Digital Literacy Strategy

The Benchmarks within Technologies are organised within five contexts:

Technological Developments in Society and Business

* Awareness of technological developments (Past, Present and Future), including how they work.

* Impact, contribution, and relationship of technologies on business, the economy, politics and the environment.

Computing Science

* Understanding the world through computational thinking.

* Understanding and analysing computing technology.

* Designing, building and testing computing solutions.

Digital Literacy

* 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.

Craft, Design, Engineering & Graphics

* Designing and constructing models/ products.

* Exploring uses of materials.

* Representing ideas. concepts and products through a variety of graphic media.

* Application of engineering.

Food and Textile Technology

* Food and textiles.

Some of these Benchmarks fall within our three-year cycle of inter-disciplinary contexts such as Food & Textiles, Engineering and Technological Developments) and as such the Technologies tracking document should be referred to.

Many of these Benchmarks fall within our Digital Literacy curriculum. Following the principles outlined in the Professional Learning Paper, it is essential that pupils can transfer these skills across a range of technologies and software. Therefore our Digital Literacy programme is designed to revisit skills in a range of relevant contexts over a three-year cycle. In the Dumfries High cluster, we aim to build depth and coherence by linking the Digital Literacy with the inter-disciplinary contexts where possible.

Overarching themes that will thread through each unit over the three-year cycle:

- **Computing Science: understanding and analysing the features and functions of digital technology.**
- **Technological Developments in society & business: explore and use technologies, considering how they help us.**
- **Digital Literacy: cyber resilience and safety when using digital technologies.**

Building Blocks of our Digital Literacy Programme

Presentations

Using digital products to achieve a purposeful outcome.

Software includes:
2Simple
Textease
Publisher
Powerpoint
PagePlus
WebPlus
ComicLife

Multimedia and Graphics

Using digital products to achieve a purposeful outcome;

Represent ideas, concepts and products through a variety of graphic media.

Software includes:
Sound- 2Simple, digital microphone, Audacity, podcasting
Graphics- 2Simple, Textease, PhotoPlus, DrawPlus
PhotoCollage, ComicLife, digital camera,
Movies: MovieMaker, Imovie, MoviePlus, green screen
3D graphics: Minecraft EDU, TinkerCAD

Safety & Communication

Cyber resilience and Internet Safety; managing information responsibly.

Teaching points include:
Passwords
Screen name
Avatar
Location services
E-mail etiquette: ZIP IT, BLOCK IT, FLAG IT
Social media using Yammer
Blogging and vlogging using GLOW
Safety during online gaming

Search and Research

Searching, processing and managing information responsibly.

Teaching points include:
Using the Internet and the World Wide Web responsibly
Navigating websites using hyperlinks
Bookmarking
How search engines work
Comparing different search engines
Considering validity and bias of information
Copyright

Computing Science

Understanding the world through computational thinking;

Designing, building and testing computing solutions.

Software/ hardware includes:
Programmable toys: Beebots, Turtle, 2Simple
Coding: Tynker, Code.Org, Every Child Can Code
Animation- 2Animate, Animation Studio, DrawPlus, Scratch
Game design: 2DIY, Textease, Scratch, Minecraft EDU
Electronic coding: Arduino, Microbit, Raspberry Pi, Sphero

Data Handling

Understanding and analysing computing technology;

Designing, building and testing computing solutions.

Software includes:
Spreadsheets: 2Simple, Textease, Excel
Databases: 2Simple, Textease
Logging and Sensors: Arduino, Microbit, Raspberry Pi, Sphero

Early Level P1 programme

Presentations

Using digital products to achieve a purposeful outcome.

Touch-typing
2Simple
Textease for more able

Multimedia and Graphics

Using digital products to achieve a purposeful outcome;
Represent ideas, concepts and products through a variety of graphic media.

Animation: 2Animate and DrawPlus
Graphics: 2Simple drawing, digital camera
Sound: 2Simple and MicroSpeak

Safety & Communication

Cyber resilience and Internet Safety; managing information responsibly.

How to log on;
Passwords;
Using the phone;
Other ways to communicate

Search and Research

Searching, processing and managing information responsibly.

Using the Internet safely;
Using a search engine;
Navigating a website using hyperlinks
e.g. CBeebies

Computing Science

Understanding the world through computational thinking;
Designing, building and testing computing solutions.

Programmable toys: Beebots and 2Simple
Coding: code.org
Animation: 2Animate and DrawPlus
Game design: 2DIY

Data Handling

Understanding and analysing computing technology;
Designing, building and testing computing solutions.

2Simple spreadsheets and databases

Overarching themes that will thread through each unit over the three-year cycle:

- **Computing Science: understanding and analysing the features and functions of digital technology.**
- **Technological Developments in society & business: explore and use technologies, considering how they help us.**
- **Digital Literacy: cyber resilience and safety when using digital technologies.**

Please refer to Digital Literacy- Computing Science and Cyber Safety planners for outline of skills to be developed and consolidated through the year.

First Level Three-year Cycle

Digital Literacy: cyber safety and Resilience

Running through each year every year.

Computing Science: understanding and analysing the features and functions of digital technology.

