

Computing and IT at TGS (Primary)

Aim

We want our children to be active producers of technology, rather than passive consumers.

Children require the skills to access and thrive in an ever changing, technological world. There is an increasing expectation for learners and employees to communicate and collaborate using web technology and possess the skills to create custom content through web development and coding. The Internet is also a powerful and valuable source of information so skills to quickly find, evaluate and analyse this information are more important than ever. The Gatwick School's **Computing Content** aims to reflect the modern world and provide the correct tools and skills that will allow children to succeed in years to come. Along with our Online Safety Policy, it also teaches them how the use of technology requires etiquette and a sense of responsibility which, in turn, will help them to stay safe from and fully understand the dangers which 21st century technologies may pose.

Principles

1. Children should be given the opportunity to use, apply and, where possible, develop their problem solving skills through computing.
2. We want children to understand how the use of technology requires etiquette and a sense of responsibility which, in turn, will help them to stay safe from and fully understand the dangers which 21st century technologies may pose.
3. To ensure children are equipped with the computational knowledge required to understand the **uses and implications** of technology, today and for the future.

Pupils should be taught to:

Key Stage 1

- 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

Key Stage 2

- 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

Year 1					
Term	Computing Topic	Subsidiary Knowledge Computing Content		Disciplinary Knowledge As a Digital Citizen ...	Intent End of Unit Outcome
Autumn 1	Internet, networks and the web Can you create a self portrait using 2paint?	-Can log in, log out and select a program safely. -Can open, edit and save a file when changes are made. -Can develop mouse control to select colours and shapes to create a self-portrait. -To copy and paste text/ pages.		I know that you need to save a document using a suitable name.	We are self-portrait creators. (2paint) To create a self-portrait using 2 paint.
					2 Paint in purple mash Teachcomputing.org year group resources saved to server
Autumn 2	Online Safety What shall I do if I see something that makes me feel uncomfortable online?	- How do I portray self -online? Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ? S – Keep your personal details safe . M – Never meet strangers face to face. A – Do not accept or respond to files, images or emails from strangers. R – Make sure all that you read is reliable . T – tell someone you trust if you feel uncomfortable.		- I know what to do if I see something inappropriate online. - I know what is meant by personal information and develop awareness of why it is special. - I am beginning to understand how to use the internet safely inside and outside of school.	We can be safe online. To create a poster to tell others how to stay safe online.
					Use Hector's World https://www.esafety.gov.au/educators/classroom-resources/hectors-world PiXL Online Resources Teachcomputing.org year group resources saved to server
Spring 1	Computational thinking How can you make a character move?	-To build one and two step instructions. -To use a simple program to produce a background, create moving characters and objects. -To program a sound to occur when an object collides. -To make predictions on what happens based on the titles of different coding.		-I know what coding means in computing. -I know that technology follows instructions to deliver a desired outcome (ie algorithm)	We are coders. (2code) To create a program with moving characters and objects.
					Unit 1.7 Coding- Purple mash planning. Daisy the Dino (debugging, programming) J2E code https://www.j2e.com/j2code/ Teachcomputing.org year group resources saved to server
Spring 2	IT in the world How can I stay connected?	-To retell a story on a video recording device.		- I know that I can use technology to communicate.	We can connect to others. (2create a story) To retell a story on a video recording device
					Apps like imagistory Paragon Link – Why do people create art? Teachcomputing.org year group resources saved to server
Summer 1	Using Information What makes a good e-book?	-To use drawing tools to create a picture and text (varying the colour, font and size). -To add animations, sound and music to a story book. -To save work and continue from previously saved work.		- I Know the difference between a traditional book and an e-book. -I can use the Internet as a search tool/place of information	We are story book creators. (2create a story) To create an e-book on book creator/Adobe Spark.
					Unit 1.6 Animated story books- Purple mash planning. Paragon Link – Why do people eat? Ebook using information frm paragon topic. Teachcomputing.org year group resources saved to server
Summer 2	Computational thinking What is an algorithm?	-To create a simple program to give instructions to a device/software to deliver a clear outcome (eg BeeBot) -Make simple predictions based on given instructions/algorithms		-I Know that technology follows instructions to deliver a desired outcome (ie algorithm)	We are treasure hunters. (Beebots) To create a set of instructions to find the treasure on the UK map. Produce/edit Bee Bot maps Paragon Link – How do people live today? Maps of modern day London/Crawley. Include landmarks.
					Teacher to create Beebot maps Use online Beebot creator. Teachcomputing.org year group resources saved to server

