

Computing: Skills and Knowledge

Year 1

Basic Skills

These skills are important for children to develop throughout computing lessons as they will develop independence when using and working from a range of technology.

In all work:

Can I type characters using a keyboard?

Can I control the pointer using the mouse pad or mouse?

Can I maximize or minimize a document?

Can I turn a laptop or device on myself?

Can I begin to understand how to shut down a computer safely?

E-Safety

In all work:

Can I make decisions about whether or not statements or images found on the internet are likely to be true?

Can I identify different devices that can go on the internet, and separate those that do not?

Can I explain what to do if I find any pictures online that I don't like? (K)

Can I understand why I need to be careful when searching the internet?

Online and Networking

Can I discuss with my teacher which websites I have been on?

Can I explore a website by clicking on buttons, arrows, menus and hyperlinks?

Can I navigate 'back' by clicking on the 'back' button?

Can I complete a search under the supervision of adults?

Can I begin to understand that technology can be used in and out of school?

Can I suggest technology I may use at home and say what it is for?

Multimedia

Using a range of programs:

Can I use a digital device to generate ideas for my work?

Can I use various tools to create images on a device?

Can I manipulate and move images on the screen?

Can I change the way a picture looks using a device or program?

Can I take a photograph using the iPad and say what it is for?

Digital Creativity

Using different technologies:

Can I use images I have taken to make something purposeful? (K)

Can I make a video for a purpose?

Programming

Using programs:

Can I give a simple sequence of instructions?

Can I put together some instructions to control a programmable toy (i.e. BeeBot)? (K)

Can I explore the outcomes when instructions are given in a sequence?

Can I say what might make my instructions better?

Can I use words like 'program' for a set of instructions?

Year 2

Basic Skills

These skills are important for children to develop throughout computing lessons as they will develop independence when using and working from a range of technology.

In all work:

Can I save a document and know where it is stored? (K)

Can I search for a document and open it?

Can I start to type using both hands?

Can I turn a laptop or device on myself?

Can I understand how to shut down a computer safely myself?

E-Safety

In all work:

Can I recognise that a variety of devices connect users with other people?

Can I name the devices that connect users with other people, particularly the ones I may use?

Can I identify things that are my own personal information?

Can I identify personal information that should be kept private?

Can I suggest reasons why personal information should be kept private to strangers? (K)

Can I begin use technology safely, respectfully and responsibly?

Can I begin to recognise when a photo/video is shown, no names should be shared?

Can I identify who to go to for help when I have concerns about content or contact online?

Online and Networking

Can I find information on the internet?

Can I conduct a search on a website?

Can I use a search engine to find a range of media, e.g. images, text, and information?

Can I refine my search to get more accurate results?

Can I explain how to use a search engine such as Google accurately?

Can I understand that technology can be used in and out of school?

Can I suggest common uses for technology beyond school?

Multimedia

Using a range of programs:

Can I save images or information gathered from the internet (save as...)?

Can I copy images from a range of sources and paste them in to a document?

Can I edit images and text to suit the document I am making?

Can I use the screen shot function to capture an image on the iPads?

Can I select certain areas of an image and resize and rotate?

Can I combine text and images within each page?

Can I change font sizes, colours and effects?

Digital Creativity

Using different technologies:

Can I take and acquire images from a device?

Can I record a sound on a computer?

Can I create digital music?

Can I create a slide show using pictures I have acquired?

Programming

Using programs:

Can I create a series of instructions and know that this is called an algorithm? (K)

Can I follow a series of instructions written for me?

Can I write a series of instructions that clearly meet a goal?
Can I use instructions that are both movement commands and additional commands (For example move forward 3, stop, turn right...)?

Can I control a character in a game or on screen (i.e. Lightbot)?

Can I discuss how to improve/change a sequence of commands?

Can I predict what might happen before carrying out a series of instructions (algorithm)?