Running through each year every year.

Presentations Year 1

Textease and Publisher

Multimedia Year 1

Sound & graphics within Textease;
Moviemaker
Minecraft EDU

Communication Year 1

E-mail and blogging

Search & Research Yr 1

Linked to context,
Personal project

Computing Science Yr 1

Beebot/Turtle
2DIY game design

Data Handling Yr 1

Spreadsheets and Databases- 2Simple

Presentations Year 2

PagePlus and PowerPoint

Multimedia Year 2

Sound- Audacity
Graphics- Serif MoviePlus
TinkerCAD

Communication Year 2

Yammer and Internet Safety

Search & Research Yr 2

Linked to context,
Personal project

Computing Science Yr 2

Animation- 2Animate
Code.org/learn

Data Handling Yr 2

Spreadsheets- Textease
Microbit

Presentations Year 3

Comics and Powerpoint

Multimedia Year 3

Sound- Audacity
Graphics: PhotoCollage
Green screen
Minecraft EDU

Communication Year 3

Podcasts and vlogging

Search & Research Yr 3

Linked to context,
Personal project

Computing Science Yr 3

Animation- Serif
Game design- Tynker

Data Handling Yr 3

Databases- Textease
Arduino

Second Level Three-Year Cycle

Digital Literacy: cyber safety and Resilience

Running through each year every year.

Computing Science: understanding and analysing the features and functions of digital technology.

Running through each year every year.

Presentations Year 1

Word, Publisher and PowerPoint

Multimedia Year 1

Graphics- Word, Minecraft EDU
Sound- Audacity
Moviemaker

Communication Year 1

E-mail, Yammer and blogging

Search & Research Yr 1

Linked to context, Personal project

Computing Science Yr 1

Turtle and Tynker
Serif Animation
Game design- Textease

Data Handling Yr 1

Textease spreadsheets and databases

Presentations Year 2

Publisher and PagePlus

Multimedia Year 2

Graphics- DrawPlus
Sound- GarageBand
MoviePlus

Communication Year 2

Yammer and Internet Safety

Search & Research Yr 2

Linked to context, Personal project

Computing Science Yr 2

Arduino and Microbit
Animation Studio
Game design- 2DIY

Data Handling Yr 2

Data logging and sensors- Arduino
Textease database

Presentations Year 3

Comics, PagePlus and Powerpoint

Multimedia Year 3

Graphics- PhotoPlus
Sound- DJ Mixing
Minecraft EDU
IMovie

Communication Year 3

E-Mail, vlogging and podcasting

Search & Research Yr 3

Linked to context, Personal project

Computing Science Yr 3

Code.org/learn
Game design- Scratch
Raspberry Pi and Microbit

Data Handling Yr 3

Data logging and Sensors- Microbit
Textease spreadsheet

Digital Literacy: Cyber safety and resilience

Benchmarks	Early	First	Second
	Cyber resilience and internet safety		
Experiences and Outcomes	1-08a, 2-08a, 3-08a.		
Learning statements (from the Progression Frameworks)	Learners begin to demonstrate online safety skills and can begin to make informed choices when using online technology. They can begin to demonstrate an understanding for the need for passwords & pin codes on devices (tablets, smart phones & computers).	Learners begin to demonstrate safe and responsible use of a wide range of technologies, including the internet and how to safely communicate with others. They begin to demonstrate an understanding for the need for secure passwords and keeping the password safe. They begin to demonstrate an understanding of personal data and strategies to protect this.	Learners demonstrate an awareness of the safety issues of giving away personal information online and can identify the differences between private and personal details that can identify them uniquely. They demonstrate strategies to protect their personal data, and are beginning to understand their digital footprint. They are beginning to understand different malicious uses of technology, and know how to report this.
Skills to be developed	› Identify a range of technological devices (e.g. smartphone, tablet, laptop, games console); › Use of usernames and passwords on technological devices; › Basic online safety skills.	› Discuss and debate about using new technologies; › Discuss what is meant by personal data; › Create a strong password; an avatar and a screen-name; › Discuss ways of protecting devices.	› Create a strong password; an avatar and a screen-name; › Self-protection online through e-mail, social media, the World Wide Web and gaming; › Identify ways to protect devices and manage their digital footprint; › Strategies for reporting inappropriate or malicious uses of technology.
Knowledge and understanding	✓ Use own username and password to log onto the school network; ✓ Recognise security systems in their environment; ✓ Access a given website safely.	✓ Identify a range of technological devices that connect to the Internet (e.g. smartphone, tablet, laptop, games console); ✓ Explore how to protect devices (including firewalls, anti-virus software; settings; secure websites) ✓ Identify personal data and why this should be protected online; ✓ Explore how to protect personal data (Zip It); ✓ Identify risks associated with email and social media; ✓ Know how to report unsafe use of technology (Block It, Flag It).	✓ Identify times when they are online, and ways to protect themselves (including firewalls; use of secure websites/ anti-virus software/ privacy settings; blocking of location services); ✓ Awareness of safety issues of giving away personal information online; ✓ Differences between private and personal details that can identify them uniquely; ✓ Identify ways they leave a digital footprint (e.g. through Internet searches, deleted emails, location services, messages on social media or gaming); ✓ Explore malicious uses of technology (including hacking, viruses, phishing, cyber-bullying, false identities, catfishing) ✓ Know how to block malicious activity and how to report these; ✓ Use Zip It, Block It, Flag It.
Exemplars Make/Say/ Write/Do	Learner will relate password & codes used within the nursery e.g. secure door system and staff ID badges. Learners can begin to engage in group discussions on rules for, and ways of, keeping safe, and about people who can help them to stay safe. Learners will state why they have a username and password.	Learners can identify all devices at home connected to the internet, and ways they are protected. Learners are given opportunities to discuss and debate new technologies and the ways in which they can help us communicate with others. Learners can identify risks associated with email and social media, describing safe and responsible online behaviours. Learners can explain “Zip It, Block it, Flag it”.	Learners investigate, research and debate real-world real-time cyber security breaches. Learners can make comparisons between information they would be happy to give away in the offline world compared to the online world. Learners actively protect themselves online and describe how they have done so. Learners can describe different malicious uses of technology, and identify strategies to deal with these.