Year 2				
Term	Computing Topic	Subsidiary Knowledge Computing Content		Disciplinary Knowledge As a Digital Citizen ...
				Intent End of Unit Outcome
Autumn 1	Online Safety What is personal information and what can we share online?	- How do I portray self -online?		We can keep ourselves safe online See Year 2 e-safety pack
		Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	Teachcomputing.org year group resources saved to server
Autumn 2	Typing (3 weeks) Can you use both hands when typing?	-To use both hands to type letters on the keyboard.		We are typists To improve scores on different touch typing games.
		-I know why touch typing is an important skills and how it links to different areas of computing and jobs. -I know the importance of keeping passwords private.		Teachcomputing.org year group resources saved to server
	Computational thinking Can you create your own map and direct the Beebots to the finish?	-Can use logical reasoning to predict the behaviour of simple programs -Can create a simple algorithm to carry out specific actions (eg program a BeeBot to perform a sequence of moves) -Can debug a simple program		We are Beebots Programmers. To create a map and write an algorithm to direct the Beebot from start to finish.
		To know what an algorithm is and know that programs need to be given precise instructions.		Design a mummy/pyramid map for BB Teachcomputing.org year group resources saved to server
Spring 1	Internet, networks and the web How can you use email to communicate with others?	-Can open, respond and write an email to someone using an address book. -Can add and create attachments.		We are communicators. To read and respond to a series of email communications.
		-I know different ways people can communicate online. -I know how to use email safely and responsibly.		Unit 3.5 Email- Purple mash planning Teachcomputing.org year group resources saved to server
Spring 2	Using Information Can you select and choose a program to present information in an interesting way?	-To collect, organise and present data and information in digital content. -To create digital content to achieve a given goal by combining software packages.		We are information presenters. To present information on (non- fiction – link to a topic) by combining software packages.
		-I can identify basic parts of a web search engine search page. -I know key vocabulary for the internet: internet, network, world wide web, browser, website and webpage.		Apps like imagistroy Adobe Voice Unit 2.8 Presenting ideas (lessons 1-4) Purple mash planning. Paragon Link – Why do people create art? Teachcomputing.org year group resources saved to server
Summer 1	IT in the world Can you re-create art work on an ICT package?	Re-create artwork using dots, lines and repeated patterns. To use copy and paste to create a repeated pattern.		We are artists. To create a piece of artwork on still life.
		-I can open, save and retrieve work using a suitable file name.		2 Draw – Purple Mash Teachcomputing.org year group resources saved to server
Summer 2	Computational Thinking Can you code your own story?	To create simple algorithms. To debug simple programs. To create a program using a variety of objects, actions, events and outputs successfully.		We are computer programmers. To complete a program to retell a story using 2Code.
		-I am beginning to know computing vocabulary: algorithm, debugging, command, repeat, input, output and timer.		Unit 2.1 Coding- Purple mash planning Teachcomputing.org year group resources saved to server

