

Computing

Purpose of Study: A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

The national curriculum for computing aims to ensure that all pupils:

- ☉ can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- ☉ can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
 - ☉ can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
 - ☉ are responsible, competent, confident and creative users of information and communication technology.

KS1 Pupils should be taught to:

- ☉ 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

KS2 Pupils should be taught to:

- ☉ design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
 - ☉ use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- ☉ use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- ☉ understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
 - ☉ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- ☉ select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- ☉ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Intent

At St James', we aim to prepare our learners for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Knowledge and understanding of ICT is of increasing importance for children's future both at home and for employment. Our Computing curriculum focuses on a progression of skills in digital literacy, computer science, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology. These strands are revisited repeatedly through a range of themes during children's time in school to ensure the learning is embedded and skills are successfully developed. Our intention is that Computing also supports children's creativity and cross curricular learning to engage children and enrich their experiences in school.

Implementation

Our whole curriculum is shaped by our school vision which aims to enable all children, regardless of background, ability, additional needs, to flourish to become the very best version of themselves they can possibly be. We teach the National Curriculum through iCompute, NoS and Teach Computing, supported by a clear skills and knowledge progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children.

To ensure a broad range of skills and understanding, Computing is taught across three main strands: digital literacy, computer science and information technology. As part of information technology, children learn to use and express themselves and develop their ideas through ICT for example writing and presenting as well as exploring art and design using multimedia. Within digital literacy, children develop practical skills in the safe use of ICT and the ability to apply these skills to solving relevant, worthwhile problems for example understanding safe use of internet, networks and email. In computer science we teach children to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. Also, to analyse problems to computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. We also teach a progression of Computing vocabulary to support children in their understanding. At St James, we give children access to a wide range of good quality resources and provide cross-curricular opportunities for children to apply their Computing knowledge and skills. Online safety is taught within each Computing lesson as a short starter activity as well as being taught as a unit each year. Online safety procedures are communicated with all staff and parents.

We recognise that Computing is no longer included as a separate strand in the Early Years Framework, however we believe that children are exposed to a variety of digital systems and resources through their daily lives and therefore want to support them to become conscientious and confident users of technology. We also ensure that all children know how to protect themselves and stay safe in a digital world.





Impact

The implementation of this curriculum ensures that when children leave St James School, they are competent and safe users of ICT with an understanding of how technology works. They will have developed skills to express themselves and be creative in using digital media and be equipped to apply their skills in Computing to different challenges going forward.

Coverage of key concepts













In Computing, the Key Concepts below should be studied and explored across all areas of Computing. They have been integrated into specific areas below to provide an opportunity to explore each in depth and to ensure a key understanding is embedded within learning.

Computer Science 	The Computer Science Strand is about using computational thinking to solve problems and make things for a purpose. It generally, but not always, involves writing programs. You can use computational thinking to solve many worthwhile problems by creating a sequence of instructions for the context of the problem, which are not programming instructions. Computer Science is the study of the foundational principles and practices of computation and computational thinking, and their application in the design and development of computer systems
Information Technology 	Information Technology is the study of the foundational principles and practices of computation and computational thinking, and their application in the design and development of computer systems. The Information Technology Strand is in two parts. a) Pupils should know how it all works; how information of all kinds becomes accessible to and open to manipulation by technology. The core idea is that of digitisation and its consequences. b) Pupils need to know how to use technology to work in the other two strands; they need a full range of competences. Information technology deals with the creative and productive use and application of computer systems, especially in organisations, including considerations of e-safety, privacy, ethics, and intellectual property.
Digital Literacy 	Digital Literacy is in two parts: a) The safe and responsible use of technology. b) Solving problems and making useful things by the use of digital tools, such as spreadsheets, video editing applications and so on. Just as the ability to read, spell, punctuate, and perform basic arithmetic, are essential life skills, so is the ability to use a computer. Digital Literacy is the ability to use computer systems confidently and effectively.
E Safety 	Although it falls within the Digital Literacy strand, we consider e-safety to be essential for all our children in an increasing digitalising world. Therefore, we explicitly split e-safety focuses and dedicate a whole term to this vital topic. The education of pupils in e-safety is essential to ensure children are equipped with the skills to recognise risks online, to be critically aware of the materials and content they access online, along with guidance on how to accurately validate information accessed via the internet. This is often embedded throughout all Computing learning.

