.

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	The Role of Technology in Society • Introduce concepts like virtual reality, robotics, and renewable energy. ClickView has lots of videos and supporting resources for teaching and developing understanding of these concepts. • Discuss potential future impacts on jobs and everyday life. • Benefits and Challenges ○ Discuss the pros and cons of technology (e.g., communication vs. screen time). • **Activity:** AR Makr app can be used to create augmented reality that can be linked to topics or projects within class eg. How the earth orbits the sun. • **Activity:** Debates on a technology topics (e.g., "Is social media more helpful or harmful?") ("Should technology replace human jobs?")

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Digital Citizenship: Cyber-resilience and Internet Safety

Stage	E&O	Resources/ Suggested Activities
Early Years	I can explore, play and communicate using digital technologies safely and securely. **TCH 0-03a**	**Digiduck Stories | Childnet** The Digiduck® collection of stories is aimed at learners aged 3 – 7. The collection includes ebooks, PDFs and a collection of lesson plans and resources. **Smartie the Penguin | Childnet** Smartie the Penguin story. There are two versions of the story that cover different themes depending on the age of the learners. **The Bongles** Learn about Cyber Resilience through the story of the Bongles and the Crafty Crows. Animated story, free book for schools and accompanying lesson packs. **ASL** – **Lego Build and Talk** **Safer Internet Day – SEND**
First	I can extend my knowledge of how to use digital technology to communicate with	**RSHP Lesson Plans** Lesson plans with full guidance on how to deliver and lead discussions on the subject of being 'Safe and Happy Online **Jessie & Friends: online safety education for 4-7s (CEOP.co.uk)**

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	others and I am aware of ways to keep safe and secure. **TCH 1-03a**	The CEOP website has a wealth of resources for teachers. The Jessie and Friends series includes a resource pack for teachers with animations, lesson plans and songs. **SMART Crew guidance and activities | Childnet** Kara and Winston and the Smart Crew is a series of cartoons that covers various topics. There is accompanying packs for teachers available to download. **ASL** – **Lego Build and Talk** **Safer Internet Day – SEND** **Media Balance Is Important** **P2** Media Balance Is Important How do we find a happy balance between our online and offline activities? **P2** Pause for People How do you say goodbye to technology when you don't want to? **Privacy & Security** **P2** Safety in My Online Neighbourhood How do you go places safely online? **Media Balance & Well-Being** **P3** Pause & Think Online How can we be safe, responsible and respectful online? **P3** How Technology Makes You Feel Why is it important to listen to your feelings when using technology? **Privacy & Security** **P3** Internet Traffic Light How do you stay safe when visiting a website or app?

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

		Media Balance & Well-Being **P4** We, the Digital Citizens How can we be good digital citizens? **P4** Device-Free Moments Why is it important to have device-free moments in our lives? **Privacy & Security** **P4** That's Private! What kinds of information should I keep to myself when I use the internet? **Digital Footprint & Identity** **P4** Digital Trails What information is OK to have in your digital footprint? **Relationships and Communication** **P4** Who Is in Your Online Community? How are we all part of an online community? **Cyberbullying, Digital Drama & Hate Speech** **P4** Putting a STOP to Online Meanness What should you do if someone is mean to you online? **News & Media Literacy** **P4** Let's Give Credit! How can you give credit for other people's work?
Second	I can explore online communities demonstrating an understanding of	**RSHP Lesson Plans:** Lesson plans with full guidance on how to deliver and lead discussions on the subject of 'Online/Offline Friends', 'Where do we go Online' and 'Being Smart Online'

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	responsible digital behaviour and I'm aware of how to keep myself safe and secure. **TCH 2-03a**	**Online Safety Resources for Teachers – Be Internet Legends** Be Internet Legends includes a resource pack with lesson plans available for teachers to download. Each lesson is linked to a game that pupils can play on their Empowered Learning iPad. The game reinforces what the pupils have learned in that lesson and provides a form of assessment to check the pupils understanding of what has been taught. **Connect** (ceopeducation.co.uk) A brand new set of resources aimed at 9 – 12 year olds. *Connect* is a CEOP Education resource for children and young people aged 9 to 12. The resource is a set of **four lesson plans** and **five short situational films** involving fictional characters. The resource aims to empower and protect children and young people from on and offline abuse, including sexual abuse, through understanding the principles of healthy relationships and recognising when and how to seek help. **Media Balance & Well-Being** **P5** Your Rings of Responsibility How do digital citizens take responsibility for themselves, their communities and their world? **Privacy & Security** **P5** Password Power-Up How can a strong password help protect your privacy? **Digital Footprint & Identity** **P5** This Is Me How does what I post online affect my identity? **Relationships and Communication** **P5** Our Digital Citizenship Pledge What makes a strong community? **Cyberbullying, Digital Drama & Hate Speech** **P5** The Power of Words