Introduction to programming – (little computer use)–
physical moving:
blind robots and related games

Year 3

Basic Skills

These skills are important for children to develop throughout computing lessons as they will develop independence when using and working from a range of technology.

In all work:

Can I navigate through File Explorer to find a file?

Can I save and retrieve a document?

Can I search for a document and open?

Can I type using both hands?

Can I find characters on a keyboard?

E-Safety

In all work:

Can I use technology safely, respectfully and responsibly?

Can I evaluate digital content?

Can I begin to identify dangerous situations and behaviours online? (K)

Can I question the “validity” of what I see on the internet?

Can I talk about the reliability of information on the internet, e.g. the difference between fact and opinion?

Can I use a browser address bar not just search box and shortcuts?

Can I recognise when a photo/video is shown, no names should be shared?

Can I explain why no personal information should be posted?

Can I recognise online behaviours that would be unfair?

Online and Networking

Can I understand how the internet provides services for communication?

Can I understand the opportunities computer networks offer for communication?

Can I create content and communicate publicly via the internet?

Can I use a search engine to find a range of media, e.g. images, text, and information linked to current topic?

Multimedia

Using a range of programs:

Can I collect, edit, and present information?

Can I use technology purposefully to create digital content?

Can I acquire, store and combine images from cameras or the internet for a purpose?

Can I use the print screen function to capture an image – PC and/or iPad?

Can I edit pictures using various tools in Paint or photo-manipulation software?

E-Books:

Can I create a new eBook with a front cover and add or remove pages? (K)

Can I combine text and images within each page and embed sound clips?

Can I add information about the author and title for publishing?

Can I use different font sizes, colours and effects to communicate meaning?

Can I align text left, right and centre?

Can I insert a text box and adjust its size and formatting?

Digital Creativity

Using different technologies:

Can I take and acquire images from camera?

Can I use equipment to enhance or edit photography?

Can I use sound from the internet or network?

Can I compose a piece of digital music?

Can I record voice and sounds?

Can I insert music and sounds into presentations?

Can I create a photo slide show?

Can I add captions and a soundtrack to a photo slide show?

Can I create a mood using sounds, images or colour scheme?

Data & Programming

Using logo and/or scratch programs:

Can I edit and refine a series of commands?

Can I discuss and improve a series of commands?

Can I evaluate analytically to solve problems?

Can I use a variety of inputs, including ‘Motion’, ‘Control’ and recording movements using ‘Pen Down’?

Can I use the ‘repeat’ (loop) command in ‘Control’ within a series of instructions? (K)

Can I write a program to reproduce a defined problem, e.g. geometric shape/pattern?

Can I evaluate digital content?

Can I collect, analyse, evaluate and present data?

Introduction to programming – physical moving:

blind robots and related games

Instructions for making something related to topic

Year 4

Basic Skills

These skills are important for children to develop throughout computing lessons as they will develop independence when using and working from a range of technology.

In all work:

Can I save and retrieve a document by navigating through the file explorer?

Can I use short cuts to locate a file?

Can I edit a document and resave?

Can I type efficiently using both hands?

Can I locate a named character on a keyboard quickly?

E-Safety

In all work:

Can I begin to report concerns and inappropriate behaviour?

Can I recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles).

Can I understand the terms online identity, anonymity and impersonation and explain how this could affect me?

Can I make good judgments in order to stay safe, whilst communicating with others online?

Can I explain the importance of telling an adult if anything worries me online?

Can I identify dangers when presented with scenarios, social networking profiles, etc.? (e.g. Screenshot of online chat room with dangerous activity) (K)

Can I articulate examples of good and bad behaviour online?

Online and Networking

Can I communicate via the internet (i.e. email, blog, chat, video chat, Twitter)?

Can I communicate responsibly via the internet?

Can I use and understand the opportunities computer networks offer for collaboration?

Can I communicate with classes around the school / or other schools to share learning and comment?

Can I understand the purposes of video conferencing and its place in the real world (e.g. customer service, etc.)

