Progression of skills and knowledge in computing

Prior knowledge

Fa Talk about why things happen and how things work.

Fb Know how to operate simple equipment, e.g. turn on CD player and use remote control.

Fc Show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.

Fd Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.

Fe Know that information can be retrieved from computers.

Ff Complete a simple program on a computer.

Fg Use ICT hardware to interact with age-appropriate computer software.

Fh Find out about and use a range of everyday technology.

Fi Use computing vocabulary: mouse, log-on, log-off, computer, screen, monitor.

Year 1

1a Recognise common uses of information technology in the home and school environment.

1b Use technology purposefully to create digital content.

1c Understand where to go for help and support with concerns about content or contact on the internet or other online technologies.

1d Predict the behaviour of simple programs.

1e Understand what algorithms are and how they are implemented on digital devices.

1f Use Year 1 computing vocabulary: trackpad, window, folder, email, online, browser, undo, redo, edit, algorithm, debug, program, text, format.

Year 2

2a Recognise common uses of information technology beyond school.

2b Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

2c Use technology safely and keep personal information private.

2d Understand that programs execute by following precise and unambiguous instructions.

2e Use logical reasoning to predict the behaviour of simple programs.

2f Create simple programs.

2g Debug simple programs by using logical reasoning to predict the actions instructed by the code.

2h Use Year 2 computing vocabulary: algorithm, information technology, digital devices, website, online safety, digital footprint, search engine.

Year 3

3a Recognise familiar forms of input and output devices and how they are used.

3b Make efficient use of familiar forms of input and output devices.

3c Understand that computer networks enable the sharing of data and information.

3d Understand that the internet is a large network of computers and that information can be shared between computers.

3e With support select and use a variety of software to accomplish goals.

3f Use technology safely and respectfully, keeping personal information private.

3g Use technology safely and recognise acceptable and unacceptable behaviour.

3h Use simple search technologies and recognise that some sources are more reliable than others.

3i Design, write and debug programs that control or simulate virtual events.

3j Use logical reasoning to explain how some simple algorithms work.

3k Use Year 3 computing vocabulary: loop, algorithm, program, debug, cyberbullying, variable, paint, Publisher, email, layout, sequence, selection, repetition.

Year 4

4a Use input devices such as cameras or sensors.

4b Understand what servers are and how they provide services to a network.

4c With support select, use and combine a variety of software on a range of digital devices to accomplish given goals.

4d Use technology responsibly and understand that communication online may be seen by others.

4e Understand where to go for help and support with concerns about content or contact on the internet or other online technologies.

4f Understand how results are selected and ranked by search engines.

4g Decompose programs into smaller parts.

4h Use logical reasoning to detect and correct errors in algorithms and programs.

4i Select, use and combine a variety of software, systems and content that accomplish given goals.

4j Use Year 4 computing vocabulary: hyperlink, format, debug, digital citizen, online profile, animation, online communication, software.

Year 5

5a Begin to use internet services to share and transfer data to a third party.

5b Independently select and use appropriate software for a task.

5c Independently select, use and combine a variety of software to design and create content for a given audience.

5d Understand the need to only select age appropriate content.

5e Use filters in search technologies effectively and appreciate how results are selected and ranked.

5f Design, input and test instructions to program a device.

5g Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.

5h Use logical reasoning to explain how increasingly complex algorithms work to ensure a program's efficiency.

5i Use Year 5 computing vocabulary: search engine, SEO, output, input, flowchart, spam, citations, audio effects, podcast, backdrop.

Year 6

6a Understand how computer networks enable computers to communicate and collaborate.

6b Begin to use internet services within his/her own creations to share and transfer data to a third party.

6c Independently select, use and combine a variety of software to design and create content for a given audience, including collecting, analysing, evaluating and presenting data and information.

6d Design and create a range of programs, systems and content for a given audience.

6e Independently select, use and combine a variety of software to collect, analyse, evaluate and present data and information.

6f Use technology respectfully and responsibly.

6g Identify a range of ways to report concerns about content and contact in and out of school.

6h Use filters in search technologies effectively and be discerning when evaluating digital content.

6i Solve problems by decomposing them into smaller parts.

6j Create programs which use variables.

6k Use variables, sequence, selection, and repetition in programs.

6l Use logical reasoning to explain how increasingly complex algorithms work and to detect and correct errors in algorithms and programs efficiently.

6m Use Year 6 computing vocabulary: networks, topology, cloud computing, cybersecurity, Kodu, when and do, digital content, spreadsheet.