Leith Primary School

Equitable Creative Coding Award for ELC and Primary Schools

Computational Thinking in the World Around Us

Learners are taught to: (1) Identify shapes, patterns, processes and sequences in a range of activities across the curriculum; (2) Recognise the benefits of working logically, progressively and sequentially in a range of contexts; (3) Classify, sort, group, arrange and compare information from a range of sources according to characteristics.

Evidence should consist of a range of examples including:

Using logic processes. such as AND NOT, OR NOR NAND, IF-THEN – ELSE to make logical decisions
Identifying, continuing and creating patterns of our own e.g., scarves, tartan, loose parts, threading beads and through Barefoot Computing Early Years activities e.g., Awesome Autumn, Winter Warmers, Crazy Character, Shopping list.
Introduce the concept of 'algorithms', see BBC Learning resource What is an Algorithm.
Identifying, continuing and creating sequences of instructions of our own and e.g.,
handwashing, toothbrushing, simple recipes;
setting the table, retelling a story with a beginning, middle and end;
advertise important details;
plan a new story with a beginning, middle and an end, introducing Scratch Cat via Scratch Jr example projects.
Identifying and classifying different types of computing technology.
Identifying, continuing and creating groupings of our own such as fruit and vegetables, materials that float and sink, dinosaurs; carnivores, herbivores, and omnivores, voting for favourite book/song.
Identifying what grouped objects have in common with each other.

Links to key policies:

Early Years | EN | Barefoot Computing

Open

Scratch Jr example projects

Open

BBC Learning - What Is An Algorithm?

Open

Early Years | Unplugged | Kodable ideas and resources

Open

Early Years | Unplugged | STEM-based activities for KS1

Open

Early Years | Unplugged | Barefoot Activity: Elephants Cats and Cars

Open

Validation:

Awarded Mentor

Validator comments:

The use of digital technology is a fundamental part of the Leith Primary School's vision and enables pupils to have choice, flexibility, control and independence in their learning. Computational thinking is embedded across the school and in a variety of activities that help children to identify shapes, patterns, processes and sequences, across the curriculum. The school also has an active pupil digital leaders group which provides significant impact. Leadership is very much distributed with strong pupil voice. The pupil digital leaders are consulted and consult with others on resources, where the school is now and barriers to progression in digital and what they need to do. There is great enthusiasm. The school has invested in a range of devices to support the development of coding skills. The school has introduced sequences and patterns, through a variety of mediums, for example, in art classes. Children have created their own games and followed sequencing and patterns to make music and podcasts, using Garageband. The Digital Leaders have an active leadership role and learn, pilot and trial digital technologies before then cross-training other classes.

Understanding Computational Processes

Learners are taught to: Identify and use different forms of graphical, textual, numerical and algorithm symbols to represent different forms of information; (1) Use such information to create patterns of behaviour in a variety of contexts; (2) Match textual and graphic codes with basic computer languages to show they are used to direct actions.

Evidence should consist of a range of examples including:

The list below is neither exhaustive nor mandatory. Some examples may not apply to your context

Use coding of robot and link the statements to graphic symbols.

Exposure to different forms of information;

e.g., blood sugar monitors, step counters, route trackers, timers, thermometers, supermarket scanners.

Role play or drawings/images to illustrate the pattern/sequence of instruction to demonstrate how we think the computing technology works/how to use, see BBC Bitesize and Hello Ruby resources

Transfer prior knowledge and sequences of instructions into basic block-based coding to direct actions; see algorithm sequencer, direction/arrow algorithm card visuals, Make your own BeeBot story mat, BeeBot mat scenes, see practitioner resources link.

Draw Scratch Cat and use Scratch Jr block images to direct Scratch Cat to move; See Scratch Jr block images resource.

Learn through trial and error/tinkering;

Work together to test each other's sequence of instructions, see CS unplugged KidBots resources, Human Codeapillar resources see practitioner resources link.

Identify errors/look for bugs (debug) and persevere with improving the algorithm, see BBC Learning.

Predict what a robot/person will do when instructions are given to them.

Explain/identify different coding blocks Including beginning, middle and end, explore a range of emulators/apps e.g., BeeBot, Codeapillar, Code.org, Scratch Jr

Explain how repeating processes can help to simplify coding and other everyday activities.