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

		What should you do when someone uses mean or hurtful language on the internet? **News & Media Literacy** **P5** Is Seeing Believing? Why do people alter digital photos and videos? **Media Balance & Well-Being** **P6** My Media Choices What makes a healthy media choice? **Privacy & Security** **P6** Private and Personal Information What information about you is OK to share online? **Digital Footprint & Identity** **P6** Our Online Tracks How does our online activity affect the digital footprints of ourselves and others? **Relationships and Communication** **P6** Keeping Games Fun and Friendly How can I help myself and others be positive and have fun while playing online games? **Cyberbullying, Digital Drama & Hate Speech** **P6** Be a Super Digital Citizen How can we be upstanders when we see cyberbullying? **News & Media Literacy** **P6** A Creator's Rights and Responsibilities What rights and responsibilities do you have as a creator? **Media Balance & Well-Being**

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

		P7 Finding My Media Balance What does media balance mean for me? **Privacy & Security** **P7** You Won't Believe This! What is clickbait and how can you avoid it? **Digital Footprint & Identity** **P7** Beyond Gender Stereotypes How do gender stereotypes shape our experiences online? **Relationships and Communication** **P7** Digital Friendships How do you keep online friendships safe? **Cyberbullying, Digital Drama & Hate Speech** **P7** Is It Cyberbullying? What is cyberbullying and what can you do to stop it? **News & Media Literacy** **P7** Reading News Online What are the important parts of an online news article?

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Computing Skills: Coding/ Programming

Stage	E&O	Benchmarks	Resources/ Suggested Activities
Early Level	I can explore computational thinking processes involved in a variety of everyday tasks and can identify patterns in objects or information. **TCH 0-13a**	• Identifies and sequences the main steps in an everyday task to create instructions/an algorithm for example, washing hands. • Classifies objects and groups them into simple categories for examples, groups toy bricks according to colour. • Identifies patterns, similarities and differences in objects or information such as colour, size and temperature and simple relationships between them.	**Patterns** https://www.barefootcomputing.org/resources/awesome-autumn https://www.barefootcomputing.org/resources/super-space https://www.barefootcomputing.org/resources/boats-ahoy
Early Years	I understand that sequences of instructions are	• Demonstrates an understanding of how symbols can represent process and information.	**Controlling Technology**

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	used to control computing technology. **TCH 0-14a** I can experiment with and identify uses of a range of computing technology in the world around me. **TCH 0-14b**	• Predicts what a device or person will do when presented with a sequence of instructions for example, arrows drawn on paper. • Identifies computing devices in the world (including those hidden in appliances and objects such as automatic doors).	*https://robotsandcomputersclub.wordpress.com/2013/11/07/how-to-control-the-beebot/* *https://www.tts-group.co.uk/blog/2018/07/18/bee-bot-a-teachers-guide.html* **Technology Around Me** https://www.bbc.co.uk/bitesize/topics/zppdxg8/articles/zc4x6sg
Early Years	I can develop a sequence of instructions and run them using programmable devices or equivalent **TCH 0-15a**	• Designs a simple sequence of instructions/algorithm for programmable device to carry out a task for example, directional instructions: forwards/backwards. • Identifies and corrects errors in a set of instructions.	**Sequences and Algorithms** https://education.gov.scot/resources/computing-science-gender-lesson-plans-resources-and-activities/ (Create a Dance) https://www.csunplugged.org/en/topics/kidbots/rescue-mission/
First Level	I can explore and comment on processes in the world around me making use of core computational thinking concepts	• Follows sequences of instructions/algorithms from everyday situations for example, recipes or directions, including those with selection and repetition. • Identifies steps in a process and describes precisely the effect of each step. • Makes decisions based on logical thinking including IF, AND, OR and	**Codes and Algorithms** https://www.bbc.co.uk/bitesize/topics/zvsc7ty/articles/zykx6sg https://www.bbc.co.uk/bitesize/topics/zvsc7ty/articles/z3whpv4 **Logical Reasoning** https://www.bbc.co.uk/bitesize/topics/zkcqn39/articles/zxgdwmn#z4pkwnb

Clare Braisby, Joanne Hope, Michael Kynaston, Louise McKenna, Maureen Murray, Fran Platt, Joanne Russell-Maden