Benchmarks	Early	First	Second
	Understanding and analysing computing technology		
Experiences and Outcomes	**TCH 0-03a, TCH1-03a, TCH 2-03a**		
Learning statements (from the Progression Frameworks)	Learners explore and can identify common uses of Computing Science in the world around them.	Learners explore uses of Computing Science in the world around them and can begin to identify the main features of digital technology – including key components and uses of computers, programs and the Internet.	Learners can identify the main features of Computing Science – including key components and uses of computers, programs and the Internet. Learners have an understanding of how the technology works such as computer networks including the Internet.
Skills to be developed	➢ Log on and off the computer; ➢ Move objects on an interactive Whiteboard; ➢ Open programs; ➢ Open, save, close and retrieve work in a range of programmes; ➢ Print a document; ➢ Mouse Skills-including click and drag, single click, double click; ➢ Use devices that link to the computer e.g. digital microphone, digital camera. Range of skills will also be developed through the core units.	➢ Use a range of peripherals that connect to computers e.g. scanner, digital camera, digital microphone, camcorder; ➢ Use a range of computing technology e.g. Sphero, Beebot, Micro:bit ➢ Log on and off with own password to the network/Glow; ➢ Manipulate the interactive Whiteboard e.g. calibrate, freeze screen; ➢ Open a given program through different locations e.g. desktop, Desk Tools; ➢ Open, save, close and retrieve work in a range of programmes; ➢ Manage 'My Documents' including creating folders. ➢ Save a document to a given location within either My Documents or within the Shared Folder; ➢ Print a document to a specified printer; ➢ Locate a document using the Search facility ➢ Use a search engine to locate required information	➢ Use an increasing range of peripherals to create own work, upload to computer and then manipulate within available software; ➢ Program/ code with a range of computing technology e.g. Arduino and Raspberry Pi; ➢ Create, manipulate and share folders within the school network, via GLOW or the One Drive; ➢ Use a range of memory storage e.g. burning a CD-ROM, using a memory stick or zip drive, saving documents to the One Drive; ➢ Set up advanced printer properties; ➢ Use Print Preview to check work before printing; ➢ Review My Documents and map their own folders, deleting or renaming as needed; ➢ Send own work as an attachment to an e-mail, encrypting if needed; ➢ Bookmark a website for ease of us; ➢ Use Tabbed Browsing to cross-check information ➢ Take a screenshot and save this for use in a piece of work.
Knowledge and understanding	✓ Understand there are different forms of computing technology e.g. tablet, Beebot, smartphone, laptop, PC, gaming device; ✓ Name core components of a computer e.g. keyboard, monitor; ✓ Name ways we can communicate or share ideas with computing technology; ✓ Understand that computers have to be told what to do in order to function; ✓ Understand some devices link to computing technology e.g. digital camera, digital microphone, interactive whiteboard, printer.	✓ Understand how to calibrate the interactive whiteboard; ✓ Understand the areas within the computer e.g. hard drive, Shared Folder, My Documents; ✓ Identify why folders within My Documents are useful; ✓ Upload own photos, sound or video from a peripheral onto the computer; ✓ Set properties when printing a document on the network; ✓ Identify software types e.g. programmes used to present data, or software that edits graphics; ✓ Begin to understand how the Internet and the World Wide Web work, and link this knowledge to cyber dangers such as hacking.	✓ Identify the components that help a computer link to the Internet or World Wide Web e.g. Wi-Fi , router and modem; ✓ Explain the difference between the Internet and the World Wide web; ✓ Map the school network to show understanding of the computer and desktop components e.g. hard drive, Shared Folder, Desk Tools; ✓ Save, retrieve and edit a range of work to different memory capacities e.g. Shared Folder, My Documents, memory stick or CD-ROM; ✓ Identify the advantages and disadvantages of My Documents vs. Shared Folder vs One Drive; and memory stick, zip drive and computer hard drive; ✓ Identify appropriate software for a given task, and give reason for choice.