iCompute
Primary Computing

IT

Progression

Information Technology

IT Progression in Primary Computing

This guide is intended to support teachers using iCompute's Primary Computing Scheme of Work for pupil progression in the Information Technology (IT) strand of the National Curriculum for Computing for Key Stage 1 and Key Stage 2.

It forms part of a comprehensive Computing Assessment Toolkit for Primary Computing covering all strands of the National Curriculum:

- Computer Science
- Digital Literacy (incl. eSafety)
- Information Technology

IT Progression

To demonstrate good practice in developing learning across the curriculum, this guide has been arranged into five sections:

- Digital Media
- Digital Communication
- Online Research
- Data Handling
- Spreadsheets

It shows how expectations for children's IT capability can progress throughout Year 1 to Year 6. The content of each section is divided into KS1, LKS2

and UKS2.

It is a guide only and should be adjusted to suit your school setting and the capabilities and competencies of your

pupils.

Declarative and Procedural Knowledge

For progress in computing to take place, pupils need to be taught components of learning and acquire declarative and procedural knowledge.

At iCompute, we think of knowledge components in terms of **know that… understand that… know how…**

Procedural Knowledge refers to the knowledge of "how to" perform a specific skill or task.
Declarative Knowledge involves "knowing that" and "understanding that".

Digital Media

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• a keyboard is a way of entering letters and numbers in to a device • you can make choices on a device using a mouse and by touch • you can use computers to make things	• use a keyboard sometimes with support • use a mouse or touch to make choices with help • have created simple digital content with support • have explored a limited range technology, digital content and tools	• you can make choices using devices • you can move things on screen using a mouse and touch	• use a keyboard to make choices • use the mouse or touch to select icons and items • move onscreen objects • operate digital equipment	• a mouse or touch helps you make choices and move around a screen • a keyboard can be used to write using a computer • you can save your work so that you can go back to it again	• use a mouse or touch to select, tap/click and drag objects around a screen • enter simple words using a keyboard and made choices • have created and saved their work • print work

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Digital Media

	Working Towards		Meeting		Greater Depth
Declarative Knowledge Pupils understand/know that...	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that...	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that...	**Procedural Knowledge** Pupils know how to…
you can make things using computers	use a keyboard	you can draw using software	enter simple sentences using a keyboard	you can create and save different versions of your work	create and save different versions of their work
a keyboard is used to enter words into a computer	use a mouse to point, click and drag objects around a screen with help.	text can be different colours and sizes	use a mouse or touchscreen to point at, select and move objects around a screen	there might be benefits to making things using computers	compare creating my own work using IT with manual methods
a mouse or touch can be used to select things on screen	create digital content using IT tools	IT can be used to communicate ideas by combining media (e.g. text, images and sound	print & save work with help	text can be different colours, sizes and styles and that these can be changed	explain why a particular tool has been chosen and its effect
work needs to be saved to go back to it later	save a file with support	some digital media might need permission to use	navigate a website using buttons and image links	some digital media might need permission to use	use a range of digital paint tools to create particular effects
art can be created using a computer	use a limited range of tools	I need to be careful when searching online for digital media	use shape and line tools		experiment with different styles of text
digital art can be made with shapes	create simple digital drawings		use appropriate shape and colours in digital art		open, save and print work sometimes with support
different tools do different jobs	choose appropriate shapes for digital art		Record audio and add to work, sometimes with support		
			select text		

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Year 1

Digital Media

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that...	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that...	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• you can correct mistakes using a computer • you can show people things using a computer • you need to save your work to go back to it later	• move around a screen or document with help • make things using a computer (e.g. draw a picture) • save my work	• you can delete words • you can use a computer to present your work • there are different tools you can use for different purposes • you can save different versions of your work • text can be different colours and sizes • multimedia includes, audio, text and images • images, audio and text cannot always be used without permission	• navigate a document using arrow keys and a mouse • use the backspace button and the delete button to remove text • use tools to create simple presentations that communicate something • locate, edit and save different versions of their work	• you can make things that combine audio, text and images • images, audio and text found online does not belong to me • text can be different colours, sizes and styles can be changed • IT can be used to communicate ideas by combining digital media	• create something that combines words, images and sound • talk about the particular effects that combining digital media may have