Can I contribute effectively to a class blogs and write posts based upon research done?

Multimedia

Digital Creativity

Programming

Using a range of programs:

Can I add hyperlinks to a document?

Can I use and combine information on different digital devices to present information effectively?

Can I choose which video clips to keep and which to re-shoot?

Can I trim and arrange clips to convey meaning?

Can I collect audio from a variety of sources including own recordings and internet clips?

Using different technologies:

Can I present information creatively?

Can I capture video for a purpose and discuss the quality and effectiveness of video clips at portraying the information?

Can I create a multi-track recording using recorded sound effects and loops?

Can I edit and refine my work to improve outcomes? Can I add titles, credits, slide transitions, special effects and talk about the effect these have on the audience?

Using logo and/or scratch programs:

Can I evaluate analytically to solve problems?

Can I understand the importance of debugging and do this with a simple program? (K)

Can I navigate the Scratch programming environment?

Can I create a background and sprite for a game?

Can I add inputs to control my sprite?

Can I use 'Looks' and 'Sound' to add detail to my program?

Can I use conditional statements 'if...' and 'then') within a game?

Basics of programming – Write instructions for a basic game.

Data

Can I collect, analyse, evaluate, and present data?

Can I create and search a branching database using hyperlinks? (K)

Can I sort and organise information to use in other ways?

Can I create a database of records from information I have selected?

Year 5

Basic Skills

E-Safety

These skills are important for children to develop throughout computing lessons as they will develop independence when using and working from a range of technology.

In all work:

Can I save and retrieve a document from a specified place?

Can I navigate through File Explorer to find a file?

Can I improve my typing speed using both hands?

Can I find characters on a keyboard quickly and easily?

In all work:

Can I identify dangerous situations and behaviours online?

Can I identify what sort of privacy settings might be relevant to reducing different risks?

Can I explain how privacy settings work and identify them in programs I use?

Can I identify privacy settings in social media programs?

Can I judge when to answer a question online and when not to?

Can I demonstrate the behaviour and attitude needed to be a good online citizen and friend, not a digital by-stander?

Can I articulate what constitutes good behaviour online?

Can I find and cite the web address for any information or resource found online.

Can I use different sources to double check information found?

Can I explain how to report concerns and inappropriate behaviour? (K)

Online and Networking

Can I use search technologies effectively?

Can I evaluate digital content?

Can I explain how results are selected and ranked?

Can I use and understand the opportunities computer networks offer for collaboration?

Can I use advanced search functions in Google, e.g. quotations?

Can I understand the validity of some websites, especially those that are made by users (Wikipedia - link to E-Safety)?

Can I use strategies to check the reliability of information, e.g. cross checking with books?

Can I use my knowledge of domain names to aid my judgement of the validity of websites?

Can I understand what syncing files using cloud computing folders means?

Can I understand files may be saved off their device in 'clouds' (servers - e.g. Dropbox or Google docs / Showbie)?

Can I upload/download a file to the cloud on a program (e.g. Google docs / Showbie / Dropbox / OneDrive)?

Can I begin to understand copyright?

Multimedia

Using a range of programs:

Can I create a new E-book with a front cover and several additional pages? (K)

Can I produce a multimedia E-book combining video, pictures, text and audio?

Can I create QR codes for my audio book?

Can I publish a book online?

Digital Creativity

Using different technologies:

Can I present information creatively?

Can I create a purposeful multimedia presentation using a suitable program (Prezi, PowerPoint, etc.)?

Can I create mood or atmosphere using effects?

Can I create, edit and evaluate the success of a multimedia presentation?

Can I layer sound, add voice and create effects using a program to create a mood?

Programming

Using logo and/or scratch programs:

Can I evaluate analytically to solve problems?

Can I use external triggers and infinite loops to control sprites?

Can I explain the term 'variables'?

Can I edit and add variables to a program? (K)

Can I use conditional statements (e.g. 'when'..., 'if... then')?