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS	Lesson coverage SCARF NOS iCompute	<p>iStay Safe Privacy & security</p> <p>Exploring the IWB and pen control</p>	<p>iStay Safe Privacy & security</p> <p>iCanMove</p> <p>Mouse control on the computers</p>	<p>iMakeMusic</p> <p>Keeping safe online</p> <p>SID day – Intro to Digi Duck</p>	<p>iMakeMedia iCanSequence</p> <p>iPads and communication devices</p>	<p>iCanDirect iCanProgram</p> <p>Typing skills</p>	<p>iSearchOnline</p> <p>Typing skills</p>
	‘ I KNOW...’ The knowledge to be learnt	<p>I know that the Internet can be used to visit places and learn from.</p> <p>I know that the world wide web can be used for find things using search terms.</p> <p>I know to ask an adult before going online.</p> <p>I know to tell an adult if I find anything worrying online.</p> <p>I know how to use the interactive whiteboard to draw pictures.</p> <p>I know how to create a new page.</p>	<p>I know that the Internet can be used to visit places and learn from.</p> <p>I know that the world wide web can be used for find things using search terms.</p> <p>I know to ask an adult before going online.</p> <p>I know to tell an adult if I find anything worrying online.</p> <p>I can use a mouse to play a computer game.</p>	<p>I know that devices can be used to record and play sound.</p> <p>I know how to stay safe online.</p>	<p>I understand that devices can be used to capture images.</p> <p>I can sequence the steps in making a sandwich.</p>	<p>I know how to give and follow simple instructions.</p> <p>I know how to give simple commands to a programmable toy.</p>	<p>I know how to search digital content.</p>

	Key Vocabulary	internet online interactive whiteboard pen control rub out new page	website safe	internet online computer control drag move program puck goal angle smaller	website safe mouse click drop press playing together paddles score bigger	music audio play volume online	sound record compose safe	' I CAN...' The skills to be developed		I can talk about similarities between staying safe online and in the real world. I can explain rules for staying safe online. I can use the interactive whiteboard to draw pictures. I can create a new page.	I can talk about similarities between staying safe online and in the real world. I can explain rules for staying safe online. I can demonstrate how to use a program on the computer. I can use a mouse to move objects and make choices on a screen.	I understand that sound can convey information. I can record and play back simple audio compositions using digital devices/tools. I can experiment with tempo and volume using digital tools. I can share ideas about activities that are safe to do on electronic devices. I know what to do and who to talk to if I feel unsafe online.	I can begin to understand that software and tools can be used to communicate through images. I can independently follow a short sequence of instructions in order. I can list the steps of a known task in order. I can create a short sequence of instructions. I can change instructions to create a different outcome.	I can give and follow simple instructions in order. I know how to move objects up, down, forwards and backwards. I can recognise a problem and attempt to solve it. I can create a short sequence of commands for a programmable toy. I can sometimes program the toy to go where expected. I can change commands to create a different outcome.	I can use a mouse and/or touch input to make choices by selecting icons and items. I can find information using a basic search.
internet online interactive whiteboard pen control rub out new page	website safe	music audio play volume online	sound record compose safe	order sequence algorithm next before second photograph image	steps instructions first then after last picture	up forwards sideways program command instruction go execute	down backwards direction code input turn clear			dictionary alphabet search	picture letters order				