Year 2

Digital Media

Working Towards		Meeting		Greater Depth	
Declarative Knowledge	**Procedural Knowledge**	**Declarative Knowledge**	**Procedural Knowledge**	**Declarative Knowledge**	**Procedural Knowledge**
Pupils understand/know that…	Pupils know how to…	Pupils understand/know that…	Pupils know how to…	Pupils understand/know that…	Pupils know how to…
• information in the form of text, sound and pictures can be combined to create digital content and communicate with an audience • I should think about who I'm trying to communicate with when creating digital content	• use a keyboard to write • draw/import a picture into my work • record and add sound to work	• some content that uses multimedia (e.g. presentations and/or webpages) looks better and is more efficient that others • multimedia includes audio, text and images • images, audio and text cannot always be used without permission • I need to be aware of audience • text and digital media may be subject to copyright	• use a word processor to create work • use both hands for typing • use graphics, video and audio • navigate around text • make changes to selected text • create simple presentations • save, print, retrieve and amend work	• you can combine images and text using a computer • make different effects • copy text and images • use appropriate effects and resize graphics • copy text from a webpage to a document • copy images from a webpage • you can undo and redo work • digital media can be varied according to audience (e.g. reporting and advertising) • IT can automate manual processes (e.g. cut/paste; find/replace)	• combine graphics with text • use appropriate effects and re-size graphics • copy text from an internet page to a document • copy images from an internet page • save, print and retrieve work • use software, computers and devices to make simple presentations and create things • use bold, italic and underline • know how to undo and redo

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Digital Media

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	Procedural Knowledge Pupils know how to…	Declarative Knowledge Pupils understand/know that..	Procedural Knowledge Pupils know how to…	Declarative Knowledge Pupils understand/know that..	Procedural Knowledge Pupils know how to…
• you can make changes to your work more easily using digital tools • you can be creative using computers • you can add things from your computer or from online to work you are making	• edit my work • import images and sound into my work • create digital work • make things look better using a limited set of tools	• you can change page sizes and orientation • you can change the way things look using digital tools • you can add things or take things out • you should think about who you are communicating with when you make something • Understand that text and digital media may be subject to copyright and abide by rules in producing work	• change page size and orientations • import text, audio and graphics from devices, networks or online • use design features such as borders, shading, columns and text boxes • insert and edit text • create work for an intended audience • consider the use of appropriate features for a given audience (e.g. reporting, advertising, instructing) • Use IT to automate some processes (e.g. use cut/paste; find/replace etc)	• there are lots of different tools that have a particular purpose when making digital work • you can use a range of methods to improve the way things look • audiences differ and have particular needs (e.g. use of images for a young audience)	• vary layouts, formats, graphics and media for a particular purpose and for an intended audience • manipulate images using cropping tools, resize and edit • insert and edit hyperlinks • recognise the features of good design in using multimedia (e.g. presentations and/or webpages) • create work for an intended audience and improve work to better communicate ideas

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Year 4

Digital Media

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• my work will have an audience • work can be improved • you can persuade people in your work • multi media is combining images, text, audio and video • you can draw lines and shapes using digital tools • images can be made up entirely of lines and shapes and this is called vector • 3D shapes have three dimension • text, video, images and audio can be subject to copyright	• create work for an intended audience • look critically at my work • create simple vector art using lines and shapes • create simple 3D models using a computer	• I need to be aware of audience in work • importance of editing to enhance work • the potential for digital media to inform or persuade • multi-media can combined for particular audiences and purposes • text, video, images and audio can be subject to copyright • objects can be combined and layered to create vector images • 3D images have height, width, depth and can be combined to create graphical models	• use a keyboard with increasing speed and accuracy • plan interactive presentations • use hyperlinks in interactive presentations • use digital drawing tools to create vector images • talk about the shapes and lines that make up vector images • use graphical modelling software to create 3D models • demonstrate an awareness of audience in work	• style is an important factor in conveying information and communicating with an audience • digital content needs to be planned to take account of the intended audience, the content and the layout of information	• use a consistent style throughout work (e.g. headings, fonts and colours) • use criteria to evaluate the design of a variety of digital resources • discuss the rationale behind digital creations including content, media used and layout • develop and refine digital content for a specified audience