Can I use loops and conditions to refine algorithms?

Can I use variables to configure external outputs within Scratch?

Can I use 'Sensing' to add detail to my program?

Can I use external inputs to control external outputs?

Programming – using inputs, outputs and variables

Data

- Can I collect, analyse and present data?
- Can I sort and filter information?
- Can I make graphs from the calculations on my spreadsheet?
- Can I explain why changing the numerical data effects a calculation?
- Can I enter data into a spreadsheet?
- Can I use 'sum' to calculate total?
- Can I change data in spreadsheet to answer 'what if...?'?
- Can I create and use a spreadsheet to create costings for a budget?
- Can I create frequency tables, pictograms and bar charts?

These skills are important for children to develop throughout computing lessons as they will develop independence when using and working from a range of technology.

In all work:

Can I save and retrieve a document from a specified location?

Can I improve my typing speed using both hands?

Can I locate keys on the keyboard quickly?

Can I use shortcuts with keys on the keyboard?

In all work:

Can I report concerns and inappropriate behaviour in a range of ways?

Can I identify dangerous situations and behaviours online?

Can I identify and explain the use of *report* and *flag* buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc)?

Can I find and identify 'click-CEOP' button and explain to parents what it is for?

Can I discuss scenarios involving online risk?

Can I act as a role model for younger pupils, including promoting *Top Tips for Internet Safety*?

Can I identify which privacy settings are relevant to reducing different risks?

Can I explain how privacy settings work and why they are there to protect us? (K)

Online and Networking

Can I responsibly create content, and communicate via the internet?

Can I use technology safely, respectfully and responsibly?

Can I create a new Blog post, save it as a draft and publish it?

Can I embed photos, hyperlinks into posts?

Can I like/follow other blogs and build up my blog content over the year?

Can I explain how files may be saved off their device in 'clouds' (servers - e.g. Dropbox or Google Docs / showbie)?

Can I demonstrate how to upload/download a file to/from the cloud using a program (GoogleDoc, Dropbox, Showbie)?

Can I explain and understand about syncing files using cloud computing folders and the advantages/problems?

Multimedia

Using a range of programs:

Can I use and combine a variety of software on a range of digital devices to present information effectively?

Can I storyboard and capture videos for a purpose? (K)

Can I plan for the use of special effects/transitions to enhance a video and affect the mood?

Can I transfer footage to laptops for more advanced editing?

Can I trim, arrange and edit audio levels of video to improve the quality of the outcome?

Can I export a video for different purposes?

Can I produce a diagram to show the links between pages (flow diagram)?

Digital Creativity

Using different technologies:

Can I present information creatively?

Can I create a purposeful multimedia presentation using a suitable program (Prezi, PowerPoint, etc.)?

Can I use music software to compose a suitable piece of music?

Can I embed music in to another program to create a suitable atmosphere?

Can I alter images in a variety of ways?

Can I explore 3D imagery?

Programming

Using logo and/or scratch programs:

Can I evaluate analytically to solve problems?

Can I design my own game including sprites, backgrounds, scoring and/or timers?

Can I use conditional statements, loops, variables and broadcast messages in my game?

Can I add detail to make my game more interesting (e.g. the game finishes if the player wins or loses and the player knows if they have won or lost)?

Can I evaluate the effectiveness of my game and debug if required? (K)

Can I use loops and conditions to refine my algorithms?

Can I use variables to configure external outputs within Scratch?

Can I use 'Sensing' and 'Operators' to add detail to my program?

Can I use external inputs to control external outputs?

Can I combine procedures?

Programming – using inputs, outputs and variables and operators.

Data

Can I collect, analyse, evaluate, and present data?

Can I apply information technology analytically to solve problems?

Can I create data collection forms and enter data from these accurately?

Can I check for and spot inaccurate data?

Can I make suitable graphs from the calculations on my spreadsheet?

Can I explain why changing the numerical data effects a calculation and show this?