Links to key policies:

Nina and the Neurons: Go Digital – CBeebies – BBC

Open

What is digital technology? – BBC Bitesize

Open

How computers have changed - BBC Bitesize

Open

What is a computer system? – BBC Bitesize

Open

What are computer games? – BBC Bitesize

Open

Software – 1st level Computing Science and ICT – BBC Bitesize

Open

BBC Learning – What Is Coding – Rumpus

Open

What's inside a computer? | Hello Ruby (loosely based, could model, paint, build)

Open

Bee-Bots Basics Activity | Resources | Barefoot Computing

Open

ScratchJr – block images

Open

Practitioner resources

Open

Pre-reader Express (2023) - Code.org

Open

Bee-Bot on the App?Store (apple.com)

Open

Bee-Bot Online Emulator (terrapinlogo.com)

Open

Codeapillar App

Open

Kidbots - CS Unplugged

Open

BBC Learning - What Are Computer Bugs?

Open

Kodable – Make Shapes with Code, Grades K-1 (Pre-reader) play for free

Open

Validation:

Awarded Mentor

Validator comments:

Leith envisions an educational environment where digital technology is seamlessly integrated, enhancing learning experiences and preparing pupils for a future in a rapidly evolving digital world. The digital strategy aims to empower, engage, and inspire both pupils and teachers through innovative use of technology. The school has clear digital strategic goals to enhance computational thinking, ensuring that every pupil becomes proficient in digital skills, understanding computational processes, critical thinking, and problem-solving through integrated digital learning experiences in all subject areas. Children discussed with me coding Microbits, coding with Scratch and demonstrated following sequences when making music. Teachers and pupils use digital technologies extensively, coding with Minecraft, Spheros and Scratch. Pupils and teachers can clearly identify how digital technologies make a difference to their learning and teaching. The school demonstrates in a variety of ways how the use of technology enhances the learning experience.

Designing, Building and Testing Coding Solutions

Learners are taught to: (1) Use coding language to build sequences of actions; (2) Where appropriate, change, modify and extend those actions; (3) Co-create coding systems using different languages to create a range of actions.

Evidence should consist of a range of examples including:

The list below is neither exhaustive nor mandatory. Some examples may not apply to your context

Transfer knowledge of creating sequences for Scratch Cat using Scratch Jr block images onto the Scratch Jr app; see Scratch Jr Teach resource and OctoStudio app, see OctoStudio Support resource.
Identify if a sequence has worked or not. Say how to fix a mistake (debug) in a sequence of instructions;
Break down a problem into a set of programing steps
Predict what coding sequences will do;
Anticipate difficulties in terms of major and minor barriers to progress;
Assess the success or a sequence of actions and how to refine, modify and improve sequences;

Links to key policies:

ELC Independent Learning Pathway – DigiLearn (glowscotland.org.uk)

Open

Scratch Jr app

Open

ScratchJr - Teach

Open

OctoStudio: Support

Open

Accessible Adventures in Coding (barefootcomputing.org)

Open

Direction/arrow algorithm cards/visuals

Open

Direction arrow cards from Code-it UK.

Open

ELC Independent Learning Pathway – DigiLearn (glowscotland.org.uk)

Open

BeeBot Mat Scenes

Open

Science Sparks: Make your own BeeBot Map

Open

Algorithm Sequencer in Early Years

Open

Validation:

Awarded Mentor

Validator comments:

There is a culture of using technology to support stealth learning. Pupils are enjoying coding, playing maths games etc and are clearly learning more than they realise. They seem to be just 'having fun', but

they are learning by stealth, and what they are learning is cross-curricular, covering several subject areas. There was significant pride by both staff and pupils when talking about their work and achievements. Teachers are calling upon all three domains of knowledge - content, pedagogy and technological - to set up projects that exploit the technology to promote active, engaged and productive learning. Children have used coding language to create a series of instructions within a game. Children discussed creating their own digital game using Scratch and then tried to beat their highest score. Children learn directional language, for example, using unplugged coding where pupils programmed their classmates to follow a route.

Building Equitable Creative Coding Principles across the Curriculum

Educators are provided with opportunities to: (1) Contribute to a systemic and strategic approach using Computer Science concepts and principles to promote strong links to learning; (2) Collaborate with colleagues inside and outside the school to create activities and resources; (3) Liaise with key personnel across a wide range of external agencies and associations to support their own development and that of their learners.

Evidence should consist of a range of examples including:

Information/minutes from strategy meetings or other forms of planning a strategic approach to ECCA;
Records of events involving other organisations, colleagues or support services. Review of how collaborative activities were implemented in the learning context.
Examples of links with external agencies/ factories and other organisations.
Running pupil run coding clubs to cascade knowledge of CS to younger pupils (for example using digital leaders).