Year 5

Digital Media

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• there are a variety of digital tools and media that can be used to develop content and communicate with an audience • digital content needs to be engaging, clear and targeted	• select some appropriate tools for an intended purpose and audience • create digital content (e.g. a webpage) that incorporates text, images and sound	• I can improve/enhance work • I need to abide by copyright rules when creating digital media	• plan and develop interactive presentations using a variety of digital media • use graphical modelling software to create 3D models • use a consistent style throughout work (e.g. headings, fonts, colours and themes) • use digital media to inform or persuade and combine text, images, video and audio creatively for different audiences and purposes	• some tools are more appropriate than others depending upon the circumstances and audience • I need to look at my work and make changes to improve it • design and plan projects • use a variety of content to engage, inform and communicate	• select the most appropriate tools for an intended purpose and audience • independently evaluate work for purpose and audience • improve work, format and edit work to improve clarity • discuss the rationale behind designs • create content that combines images, sounds & text and is organised into pages that matches the needs of a specified audience • analyse digital content and make judgements about its suitability for a specific audience

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Year 6

Digital Communication

Declarative Knowledge	Procedural Knowledge	Declarative Knowledge	Procedural Knowledge	Declarative Knowledge	Procedural Knowledge
Pupils understand/know that..	Pupils know how to…	Pupils understand/know that..	Pupils know how to…	Pupils understand/know that..	Pupils know how to…
• you can use computers to do talk to people • charts are a way of showing information • we can get information from pictures and video as well as words • you can use computers to draw	• create pictures that mean something using digital tools with support • use multimedia software to make something that has meaning	• pictures, words and sound can communicate information • you can draw and write using computers • you can get information from pictures, words, video and sound • you can use computers to communicate through text, images and sound	• draw and using digital tools • use technology to show what I know • talk about different kinds of information such as pictures, words, video and sound	• you can present information using computers • audio can convey information	• talk about information they have found out from images, text, video and sound • put together simple presentations with multimedia aspects to communicate ideas

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Digital Communication

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• you can message people using devices • some information is personal • you need to be careful what you tell other people online	• talk about my use of digital communication in school and at home • communicate using simple tools	• messages can be sent using devices between people • some messages may be mean or inappropriate • messages can be in the form of video, images, audio, text or a combination of those • some information is personal and should not be shared without permission • some situations may be risky when communication online	• contribute ideas to class emails, eBooks, blogs etc. • express ideas using digital content (e.g. using digital drawing tools or word processing) • behave when communicating digitally	• there are a number of different ways people can use technology to communicate • you can communicate ideas using different software	• use different communication methods • make myself understood using a range of communication methods

Digital Communication

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• messages can be sent between people using technology • email is a type of communication • I need to be careful using email and other types of communication • some information is private and I shouldn't share it with people I don't know	• recognise situations where I don't feel safe and know how to seek help • keep personal information private • send a simple email	• messages can quickly be sent electronically over distances and that people can reply to them • an email has an address • some emails you receive may be risky • I need permission before sharing personal information online or offline • tell a trusted adult immediately if they are asked by someone they have met online to meet in person	• contribute a variety of suitable ideas to class emails, eBooks, blogs etc. • send an email to a known recipient (e.g. teacher or class) • open and reply to an email from a known sender • contribute to a blog • behave if I see something inappropriate online	• an email has to be sent to a unique email address and that it is important to enter them accurately • some emails may be malicious or inappropriate and the need to cautious • personal information (e.g. usernames, passwords, email addresses, home addresses, telephone numbers etc, should not be shared wither online or offline without a trusted adult's permission	• use email to send and receive messages • add and send attachments to an email

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Year 2

Digital Communication

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• some messages can be nasty • you can attach things to messages • I should be kind when I communicate online • I should keep personal information to myself • some devices and apps have passwords • you can be bully and be bullied online	• communicate using digital tools • keep myself safe when communicating • report any concerns I have about cyberbullying	• some messages may be malicious or inappropriate • attachments may be unsafe to open • I should be respectful and kind online • to keep personal information and passwords private • how to respond if asked for personal details • I shouldn't meet anyone I met online in real life • recognise that cyber bullying is unacceptable • I need to be careful online	• use digital tools to communicate (e.g. posting/commenting) • begin to publish work to a wider audience • behave responsibly when communicating • stay safe when communicating	• meeting anyone you met online is risky • we need for rules when using live forms of communication • I need to be responsible and use appropriate language when communicating with others • I should respect the ideas and communications of others • people can communicate and collaborate online	• use a range of tools to communicate digitally • demonstrate an awareness of appropriate behaviour when communicating digitally