Year 3					
Term	Computing Topic	Subsidiary Knowledge Computing Content		Disciplinary Knowledge As a Digital Citizen...	Intent End of Unit Outcome
Autumn 1	Online safety Why do you need to keep your identity a secret on line?	I know what cyber bullying is and how to deal with it. I know and abide by the school's Acceptable Use Policy.		I understand that the internet contains fact, fiction and opinions and begin to distinguish between them.	We are identity protectors. To create a leaflet to explain what to do if they experience cyber bullying
		Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	I know how to with unpleasant forms of electronic communication. I know when an email should/ should not be opened.	(Using CEOPS resources. www.Thinkuknow.co.uk) (Purple Mash). Teachcomputing.org year group resources saved to server
Autumn 2	Computational thinking Can you create an animation?	Write a programs that accomplish specific gaoils. Use sequence in programs. Can use simple repetition. Can debug programs for simple errors and make refinements.		I know what an algorithm is and know that programs need to be given precise instructions. I know and understand the vocabulary – Algorithm, program, code.	We are Programmers and bug fixers. To produce a short, scripted, animated cartoon on The Mayans.
					Coding - Scratch Lego WeDo https://studio.code.org/s/course1 Teachcomputing.org year group resources saved to server
Spring 1	Internet, networks and the web Can you create a 3D home?	Create a sculpture using Sketch Up/3D slash Create a home with a range of features Create a virtual tour of the home		I know what a virtual gallery looks like.	We are 3D designers. To design and create a 3D Pueblo home/artefact
					3D slash Teachcomputing.org year group resources saved to server
Spring 2	Using Information How can you make information look interesting?	-Adding text boxes and tables -Copy, saving & paste images from the Internet and computer. -Using short cut buttons for copy/ paste/ spell check -Using find and replace. -Develop touch typing skills with my hands.		I understand the internet and networks - including search engines/ ways of saving work e.g. on network, memory stick etc.	We are information presenters. To present work information on Japan.
					.Word 2016 Slides Teachcomputing.org year group resources saved to server
Summer 1	IT in the world Can you create a 3D game?	-Create characters and a landscape in Kodu -Use programming (when/do) to code the Kodu and Robots -Use selection in programming -Be able to add scoring to the game -Be able to identify problems or bugs in a program and fix them.		I know that you are building a game for a specific age/audience.	We are 3D game makers. To produce a 3D game using Kodu Game Lab involving collecting objects..
					Kodu 2 DIY Teachcomputing.org year group resources saved to server
Summer 2	Data presenting Can you design a branching database to identify the names of different cross curricular link?	Can select and save appropriate images. Can create a branching database using yes/no questions. Can use and debug their own branching database		I know that branching databases are used to classify objects.	We are branching databases designers. To create a branching database on (Paragon topic – children could choose)
					Unit 3.6 Branching Database- Purple Mash planning. Paragon Link – How do we live in Britain or any topic from the year? Teachcomputing.org year group resources saved to server
		Extra unit if needed – Introduction to Micro bits			