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
		Lesson coverage	iSafe Managing online information Health, wellbeing & lifestyle  	iAlgorithm Giving and following instructions. Privacy & security Copyright & ownership  	iWrite Creating digital text.  	iData Introducing data representation.  	iProgram Algorithms and programming.  
Year 1	‘ I KNOW...’ The knowledge to be learnt	I know what being online may look like, the different feelings we can experience online and how to identify adults who can help. I know that people online may try to manipulate others, how this can make someone feel and how to identify and approach adults who can help. I know that photos can be shared online and that permission should be sought first.	I know that algorithms are precise instructions that can be followed. I know how to devise a simple algorithm. I know that programs execute by following precise and unambiguous instructions. I know that some statements can only be true or false.	I know that text can be created in a number of ways. I know that a computer can be connected to a printer. I know the value of using a word processor to produce text.	I know why pictograms are useful.	I know that algorithms are implemented as programs on a range of digital devices.	I know the computers show real events and things. I know that computers can be used to make choices. I know that a computer can be used to model an environment where choices can be made. I know that a computer model is not an exact replica of real-life environments and/or scenarios.
	Key Vocabulary	internet trusted adult safety permission personal information private cyber bullying	algorithm repeat instruction true sequence false program debug	text word processor key keyboard save print backspace return/enter	data tally pictogram	algorithm instruction sequence program debug repeat output	model algorithm instruction choice
	‘ I CAN...’ The skills to be developed	I can identify and approach adults who can help.	I can follow a simple algorithm. I can plan, test and debug a simple algorithm. I can make predictions about an outcome based on a simple algorithm. I can understand conditions and outcomes.	I can use word processing software to create text. I can select and insert text into a word processing application. I can open and save a word processing document.	I can collect and organise information to solve a problem. I can create a pictogram using collected data. I can sort information. I can present data using a graph.	I can give instructions to a programmable toy. I can plan a simple algorithm to control a toy. I can program a virtual object to move to on-screen objects. I can record a sequence of instructions in a common format.	I can use a mouse to move things accurately on-screen. I can create a representation of a real or fantasy game or story.

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 2	Lesson coverage SCARF NOS iCompute	iSafe Self-image & identity Online relationships Online reputation Online bullying Playing games 	iProgram 	iAnimate 	iSearch 	iBlog 	iDoMail
	' I KNOW ...' The knowledge to be learnt	I know what personal information means. I know that personal information is unique to myself. I know that personal information should only be given to trusted adults. I know that not everyone is trustworthy. I know that emotions can be a tool to help judge unsafe situations. I know how physical sensations can alert us to unsafe situations. I know the importance of checking with an adult before participating in an online environment.	I know that an algorithm is a process that consists of a series of steps that achieves a specific goal. I know that algorithms can describe everyday activities and can be followed by humans and computers. I know that algorithms are made up of steps. I know that steps can be repeated. I know that computers need more precise instructions than humans do.	I know what an animation is. I know the premise of a stop-frame animation. I know that an animation consists of characters, a stage, props, sound, text and a story. I know the importance of a storyboard in the story planning process. I know that animations need to be scripted.	I know that the world wide web contains large amounts of information. I know that the world wide web can be used to answer questions.	I know what a blog is and how it will be used in the classroom. I know how to respond to the writing of others. I know how to post on a blog.	I know that messages can be sent electronically over distances. I know that people can reply to emails. I know that electronic communication can be text, sound and images.
	Key Vocabulary	internet trustworthy safety permission personal information private untrustworthy online	algorithm instruction sequence program repeat test debug	animation scene script motion storyboard props	world wide web network internet hyperlink search URL	blog post comment	email email address to from attachment

' I CAN...'
The skills to be developed

I can begin to identify the characteristics of people who are worthy of trust and who can help me make choices that keep me safe.

I can identify a risky situation when a trusted adult's help may be needed.

I can begin to be open with trusted adults about online experiences.

I can use digital drawing tools (Scratch) to create images.

I can program a simple animation involving movement.

I can write a simple program that produces an output (text).

I can combine images and text to create a simple animation.

I can create a storyboard.

I can create physical characters, settings and props.

I can work collaboratively in a group to achieve a common goal.

I can create a stop-frame animation.

I can use links to navigate a website.

I can locate specific information using a website.

I can collect information from a number of different online sources and check they are the same.

I can log into the class blog.

I can explain what I think and why.











I can use a blog to demonstrate and share learning.

I can reflect on work and make improvements.

I can compose an email.

I can send a reply to an email.