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Year 3

Digital Communication

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• there are a number of risks associated with meeting people in real life that I have been communicating with online • some forms of cyberbullying	• send/receive emails • open and save digital communications • tell someone if I encounter cyberbullying	• the effect that content in my communications may have on others • I should tell a trusted adult immediately if they are asked to meet in person • cyber bullying can come in various forms and that it is unacceptable • how to report cyber bullying	• log on to an email account, open emails, create and send them • attach files to digital communications (e.g. email and/or blog posts) • open and save attachments • use a range of digital tools to communicate (e.g. blogs, chat, commenting) with purpose • share digital work with a wider audience (e.g. emails or blogs involving more than one school) • demonstrate respect for the ideas and communications of others	• I need to behave appropriately when communicating digitally • I need to be careful communicating online • there are a range of online communication tools and some may be better than others depending upon the circumstances	• log on to an email account, open emails, create and send appropriate replies • forward an email • select recipients from address books • demonstrate caution when communicating online • discuss the differences between online communication tools used in school and those used at home (e.g. social media)

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Year 4

Digital Communication

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
I need to be aware of appropriate language to use in digital communications	use cameras, video, email, messaging, blogs and other forms of digital communication	there are many different ways to communicate digitally you need a strong password to secure accounts	use a range of digital tools to communicate send group communications publish to a wide audience (e.g. creating videos, podcasts or web content)	you can communicate using a wide variety of methods inside and outside of school you need to be safe and responsible when communicating digitally	use digital communication to collaborate and communicate inside and outside of school (e.g. email, blogs and other digital tools) evaluate the effectiveness of a range of digital communication tools

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Year 5

Digital Communication

Working Towards		Meeting		Greater Depth	
Declarative Knowledge Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…	**Declarative Knowledge** Pupils understand/know that..	**Procedural Knowledge** Pupils know how to…
• there are many different ways to communicate digitally • I need to be aware of appropriate language to use in digital communications	• use a range of digital tools to communicate • send group communications • publish to a wide audience (e.g. creating videos, podcasts or web content)	• you can communicate using a wide variety of methods inside and outside of school • you need to be safe and responsible when communicating digitally	• talk about which tools would be best suited for an audience or task • send group communications and be aware of the implications of responses • use a variety of digital tools to publish to a wide audience and engage with that audience appropriately	• you can communicate using a wide variety of methods inside and outside of school • you need to be safe and responsible when communicating digitally	• independently use digital communication to collaborate and communicate inside and outside of school (e.g. email, chats, blogs, messaging and other digital tools) • critically evaluate the effectiveness of a range of digital communication tools and suggest appropriateness for audience and/or tasks

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Year 6

Online Research

Declarative Knowledge
Procedural Knowledge

Declarative Knowledge	Procedural Knowledge	Declarative Knowledge	Procedural Knowledge	Declarative Knowledge	Procedural Knowledge
Pupils understand/know that..	Pupils know how to…	Pupils understand/know that..	Pupils know how to…	Pupils understand/know that..	Pupils know how to…
• you can find things out online	• explore, access and make choices to find things out online	• you can get information online from pictures, words, video and sound • you can search for things online	• find information online • conduct a basic search	• you can present information you have found out online	• obtain information online from more than once source • talk about the information I have found online • make choices about the kind of information I collect online

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Declarative Knowledge

Procedural Knowledge

Pupils know/understand that...

- IT can give access to information, including the internet
- text, images, audio and video can be used to impart information
- websites have a unique address
- not everything online is true
- I need to be careful when online

Pupils know how to...

- explore appropriate buttons, arrows, menus and hyperlinks to navigate websites, sometimes with support
- search with provided key words
- find websites using shortcuts, favourites and bookmarks
- talk about when some forms of information may be more appropriate than others in a given situation (e.g. when video may be better than using text)
- talk about use of IT and other ways of finding things out (e.g. looking in books)
- talk about which websites are better than others and give reasons

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Year 1

Declarative Knowledge

Procedural Knowledge

Pupils know/understand that...

- IT can give rapid access to a wide variety of information and resources, including the internet and video)
- information can come in many forms (e.g. text, images, audio)
- some forms of information are more appropriate than others in some situations
- websites have a unique address and the need for accuracy when entering it into an address bar
- not everything online is true
- I should not click/tap buttons on pop-ups and to alert a trusted adult if a pop-up is displayed
- what to do, and who to tell, if they see something inappropriate online

Pupils know how to...

