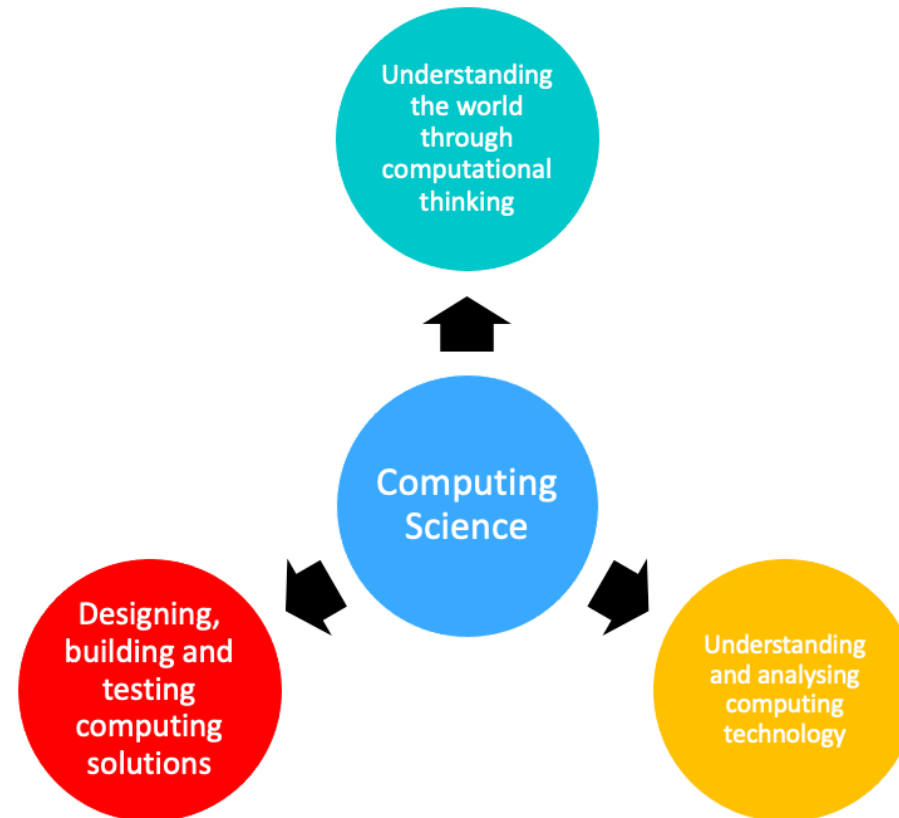
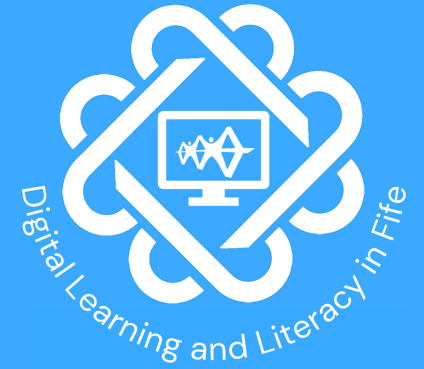


Computing Science Early Level



Early Level Computing Science



Curriculum Organiser	Experiences and Outcomes	Benchmarks
Understanding the world through computational thinking	I can explore computational thinking processes involved in a variety of everyday tasks and can identify patterns in objects or information. TCH 0-13a	<ul style="list-style-type: none"> 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.
Understanding and analysing computer technology	<p>I understand that sequences of instructions are used to control computing technology. TCH 0-14a</p> <p>I can experiment with and identify uses of a range of computing technology in the world around me. TCH 0-14b</p>	<ul style="list-style-type: none"> Demonstrates an understanding of how symbols can represent process and information. 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).
Designing, building and testing computing solutions	I can develop a sequence of instructions and run them using programmable devices or equivalent. TCH 0-15a	<ul style="list-style-type: none"> 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.

Early Level Computational Thinking



Curriculum Organiser	Experiences and Outcomes	Benchmarks
Understanding the world through computational thinking	I can explore computational thinking processes involved in a variety of everyday task and can identify patterns in objects or information. TCH 0-13a	<ul style="list-style-type: none"> 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.