Links to key policies:

Computing Science – DigiLearn (glowscotland.org.uk)

Open

Scratch - Ideas (mit.edu) Scratch activities and tutorials

Open

Scratch - Educators (mit.edu) Teacher Account

Open

Scratch SEC (Slack)

Open

Validation:

Awarded Mentor

Validator comments:

The use of digital technology is a fundamental part of the school's vision and enables pupils to have choice, flexibility, control and independence in their learning. Pupils are encouraged to share their digital achievements at school assemblies. The culture is very much inclusive, allowing everyone to share ideas about using technology, make choices and trying things out. This is the case for both pupils and staff. There is no top-down dictatorship on how technology should be utilised, but a collaborative and inclusive approach with both staff and pupils. There is a strong pupil voice throughout the school, for example, pupils have a say in how technology is used. The school demonstrates how they have not forced new technology into old pedagogy. There has been a paradigm shift. It is about a new pedagogy, different skills for teachers and engaged and empowered learners supported by digital infrastructure accessible to all pupils. The school demonstrates a strong culture of trust and communication between parents / guardians / carers and their pupils. Staff also have CPD events. Staff training for digital technology is regularly built into school year. All teachers have engaged in professional development in digital technologies, based on the school Digital Learning and Teaching strategy. Teachers are supported and have the freedom to have a go with technology, test things out and have a go. Staff are proactive in keeping up-to-date with technology for learning and support each other in sharing knowledge.

Collaboration, creativity, problem-solving and reflection in using coding to solve real-world problems

Learners are provided with opportunities to: (1) Collaborate with others in relation to identifying real-life problems and designing solutions; (2) Link with designers, programmers and other experts to explore how basic computing elements work; (3) Evaluate the effectiveness and efficiency of programs and algorithms in a range of contexts.

Evidence should consist of a range of examples including:

Collecting data from a range of sources and classifying, grouping, sorting for a range of purposes.
Talk to experts, for example online, about how they solve problems and liaise with users and clients.
Linking with local further education establishments I.e. Colleges and Universities.
Create an example of project based learning that:
Allows learners to explore a problem from a range of perspectives (Function, aesthetics, cost, value etc.).
Provides different roles such as customer, programer, end-user, manufacturer;
Uses group collaboration to support deeper learning and ownership.

Links to key policies:

Make it Happen – JP Morgan - Frances

Open

Micro:bit – Lorna Gibson (Do Your Bit)

Open

Code Club

Open

Tech She Can

Open

Validation:

Awarded Mentor

Validator comments:

Pupils across all year groups demonstrated knowledge and enthusiasm in the use of technology, for example, learn coding to develop critical thinking and problem-solving skills. The use of Micro: bits have empowered students to build digital games, devices, and inventions, fostering creativity and a maker's mindset. There are several examples of pupils personalising their learning, having choice in the curriculum and the use of technology engaging pupils with tasks like researching online, sharing, and presenting. The School Digital Leaders select coding activities for the school for both home and school learning. Technology is used to support a strong school culture and community, for example, in the use of

assemblies. There is a culture of using technology to support stealth learning. The school with Digital Leaders have led support sessions to develop coding skills across the school.

Final Recommendations:

It is clear that computational thinking is well embedded in classroom practice. The use of digital tools for learning and teaching is fully integrated in the whole School Improvement Plan. Leith Primary School exude a strong sense of the value of the use of digital technologies in enhancing and supporting learning and teaching. The school is clearly committed to investing in digital technologies, in order to motivate and inspire learners, with the aim of enabling them to make a significant contribution to our growing digital world, and successfully equipping them with essential skills for life and work. There is a confidence and enthusiasm within staff and pupils about the positive impact digital technologies are having on learning and teaching, and in assisting in planning and tracking of activities and learner progress. There is a clear recognition of the benefits being brought to enhancing learning and teaching by the use of digital technology to connect with organisations, cluster schools and individuals outside of the school. Digital Leaders explained confidently, eloquently and with enthusiasm how they were making use of digital technology to support their own learning, and how they are sharing with others in the school. The school's Digital Leads and HT provide strong digital leadership and support across the school. Digital Leaders share their digital skills, enthusiasm and experience to promote and support digital learning. There are effective structures in place for the school to communicate with parents/carers about digital and other skills their children are developing, and opportunities are provided for parents/carers to engage digitally with the school and teachers. The school is clearly committed to embedding digital technologies and ensuring continuous improvement. I believe that the school has met the criteria for the Equitable Creative Coding Award. I recommend that the school should also be invited to become a mentor school as they have the skills and capacity to do so. I encourage the school to apply for the SELFIE Award https://awards4selfie.eu/ . I'd recommend the school considers in the future developing Digital Awards and training to support parents and the wider community.

Awarded By

Validator

Name: Katharine Jewitt **Email:** Katharine@digitalschoolsawards.com **Awarded at:** 2025-06-09 17:54:03

Coordinator

Name: Aoife Admin O'C **Email:** aoife@digitalschoolsawards.com **Awarded at:** 2025-06-09 17:54:03