- use appropriate buttons, arrows, menus, image and text links to navigate websites
- use key words to search resources
- find websites by typing URLs (web addresses) into an address bar and using shortcuts, favourites and/or bookmarks
- evaluate web content by talking about online content that are the most appropriate, useful or preferred
- find things out using IT and other resources (e.g. using books)

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Year 2

Declarative Knowledge

Procedural Knowledge

Pupils know/understand that...

- some web content may be protected by copyright and cannot be used without permission
- searches may include unwanted advertising
- I can allow useful pop-ups
- what to do and who to tell if they encounter inappropriate content online
- how search engines work
- recognise that anyone can author content online
- web content can be filtered and that this may not be the case at home
- not everything online can be used without permission
- I need to ignore unwanted advertising as they may be a source of adware or malicious software

Pupils know how to...

- use a search engine to find things online
- develop key questions and key words to search for specific things online
- talk about the accuracy and reliability of information found online
- retrieve, use and save sources of information found online (e.g. bookmarks, copy/paste and Save As), sometimes with support

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Year 3

Declarative Knowledge

Procedural Knowledge

Pupils know/understand that...

- information found as a result of using a search engine is ranked on relevance
- anyone can author content online and that it is not always accurate and may be inappropriate
- web content can be filtered and that this may not be the case at home
- understand the concept of copyright (e.g. what content can be used in their own work)
- copying text directly from any source without permission is theft (plagiarism)
- to ignore unwanted advertising and the risks of clicking links within them

Pupils know how to...

- use a range of appropriate search engines to locate online content
- evaluate search engines
- consider the effectiveness of key words on search results and refine where necessary
- verify the accuracy and reliability of information found online
- distinguish between opinion and fact; and questions sources
- retrieve, use and save sources of information found online (e.g. history, bookmarks, copy/paste and saving)
- identify whether content has copyright restrictions and can, legally, be used
- identify and cancel unwanted advertising, pop-ups and downloads
- discern between useful or unwanted pop-ups and know how to allow or cancel them
- know what to do and who to tell if they encounter inappropriate content online

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Year 4

Online Research

Declarative Knowledge

Procedural Knowledge

Pupils know/understand that...

- the internet can be used for research
- the concept of copyright
- effective online research does not consist of direct copying, but involves gathering a number of sources and evaluating them for validity and effectiveness
- linking to the work of others online (rather than copying it) protects the author's work
- information online can be fact or opinion and understand that it should be evaluated
- domain name extensions can be used to help evaluation the veracity of online information (e.g. .co.uk; .com; .ac; .sch; .org; .gov; and .net)

Pupils know how to...

- choose to use online sources, where appropriate, for research and resources
- use a range of search techniques (e.g. including or omitting particular phrases and words)
- use appropriate strategies for finding, evaluating and verifying information
- talk about the validity, reliability and relevance of online content

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Year 5

Declarative Knowledge

Pupils know/understand that...

- when, and where, the internet can be used for research
- the concept of copyright and how it applies to material they would like to use
- the need to obtain permission when using the work of others online; but know that it is safe to link to the resources without obtaining permission
- know what to do and who to tell if I encounter inappropriate content online

Pupils know how to...

- use more advanced search techniques (e.g. using Boolean search criteria such as "Space" AND "Neptune")
- use the most appropriate search techniques for a particular task (e.g. image search, in-site searches)
- question the origin of web content and understand that key information can be checked to help evaluate reliability; such as domain name; author; dates; links and contact details
- use domain name extensions to help evaluate online information (e.g. .co.uk; .com; .ac; .sch; .org; .gov; and .net)
- distinguish between fact and opinion and make informed choices about sources of online information to use
- collate, evaluate and interpret online content for relevance and suitability to own work
- critically evaluate the validity, reliability and relevance of online content

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Year 6

Data Handling

Working Towards		Meeting		Greater Depth	
Declarative Knowledge	**Procedural Knowledge**	**Declarative Knowledge**	**Procedural Knowledge**	**Declarative Knowledge**	**Procedural Knowledge**
I know/understand that..	I know how to…	I know/understand that..	I know how to…	I know/understand that..	I know how to…
• you can get information from pictures • charts are a way of showing information	• sort a small set of objects according to criteria, sometimes with support • organise data into simple charts and graphs with support • answer questions using data with support	• you can sort things • pictures on a pictogram represent numerical values	• sort a set of objects according to criteria • construct simple pictograms	• graphs and charts can help you answer questions	• compare data using simple charts and graphs • suggest different ways data could be organised or displayed • use graphs to answer a range of questions • create own questions that could be answered by interpreting data on a graph • make comparisons between data on a graph

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Data Handling

Declarative Knowledge

Procedural Knowledge

Year 1

Pupils know/understand that...