I can add an attachment.

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 3	Lesson coverage SCARF NOS iCompute	iSafe Managing online information Health, wellbeing & lifestyle Super Searcher None of your business!  	iProgram You will use Scratch for this unit You can access it here: https://icomp.site/scratch  	LEGO – Spike 	iNetwork Lots of weblinks for this module. Refer to the unit plan, page 2 	iConnect Lots of weblinks for this module. Refer to the unit plan, page 2   	iData You can use Microsoft Access for this module OR Textease You can access it here: http://icomp.site/textease 
	' I KNOW...' The knowledge to be learnt	I know how to identify a range of ways to report concerns about content and contact. I know how to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour. I know that a wider range of information is personal (eg. regular attendance at a specific place). I know the need for passwords and that they should be kept safe.	I know that computer programs contain graphics, use x y coordinates and turns are measured in degrees I know that algorithms and programs can involve repetition	I know how to follow instructions to create a program I know how to use directional vocabulary to describe a sequence I know how to describe a program's goals, sequence of events and expected outcomes I know how to identify cause and effect. I know how to develop a program to solve problem I know that an action can be repeated I know how to develop programs that use simple loops (repetition) to address a problem Identify and fix errors within a program (test and debug).	I know what a network is. I know how information is exchanged between devices. I know that the internet is the physical connections between computers and networks. I know that devices on networks have a unique address.	I know that the internet is many computers that are connected. I know some of the services available on the internet. I know the basic steps that can help distinguish safe and credible websites. I know that copyright is an author's right of ownership and it is illegal to steal other people's material.	I know how information in a database is organised. I know the advantages of a computer-based database over a paper one.
	Key Vocabulary	Responsibly Report	program selection coordinates import debug sequence repeat x-y axis test	design create control variables write debug simulate sequence	network server wireless WiFi IP address network switch router access point (WAP) internet URL	World Wide Web internet search IP address copyright hyperlink URL web browser network	field data search record database sort
	' I CAN...' The skills to be developed	I can identify some of the ways to use computers safely. I can follow e-safety guidelines.	I can program an animation that executes a sequence of statements. I can program a sequence of instructions that create visual effects. I can import, create and record sounds. I can predict the outcome of a simple algorithm. I can combine images, sounds and movement to create a personal animation.	I can follow instructions to create a program I can identify cause and effect. I can develop a program to solve a problem I can develop programs that use a simple loop.	I can explain how data travels through a network. I can identify the key parts of a computer network.	I can use basic navigation skills to browse the world wide web. I can use search terms when looking for information on a search engine.	I can find and enter information to create additional records in a database. I can demonstrate the knowledge, skills and understanding they have learned during this unit.

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 4	Lesson coverage SCARF NOS iCompute	iSafe Privacy & security Copyright & ownership Picture Wise 	iMail You will use the children's school email accounts for this module. 	iAnimate You will use ABCya for this unit. You can access it here: https://icomp.site/abcya-web OR iPad app Doink Animation & Drawing 	iAlgorithm The activities in this unit are 'unplugged' and do not require computers or devices. 	iDoWeDo You will use Scratch for Lego WeDo You can access it here: https://icomp.site/scratch OR iPad app Lego WeDo 	iData You can use Microsoft Access for this module OR Textease You can access it here: http://icomp.site/textease
	' I KNOW ...' The knowledge to be learnt	I know that not all information provided on the world wide web is correct and that it needs to be checked. I know I should use technology safely, respectfully and responsibly. I know how to recognise acceptable/unacceptable behaviour and report concerns about content and contact. I know I should cross -check information provided on one website against that provided on another. I know the need to use secure passwords and to keep them private	I know that messages can be used to communicate over distance a number of ways I know how email travels and how to retrieve it. I know the advantages of attaching files to emails	I know what an animation is I know that animations can be created using digital tools	I know that information is easier to find in a sorted order I know that information is easier to find in a sorted order. I know that algorithms are a set of instructions that complete a task I know that computers work by following a set of instructions – called a program	I know how simple algorithms work.	I know that information can be stored as numbers, text and choices (e.g. yes/no) I know that storing information in an organised way helps answer questions.
	Key Vocabulary	Acceptable Unacceptable	Email To Attachment email address from forward	Animation Frame rate (FPS) frame frames per second CGI	order measure select instruction node optimisation compare sort algorithm program decomposition logical reasoning	design create control variables write debug simulate sequence	field data search record database sort

' I CAN...'
The skills to be developed

I can use ICT to communicate and collaborate, identify some of the risks and act to minimise them.