Year 4					
Term	Computing Topic	Subsidiary Knowledge Computing Content		Disciplinary Knowledge As a Digital Citizen...	Intent End of Unit Outcome
Autumn 1	Online Safety Do I understand that information and people on the internet can be fake?	Sources of information Safe searches. Keeping profile safe Knowing who to talk to		I understand that anyone can post anything online.	(Unit may change based on E-Safety week www.saferinternet.org.uk) We are safe surfers. To create a 'fake news' google site.
		Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?		Google site Teachcomputing.org year group resources saved to server
Autumn 2	Computational thinking Can I use code to control a robot?	-Write a simple algorithm to help write a program in Microbit. -Use sequencing [dealing with one thing at a time in a particular order] to achieve a specific goal. -Use a range of commands in Microbit to achieve a specific goal, including movement, animation and sound -Use selection in programming by using the if, then and else commands in Microbit. -Use a range of operators to create a step timer -Be able to identify problems or bugs in a program and correct them.		I understand that programs controls robots.	We are Programmers of robots. To use Microbits for a life function
					Microbits Teachcomputing.org year group resources saved to server
Spring 1	Internet, networks and the web Can you create your own music using the Garage Band?	-Use a range of instruments on the Garage Band app to create a song including an introduction, verse, chorus and ending. -Use Smart Strings, loops and voice recording		I understand main elements of a song/piece of music I understand how to search for music on the internet.	We are digital composers. To use the internet to search for music and compose a song using Garage Band
					iPad – Garage band Teachcomputing.org year group resources saved to server
Spring 2	Using Information Can you use a range of databases to present information?	I can design a simple database to collect and manipulate different types of data. I can test and improve the design of their database based on feedback. I can interrogate a database and retrieve the necessary information.		I know the difference between data and information. I know that databases are organised into files, records and fields.	We are data searchers To produce a database on WW1
					(2Investigate) Teachcomputing.org year group resources saved to server
Summer 1	IT in the world Can you produce a multi-layer maze game?	Can create algorithms using sequence and loops. Knows that programmers refine algorithms to improve accuracy and efficiency Can debug by identifying errors in the programming language or syntax (eg missing bracket) Can create a multi-level game.		I know that programs are a sequence of algorithms and algorithms are a set of instructions I know the instructions within an algorithm have to be correctly sequenced to achieve specific outcomes	We are software developers To create a multi-level maze game.
					Unplugged lesson on Variables- barefoot resources. Maze planning- barefoot resources. Teachcomputing.org year group resources saved to server
Summer 2	Computational thinking Can you create a Kodu 3D game including a range of different features?	Create characters and landscape in Kodu. Add simple instructions including 'When' and 'Do' Use selection in programming 🎮 Be able to create a multi-page game Be able to add scoring to the game 🎮 Be able to add additional features such as sound and making the characters' talk. Be able to identify problems or bugs in a program and fix them.		I understand that I can design games for others to enjoy.	We are Kodu Game makers. To create a game using Kodu Game Lab which includes a range of features and commands. The game should be involving collecting objects and avoiding enemy characters.
					Unplugged resources on abstraction- Barefoot resources Teachcomputing.org year group resources saved to server

Year 5				
Term	Computing Topic	Subsidiary Knowledge Computing Content		Disciplinary Knowledge As a Digital Citizen...
				Intent End of Unit Outcome
Autumn 1	Online Safety	Spam		We can keep ourselves safe
		Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	-Know the importance of passwords as a way of keeping yourself. -To know what spam is, the forms it takes, and then identify strategies for dealing with it.
Autumn 2	Computational thinking Can you create a multi-page animation using Scratch? Can you create a Maths Quiz using Scratch?	-Write a simple algorithm to help write a program in Scratch. -Use sequencing [dealing with one thing at a time in a particular order] to achieve a specific goal. -Use of coordinates -Use a range of commands in Scratch to achieve a specific goal, including movement, animation and sound -Use selection in programming by using the if, then and else commands in Scratch -Use a range of operators to create a maths quiz Be able to identify problems or bugs in a program and correct them.		We are animators and programmers. To create an Egyptian animation in Scratch and a Maths Quiz using programming, selection and variables Adapt Barefoot Viing raid animation. Egyptian chariots? https://www.barefootcomputing.org/resources/viking-raid-animation Teachcomputing.org year group resources saved to server
		-I know I can use code for a variety of real life needs.		
Spring 1	Internet, networks and the web Can you communicate and collaborate using blogs?	-Can create a blog with a specific purpose. -Can understand that the way in which information is presented has an impact upon the audience. -Can post comments and blog posts to an existing class blog. -Can assess the effectiveness and impact of a blog.		We are bloggers. To plan, write and evaluate a blog on edit.
		-I understand the features of a blog and how it can be used to share. -I know the issues surrounding inappropriate posts and cyber bullying.		Google Sites Teachcomputing.org year group resources saved to server
Spring 2	Using Information Can you use a spreadsheet to plan an event?	-Use formulas to add, subtract, multiply and divide in real life contexts. -Present data in a graph. -To format cells in a spreadsheet.		We are calculators To use a spreadsheet to plan a school cake sale.
		-I know I can use computer programs to present and manipulate data. -I know how it can be used in everyday life.		2 Calculate Google sheets Teachcomputing.org year group resources saved to server
Summer 1	IT in the world Can you create a virtual piece of art using digital photography?	-Can use a range of devices to take photographs and store them in an appropriate place. -Can manipulate images including changing colour, brightness and tone. -Can copy and paste different images to form a collage. -Can combine images, sound and text appropriate for the audience.		We are photographers To create a piece of artwork on space involving photography, sound and text
		-I know how to record photos as files and use them in various ways.		Use Imotion to capture the group work, add sound and text. Teachcomputing.org year group resources saved to server
Summer 2	Computational thinking Can you use HTML code to create two or more websites?	-Edit & change an existing web page using Mozilla X-Ray Goggles -Use HTML Tags to create a web page with: A heading ; Text ; Image ; Link -Create webpages that are linked together -Be able to identify problems or bugs in HTML code and fix them.		We are HTML coders. To create webpages using HTML based on living in Britain 1825-2000.
		I know about computer networks and the difference between the internet and the world wide web.		Use HTML table of code n shared area Teachcomputing.org year group resources saved to server