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	and can organise information in a logical way **TCH 1-13a**	NOT for example, collecting balls in the gym hall but NOT basketballs, line up if you are left-handed OR have green eyes. • Collects, groups and orders information in a logical, organised way using my own and others'" criteria (MNU 1-20a and b).	
First Level	I understand the instructions of a visual programming language and can predict the outcome of a program written using the language. **TCH 1-14a** I understand how computers process information. **TCH 1-14b**	• Demonstrates an understanding of the meaning of individual instructions when using a visual programming language (including sequences, fixed repetition and selection). • Explains and predicts what a program in a visual programming language will do when it runs for example, what audio, visual or movement effect will result. • Demonstrates an understanding that computers take information as input, process and store that information and output the results.	**Programming** https://www.barefootcomputing.org/resources/make-a-game-project https://www.bbc.co.uk/bitesize/topics/zvsc7ty/articles/zqnc4wx
First Level	I can demonstrate a range of basic problem-solving skills by building simple programs	• Simplifies problems by breaking them down into smaller more manageable parts. • Constructs a sequence of instructions to solve a task, explaining the expected output from	**Debugging** https://www.bbc.co.uk/bitesize/topics/zvsc7ty/articles/ztgjq6f

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

	to carry out a given task, using an appropriate language. **TCH 1-15a**	each step and how each to contributes towards solving the task. • Creates programs to carry out activities (using selection and fixed repetition) in a visual programming language. • Identifies when a program does not do what was intended and can correct errors/bugs. • Evaluates solutions/programs and suggests improvements.	https://www.csunplugged.org/en/topics/error-detection-and-correction/parity-magic-junior/ **Creating a programme** https://www.csunplugged.org/en/topics/kidbots/sending-a-rocket-to-mars/
Second Level	I understand the operation of a process and its outcome. I can structure related items of information. **TCH 2-13a**	• Compares activities consisting of a single sequence of steps with those consisting of multiple parallel steps, for example, making tomato sauce and cooking pasta to be served at the same time. • Identifies algorithms / instructions that include repeated groups of instructions a fixed number of times and/or loops until a condition is met. • Identifies when a process is not predictable because it has a random element for example, a board game which uses dice. • Structures related items of information for example, a family tree (MNU 2- 20b). • Uses a recognised set of instructions/ an algorithm to sort	**Algorithms** https://www.bbc.co.uk/bitesize/topics/zs7s4wx/articles/zqrq7ty#z6yj2v4 https://www.barefootcomputing.org/resources/crazy-character-algorithms https://www.barefootcomputing.org/resources/spelling-rules-algorithms https://classic.csunplugged.org/documents/activities/sorting-network/unplugged-08-sorting_networks-2010.pdf

Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

		real worlds objects for examples, books in a library or trading cards.	
Second Level	I can explain core programming language concepts in appropriate technical language. **TCH 2-14a** I understand how information is stored and how key components of computing technology connect and interact through networks. **TCH 2-14b**	• Explains the meaning of individual instructions (including variables and conditional repetition) in a visual programming language. • Predicts what a complete program in a visual programming language will do when it runs, including how the properties of objects for example, position, direction and appearance change as the program runs through each instruction. • Explains and predicts how parallel activities interact. • Demonstrates an understanding that all computer data is represented in binary for example, numbers, text, black and white graphics. • Describes the purpose of the processor, memory and storage and the relationship between them. • Demonstrates an understanding of how networks are connected and used to communicate and share information, for example the internet.	**What is a computer programme?** https://www.bbc.co.uk/bitesize/topics/zkcqn39/articles/z23q7ty https://www.barefootcomputing.org/resources/investigating-outputs (Lego WeDo) **What are variables?** https://www.bbc.co.uk/bitesize/topics/zkcqn39/articles/zw3dwmn **Binary** https://www.csunplugged.org/en/topics/binary-numbers/ **Graphics as binary** https://www.csunplugged.org/en/topics/image-representation/colour-by-numbers/ **The Internet** https://www.bbc.co.uk/bitesize/topics/zkcqn39/articles/z2nbgk7#zcrxhcw https://www.barefootcomputing.org/resources/modelling-the-internet **Parts of a Computer** https://www.bbc.co.uk/bitesize/topics/zvsc7ty/articles/z9myvcw

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Boroughmuir Learning Community
DIGITAL CURRICULUM OVERVIEW

Second Level	I can create, develop and evaluate computing solutions in response to a design challenge **TCH 2-15a**	• Creates programs in a visual programming language including variables and conditional repetition. • Identifies patterns in problem solving and reuses aspects of previous solutions appropriately for example, reuse code for a timer, score counter or controlling arrow keys. • Identifies any mismatches between the task description and the programmed solution and indicates how to fix them.	**Creating Programmes and Code** https://education.minecraft.net/en-us/lessons/basic-moves-the-agent (first of 10 progressive lesion in Minecraft Education which builds understanding of writing programmes). **Debugging** https://www.bbc.co.uk/bitesize/topics/zkcqn39/articles/ztkx6sg https://www.barefootcomputing.org/resources/pizza-pickle-scratch-debugging