I can demonstrate the use of basic safety measures when using technology and working online (Eg. logging out).

I can use appropriate search criteria to find relevant information and check its usefulness.

I can send and reply to emails

I can attach a file to an email

I can use email to communicate ideas

I can create a scene for an animation

I can create an animated scene

I can use a storyboard and create a short animation

I can find the best method of sorting a group of unknown weights in order

I can use decomposition to approach problems.

I can use logical reasoning and abstraction to design algorithms

I can design, write and debug programs.

I can solve problems by decomposing them into smaller parts.

I can use sequence, selection and repetition in programs.

I can sort record cards using field names.

I can search a database to answer questions

I can use the information in a database to create a simple chart.

		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 5	Lesson coverage SCARF NOS iCompute	iSafe Online Bullying Self-Image and Identity Communication Is it true? Play, like, share Spot bullying 	iDraw You will use SketchPad for this unit. You can access it here: https://sketchpad.app/ 	iWeb Needs X-Ray Goggles – see unit sheet. May need IT Support to help set up. 	iSphero You will use the Sphero Edu app for this module. 	iCrypto Lots of weblinks for this module. Refer to the unit plan, page 2 	iProgram You will use Scratch for this unit You can access it here: https://icomp.site/scratch
	‘ I KNOW... ’ The knowledge to be learnt	I know that some information on the internet may be misleading or inaccurate and that it needs to be checked. I know I should use technology safely, respectfully and responsibly. I know how to recognise acceptable/unacceptable behaviour and report concerns about content and contact. I know to cross-check information provided on one website against that provided on another. I know I should check information provided on the world wide web for accuracy. I know that personal information should only be given to trusted sources.	I know that digital tools can be used to create images I know that vector images are made up of shapes and lines I know that vector images are constructed of layers I know how to evaluate images and how to make improvements	I know that the world wide web is one of the services offered on the internet I know that the world wide web consists of many websites and web pages that can be accessed using the internet I know that websites are written in HTML code I know how HTML provides structure for web content.	I know how to control a robot using an app to make it move I know how to control a robot with accuracy I know how to program a sequence of instructions that are repeated (repetition) I know how to design an algorithm, write a computer test and debug I know how to plan precise movement and colour change I know how to plan algorithms, develop programs, test and debug	I know that messages can be sent and received secretly I know that messages can be sent electronically over distances I know that data can be transmitted as binary (on or off) I know the importance of the cryptography historically and today	I know that computer programs containing graphics use x y coordinates and turns are measured in degrees I know that some variables can only be true or false (Boolean) I know that programs can do different things if the value of the Boolean variable is true or false (conditional statements)
	Key Vocabulary	Digital content Information	Vector canvas resize rotate Fill stamp Group layer Zoom send to front Send to back bring forward	World Wide Web HTML Element CSS Tags	app robotic command Sequence Instructions orient execute debug loop precise	cryptography decrypt key binary encrypt cipher shift frequency analysis	sequence condition boolean coordinates selection repeat variable x-y axis

' I CAN...'
The skills to be developed

To use technology and online services to communicate and collaborate, identify some of the risks and act to minimise them.

I can create digital content for specific purposes.

I can demonstrate the use of basic safety measures when using technology and working online (eg. logging out of devices after use).

I can use appropriate search criteria to find relevant information and check its plausibility and usefulness.

I can use digital tools to improve detail in images

I can design vector images

I can create vector images

I can evaluate images and make improvements

I can read basic HTML code

I can design, write and debug programs that accomplish specific goals, including simulating or controlling physical systems; solve problems by decomposing them into smaller parts.

