Gomer Infant School

Computing - Progression of skills and knowledge

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This document outlines the progression of skills for Computing from Year R to Year 2. By progress, we mean that children know more, remember more and are able to do more of what was intended in the curriculum, this approach logically sequences the learning for children and allows them to build, recall and apply their knowledge and skills. The knowledge and skills framework offers clear learning progression in a subject, with incremental steps leading to well-defined endpoints.

Our subject leaders talk confidently about implementation, endpoints, opportunities for recall and how we support children to 'know, remember and understand' the knowledge and skills within our curriculum.

Computing

Early Years Skills & Knowledge Check

Introduction

Computing is not explicitly mentioned as part of the England EYFS curriculum, it is made explicit in the curricula of other countries. However, in **any** early years classroom, many topics can be explored using technology to produce creative work and solve problems. The suggested activities in the Reception Scheme of Work illustrate how this can be done.

This additional guide focuses on developing the foundations of computing skills in early years that will give children a sound basis to explore topics using technology and to be ready for progressing through the Computing curriculum.

Familiarity with some of these skills will reduce the cognitive load on children in future learning and enable them to make progress more rapidly.

We have divided the ideas in this document into skill-based themes with linked ideas that could be adapted to whatever topic you are covering in the rest of the curriculum. Some units are more suited to integrating into everyday classroom practice such as ideas about looking after devices in the Hardware unit.

'I can' statements are provided for each unit to support assessment.

Units are not presented in a required order. Units are not mandatory; they are simply provided to give a breadth of experiences to select from.

Early Years Skills & Knowledge Check

Computer Science | Information Technology | Digital Literacy

Mouse and Trackpad Skills

Unit Theme	'I can'
 Mouse and Trackpad Skills	I can hold a computer mouse with my finger on the correct buttons.
	I can use a mouse to make the cursor move around the computer screen where I want it to go.
	I can click the correct mouse button to play games on the computer.
	I can use a mouse accurately to click and drag objects on the screen.
	I can use the mouse roller to scroll up and down a page.
	I can use a laptop touchpad

Keyboard Skills

Unit Theme	'I can'
 Keyboard Skills	I can find all the letters of the alphabet on a keyboard.
	I can put spaces between words in my typed work.
	I know how to correct typed work without re-doing the work entirely using the delete keys.
	I can type capital letters and lower case and know how to change between these
	I can type numbers using a keyboard.
	I know how to move to the next line down when typing.
	I can use the arrow keys to move around the screen
	I can use the different inputs of a computer keyboard.

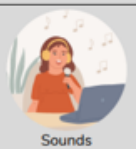
Drawing Skills

Unit Theme	'I can'
 Drawing Skills	I can select colours when painting on the computer.
	I can draw pictures on the computer to go with my work.
	I can use a computer to draw with different widths of pens.
	I can try the different tools that I can draw with on the computer.
	I can use the undo button correctly.
	I can use the erase button.
	I can use a touchscreen device purposefully.
	I can draw on a computer using a mouse.

Robots

Unit Theme	'I can'
 Robots	I can talk about where I am moving a toy vehicle whilst I am moving it.
	I can describe the route taken by a toy vehicle.
	I can follow directions to make a route for a toy vehicle.
	I can plan a route for a toy vehicle.
	I can follow my own plan for where the toy vehicle should move.
	I can make a floor robot move.
	I can control the forwards, backwards and rotation of a floor robot one step at a time.
	I can program a 3-step route for a floor turtle.

Sounds

Unit Theme	'I can'
 Sounds	I can make music using a computer.
	I can add sound effects to my work.
	I can use a device to record myself speaking and play back the sounds.

Photography

Unit Theme	'I can'
 Photography	I can talk about what photos show.
	I can take photos using a digital device.
	I can use the webcam in Mini Mash.
	I can open photos in Purple Mash.
	I can open photos that I have taken, in Purple Mash.

Technology Around Us

Unit Theme	'I can'
 Technology Around Us	I can talk about what technology is used at home.
	I can talk about what technology is used outdoors.
	I can talk about what technology is used in the world around me.

Safety and Privacy

Unit Theme	'I can'
 Safety and Privacy	I can explain how my work on the computer belongs to me and other people's work belongs to them.
	I can explain what it means for something to be private.
	I can talk about how my body feels when I am not comfortable with something.
	I know who can help me when I am feeling worried.
	I can show that I understand how to be kind to others.
	I can choose activities in my free time that help me to be healthy.

Quizzes

Unit Theme	'I can'
 Quizzes	I can understand what a quiz is.
	I can complete a multiple-choice quiz.
	I can complete a sequencing quiz.
	I can type answers to quiz questions.
	I can complete a cloze quiz.
	I can complete a matching quiz.
	I can complete a sorting and sequencing quiz.
	I can complete quizzes on the computer.
	I can play games that ask me questions.

Hardware

Unit Theme	'I can'
 Hardware	I can understand why having clean hands is important when using shared devices.
	I can understand why it is not sensible to eat and drink whilst using a technological device.
	I can understand why I need to take care with electronic devices and their plugs and wires.
	I can take appropriate actions when I need to carry a device to a different location.
	I can use devices with care.
	I can identify the technology used around me.
	I can identify the parts of a computer and what they are for.

Using Purple Mash with an Individual Login

Unit Theme	'I can'
 Using Purple Mash with an Individual Login	I can get to the Purple Mash page on my device at school and at home.
	I can login to Purple Mash \ Mini Mash in school using the shortcut icon.
	I can login to Purple Mash and Mini Mash using my username and password.
	I can login to Purple Mash a Mini Mash using my username and password.
	I can login to Purple Mash a Mini Mash using my username and password.
	I can save work in my own tray\ folder when I am using Mini\Purple Mash.
	I can open work that I have done earlier.
	I can find and complete 2Dos that my teacher has set for me

Y1 Teacher Progression Overview: N.C. Statements & skills

	Computer Science			Information Technology	Digital Literacy	
Statement	**Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.**	**Create and debug simple programs.**	**Use logical reasoning to predict the behaviour of simple programs.**	**Use technology purposefully to create, organise, store, manipulate and retrieve digital content.**	**Recognise common uses of information technology beyond school.**	**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.**
Outcome	Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand.	Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code.	When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.	Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.	Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.

Y2 Teacher Progression Overview: N.C. Statements & skills

	Computer Science			Information Technology	Digital Literacy	
Statement	**Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.**	**Create and debug simple programs.**	**Use logical reasoning to predict the behaviour of simple programs.**	**Use technology purposefully to create, organise, store, manipulate and retrieve digital content.**	**Recognise common uses of information technology beyond school.**	**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.**
Outcome	Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code.	Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children's program designs display a growing awareness of the need for logical, programmable steps.	Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.	Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.	Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content