Year 6				
Term	Computing Topic	Subsidiary Knowledge Computing Content		Disciplinary Knowledge As a Digital Citizen ...
				Intent End of Unit Outcome
Autumn 1	Online Safety	See e-safety unit. (Could this unit run throughout the year in the form of digital leaders in the classrooms. Termly support in ICT lessons).		We can keep ourselves safe Activity taken from www.saferinternet.org.uk
		Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	Netiquette T – is it true ? H – is it high quality ? I – is it informative ? N – is it necessary ? K – is it kind ?	
Autumn 2	Computational thinking Can you use Python to create a range of programs?	-Use Python IDLE/Shell to create a simple text based program -Use variables in Python -Use selection in programming by using the if and else commands in Python -Be able to identify problems or bugs in a program and fix them.		We are Python Programmers To use Python to create a range of simple programs using variables and if and else commands.
				Python Teachcomputing.org year group resources saved to server
Spring 1	Internet, networks and the web	-To know the difference between the World Wide Web and the internet. To know what a LAN and a WAN are. 🖨 To know about how the network works at our school. 🖨 To know about Tim Berners-Lee and how the Internet started.		We are network investigators. To complete a profile of Tim Berners-Lee
				Network hunt- barefoot resources- 1st lesson Unit 6.6 Networks- Purple mash planning
Spring 2	IT in the world Can you use Scratch to create a multi-level adventure game?	-Write an algorithm to help design a multi-level game -Use decomposition to break down the game into smaller parts -Use a range of game features in Scratch including movement, scoring, rewards, Obstacles, Timer (extension), End of game (extension) -Use selection in programming by using the if, then and else commands in Scratch -Use repetition and variable in game design -Create a control system using input and output. -Be able to identify problems or bugs in a program and fix them.		We are game designers. To program a game in Scratch using a range of game features using selection, repetition and variables
				Barefoot 'Make a game project'.
Summer 1	Using information Can you create a tear jerking movie?	-Can combine images, photographs, text, audio and film clips on Movie Maker. -Can use digital devices to take photographs and upload onto another device. -Can present information in an effective way to have an appropriate effect on the audience.		We are moviemakers. To design and present a movie on their time at TGS Primary
				Movie maker
Summer 2	Computational thinking Can I design my own Microbit project?	-Write a simple algorithm to help write a program in Microbit. -Use sequencing [dealing with one thing at a time in a particular order] to achieve a specific goal. -Use a range of commands in Microbit to achieve a specific goal, including movement, animation and sound -Use selection in programming by using the if, then and else commands in Microbit. -Use a range of operators to create a step timer -Be able to identify problems or bugs in a program and correct them.		We are IT project leaders To choose/create a DT based Microbit tool/instrument.
				Microbit.org