I can use sequence, selections and repetition in programs; work with various forms of input and output.

I can use logical reasoning to explain how a simple algorithm works and detect and correct errors in the algorithms and programs

I can learn, encrypt/decrypt simple messages







I can understand the algorithm of a simple shift cipher

I can use frequency analysis to decipher encrypted text

I can use conditional (if) statements

I can use variables in programs



		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 6	Lesson coverage SCARF NOS iCompute	iSafe Online Relationships Online Reputation It's a puzzle To share or not to share? Traffic lights Think before you click Fakebook friends 	iModel You will use SketchUp for this module. You can access it here: https://edu.sketchup.com/app 	Crumble You will use Crumbles and the Crumble app on ipads 	iNetwork Lots of weblinks for this module. Refer to the unit plan, page 2 	iData You will use Microsoft Excel for this unit. 	iProgram You will use Scratch for this unit You can access it here: https://icomp.site/scratch 
	' I KNOW...' The knowledge to be learnt	I know that some information on the internet may be misleading or inaccurate and that it needs to be checked. I know I should use technology safely, respectfully and responsibly. I know how to recognise acceptable/unacceptable behaviour and report concerns about content and contact. I know I should check information provided on the world wide web for accuracy. I know that personal information should only be given to trusted sources.	I know how to use the basic tools in Sketchup I know what a scale is I know some features used in graphic modelling I know how to evaluate and improve 3D models I know how to add images to 3D models	I know how to control a simple circuit connected to a computer I know how to write a program that includes count-controlled loops I know how to explain that a loop can stop when a condition is met. I know how to design a physical project that includes selection I know how to create a program that controls a physical computing project.	I know that a computer network is a group of computers that are connected I know that computer networks allow users to communicate and share I know that the internet is many networks that are connected to each other I know that a router sends / receives information as packets of data.	I know that spreadsheets can be used to store numerical data and make calculations I know that formulas can be used to calculate totals. I know that graphs and charts can be created and easily be changed from spreadsheet data. I know how to produce a spreadsheet to record costings.	I know that behaviour of a computer program should be planned I know that programs are developed according to a plan
	Key Vocabulary	digital content complexity information hacker phishing strong password privacy bullying security cyberbullying two-factor (or step) verification encryption harassment	graphic model 2d / 3d resize rotate design evaluate component import scale	app orient robotic execute command debug sequence loop instructions precise	network router internet World Wide Web IP address url data packet search engine rank html	spreadsheet worksheet column row cell cell reference data formula range sum	sequence selection condition repeat boolean variable procedure test debug

<p>' I CAN...' <i>The skills to be developed</i></p>	<p>To use technology and online services to communicate and collaborate, identify some of the risks and act to minimise them.</p> <p>I can create digital content for specific purposes.</p> <p>I can demonstrate the use of basic safety measures when using technology and working online (eg. logging out of devices after use).</p> <p>I can use appropriate search criteria to find relevant information and check its plausibility and usefulness.</p>	<p>I can build a simple house using Sketchup</p> <p>I can explain the tools used in creating a model</p> <p>I can add components eg surfaces, scales etc.</p> <p>I can identify improvements that can be made to a model</p> <p>I can import and add images</p> <p>I can import a model accurately in Google Earth</p>	<p>I can control a simple circuit connected to a computer</p> <p>I can write a program that includes count-controlled loops</p> <p>I can explain that a loop can stop when a condition is met.</p> <p>I can design a physical project that includes selection</p> <p>I can create a program that controls a physical computing project.</p>	<p>I can explain how data travels through a network.</p> <p>I can identify the key parts of a computer network.</p> <p>I can explain how a search engine returns results.</p>	<p>I can find and enter information to create additional records in a database.</p> <p>I can use the SUM function to create formulas that will perform addition calculations.</p> <p>I can produce a spreadsheet to record data.</p>	<p>I can program a computer game by sequencing conditional statements</p> <p>I can use variables in programs</p> <p>I can use procedures in programs</p> <p>I can develop strategies for testing and debugging computer programs</p>