What the learning may look like in Fife	Glossary of terms
<ul style="list-style-type: none"> Reorganise a list of steps in a logical order to complete a task. Sort objects such as beads or Lego together into groups of similar colour and size. When exploring sorting and identifying patterns link with Shape, Position & Movement and Data Handling Progression Pathway. Use resources from Barefoot Computing to support exploration of Computing Science. <p>Visit the Computing Science Progression site for further ideas and resources.</p>	<ul style="list-style-type: none"> Algorithm - A list of instructions that describe how to do a particular task Computational Thinking - Looking at a problem in a way that a computer does to help us to solve it Direction - A course along which someone or something move Instructions - A single operation of a processor defined by the processor instruction set Sorting – Grouping by class or kind or size <p>For the full glossary at Early Level, click here.</p>

Early Level Computational Thinking



Creates and describes a pattern to sequence a given series of objects or information.

Identifies patterns, similarities and differences in objects or information such as colour, size and temperature and simple relationships between them.

Sequences a series of objects or information to match a given pattern e.g. by size, colour, etc.

Justifies how objects have been sorted and explains the categories.

Classifies objects and groups them into simple categories for examples, groups toy bricks according to colour.

Describes how objects can be sorted e.g. by colour, size, shape and offers other categories of their own.

Identifies and sequences the main steps in an everyday task to create instructions/an algorithm for example, washing hands.

Identifies what happens first, next and last when observing the order and sequence of everyday processes.

Observes and explores the order of everyday processes in the world around me e.g. getting dressed, making a sandwich.

Early Level Analysing Computing Technology



Curriculum Organiser	Experiences and Outcomes	Benchmarks
Understanding and analysing computer technology	<p>I understand that sequences of instructions are used to control computing technology. TCH 0-14a</p> <p>I can experiment with and identify uses of a range of computing technology in the world around me. TCH 0-14b</p>	<ul style="list-style-type: none"> • Demonstrates an understanding of how symbols can represent process and information. • 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).

What the learning may look like in Fife	Glossary of terms
<ul style="list-style-type: none"> • Create a list of common symbols throughout the school e.g. Fire Exits, Boardmaker symbols, toilets, etc. • Play with programmable devices such as Beebots, etc. • Experience giving and following instructions, e.g. using songs, PE activities, daily routines. • Create a tinker area within the classroom that learners can explore technology through free play. • Use resources from Barefoot Computing to support exploration of Computing Science. <p>Visit the Computing Science Progression site for further ideas and resources.</p>	<ul style="list-style-type: none"> • Instructions - A single operation of a processor defined by the processor instruction set • Internet of Things - A network of internet-connected devices such as fridge freezers/smartphones/medical devices all able to collect and exchange data using embedded sensor • Process - An instance of a computer program that is being run <p>For the full glossary at Early Level, click here.</p>

Early Level Analysing Computing Technology



Predicts what a device or person will do when presented with a sequence of instructions for example, arrows drawn on paper.

Creates and follows a sequence of instructions using arrows.

Explores how symbols are used to control technology e.g. on a phone, programmable device, computer, etc.

Discusses why symbols are important e.g. in school and the world around me.

Demonstrates an understanding of how symbols can represent process and information.

Identifies symbols and signs in the school environment e.g. the toilet, coat pegs, classrooms.

Identifies computing devices in the world (including those hidden in appliances and objects such as automatic doors).

Early Level Designing, Building and Testing



Curriculum Organiser	Experiences and Outcomes	Benchmarks
Designing, building and testing computing solutions	I can develop a sequence of instructions and run them using programmable devices or equivalent. TCH 0-15a	<ul style="list-style-type: none">• 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.

What the learning may look like in Fife	Glossary of terms
<ul style="list-style-type: none">• Play with programmable devices such as Beebots, etc.• Use cards/printed symbols/written symbols to design an algorithm.• Environmental displays to share vocabulary.• When creating algorithms and giving instructions link with Shape, Position & Movement Progression Pathway.• Use resources from Barefoot Computing to support exploration of Computing Science. <p>Visit the Computing Science Progression site for further ideas and resources.</p>	<ul style="list-style-type: none">• Algorithm - A list of instructions that describe how to do a particular task• Direction - A course along which someone or something move• Instructions - A single operation of a processor defined by the processor instruction set <p>For the full glossary at Early Level, click here.</p>

Early Level Designing, Building and Testing



Designs a simple sequence of instructions/algorithm for programmable device to carry out a task for example, directional instructions: forwards/backwards.

Designs a simple algorithm describing a regular route e.g. how to navigate around the school/playground

Uses vocabulary such as forward, backward, turn, left and right in play and when giving instructions.

Demonstrates resilience when experiencing challenge during a testing phase.

Identifies and corrects errors in a set of instructions.

Explains the importance of testing an algorithm

Recognises that directional instructions are affected by the orientation of the device/person carrying them out.

Explores the designing, building and testing processes when creating an algorithm.