- IT can be used to sort items and information
- simple graphs and charts represent information
- data needs to entered accurately to be used to answer questions correctly

Pupils know how to...

- sort and classify items and object, sometimes with support
- use digital tools to produce simple graphs, sometimes with support
- use graphs to answer questions, sometimes with support
- save, retrieve and edit work with support

Year 2

Pupils know/understand that...

- IT can be more efficient than manual methods for sorting and classifying
- IT can be used to create, display, add to and change graphs
- simple graphs and charts can be used to ask and answer questions

Pupils know how to...

- Support and classify a variety of items and/or objects
- Use digital tools to produce a variety of basic graphs (e.g. pictograms and bar charts)
- Use graphs to ask and answer questions
- Save, retrieve and edit work

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KS1

Data Handling

Declarative Knowledge	Procedural Knowledge

Year 3

Pupils know/understand that...

- data is structed in a database
- there are similarities and differences between computerised and paper-based databases
- data is represented digitally by computer systems; by a series of zeros and ones and that this is called the binary number system
- a database consists of records and fields
- there are different types of data (e.g. numbers and text)

Pupils know how to...

- create diagrams and charts to ask and answer questions
- identify what data to collect to ask and answer specific questions
- enter data into a database and use search/sort to answer questions
- use and compare graphs and charts produced by database software
- select and use appropriate methods to organise, present and interpret data
- talk about the advantages of using databases
- make choices about how to present data

Year 4

Pupils know/understand that...

- you need to structure data in a database
- the basic structure of a database and that you can sort and search them
- there are data types: numeric; alphabetic, dates, currency
- databases can be used to create a variety of tables and graphs that can be used for different purposes
- data is represented digitally by computer systems; by a series of zeros and ones and that this is called the binary number system

Pupils know how to...

- use the vocabulary: file, record, field, sort and search
- talk about the advantages of using databases to sort, query and classify information quickly
- create diagrams and charts to ask and answer questions
- odentify what data to collect to ask and answer specific questions
- enter data into a database and use search/sort to answer questions
- use and compare graphs and charts produced by database software
- select and use appropriate methods to organise, present and interpret data

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Primary Computing

LKS2

Data Handling

Declarative Knowledge	Procedural Knowledge

Year 5

Pupils know/understand that...	Pupils know how to...
the need for accuracy when entering and querying data	construct and interpret graphs and charts
incorrect conclusions can be drawn from inaccurate data	design questions and perform searches on more than one criterion on more complex databases
IT enables large quantities of data to be organised and sorted	identify and correct errors with data
the basic principles of data protection	present findings to an audience

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Year 5

Data Handling

Declarative Knowledge

Procedural Knowledge

Year 6

Pupils know/understand that...

- the need for accuracy when designing, entering and querying data
- the consequences of using inaccurate data
- the need for data protection and some of the rights of individuals over stored data and how it affects the use and storage of data
- where and when it is appropriate to use a spreadsheet to support an investigation and explain choices
- spreadsheets can automate functions, making it easier to test variables
- spreadsheets can be used to explore mathematical models
- the need for accuracy when entering formulae
- the consequences of using inaccurate data and/or formulae

Pupils know how to...

- construct, refine and interpret graphs and charts
- design questions and perform searches on more than one criterion on more complex databases; identifying patterns and relationships
- check the reliability of data; identify and correct errors
- present data to a given audience and display findings using other digital tools (e.g. multi-media)
- explore the effects of changing variables in spreadsheets
- make and text predictions
- enter formulae into a spreadsheet to explore the effects of changing variables (e.g. simple calculations)
- identify and enter formulae into cells
- develop simple spreadsheets to investigate problems
- discuss how IT enables large quantities of data to be organised and sorted and discuss the advantages

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Year 6