St Margaret's Computing Curriculum Map

Year 1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
I wonder theme…	What makes me special?	Where does our food come from?	Do all children have toys?	What is it like in China?	What is it like to be an explorer?	What's the weather like?
Kapow Unit	Online safety – 3 safety rules	Data handling: Introduction to data (linked to favourite fruit or vegetables)		Digital Imagery (linked to Chinese Dragon and puppets in DT)		Programming 1: Algorithms unplugged
End of Unit Objectives	Pupils who are secure will be able to: • Explain what is meant by online information. • Recognise what information is safe to be shared online. • Explain why we need passwords and what makes a strong password.	Pupils who are secure will be able to: • Represent animal -themed data in different ways, using objects and technology. • Log in and use mouse and keyboard skills to navigate the computer.		Pupils who are secure will be able to: • Plan a pictorial story using photographic images in sequence. • Explain how to take clear photos. • Take photos using a device.		Pupils who are secure will be able to: • Explain what an algorithm is. • Write clear algorithms. • Follow an algorithm. • Explain what inputs and outputs are.

	• Understand that they need to ask permission before sharing content online and explain why. • Understand that they have the right to deny their permission to information about them being shared online. • Say who they can ask for help with online worries. • Use some strategies to work out if online information is reliable or not.	• Represent the same data as a pictogram and a table or chart. • Collect data about minibeasts using a tally chart and represent data digitally. • Click and drag objects to sort data using a branching database. • Consider the types of input used to gather different forms of data when designing an invention.		• Edit photos by cropping, filtering and resizing. • Search for and import images from the internet. • Explain what to do if something makes them uncomfortable online. • Organise images on the page, orientating where necessary.		• Create an achievable program. • Decompose a design into steps. • Identify bugs in an algorithm and how to fix them.
Computing Vocabulary	Contact Conduct Content Safe	• bar chart • block graph • branching database • categorise • chart • click and drag • compare		• background • blurred • camera • clear • crop • delete • device • digital camera		• algorithm • artificial intelligence • bug • chunks • code • computer • debug

	Report	• count • data • data collection • data record • data representation • edit • input • keyboard • line graph • mouse • information • label • pictogram • pie chart • process • record • resize • sort • table • tally • values		• download • drag and drop • edit • editing software • filter • image • import • internet • keyword • online • photograph • resize • save as • screen • search engine • sequence • software • storage space • visual effects		• decompose • device • directions • input • instructions • manageable • order • organise • output • program • problem • solution • specific • tasks • virtual assistant

Year 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
I wonder theme…	Are all schools the same?	Would you prefer to live in a hot or cold place?	Did people in the past travel fast?	Why is our world wonderful?	Who's the king of the castle?	Who rules the oceans?
Kapow Unit	Online safety (3 safety rules) 1.	Data handling: International Space Station		Programming 2: ScratchJr	Creating media: Stop motion (links to a London	

					soldier / King's guard)	
End of Unit Objectives	Pupils who are secure will be able to: • Explain what is meant by online information. • Recognise what information is safe to be shared online. • Explain why we need passwords and what makes a strong password. • Understand that they need to ask permission before sharing content online and explain why. • Understand that they have the right to deny their permission to information about them being shared online. • Say who they can ask for help with online worries. • Use some strategies to work out if online	Pupils who are secure will be able to: • Describe and explain how astronauts' survival needs are met aboard the ISS. • Identify and digitally draw items which fulfil basic human needs when aboard the ISS. • Read the correct temperature on a thermometer. • Design a display showing everything that needs to be monitored by sensors on the ISS. • Create an algorithm that addresses all plants' needs. • Explain how space exploration can benefit life on Earth. • Read data to identify whether		Pupils who are secure will be able to: • Explore a new application independently. • Explain what the blocks on ScratchJr do and use them for a purpose. • Recognise a loop in coding and why it is useful. • Use a code to create an animation of an animal moving. • Use code to follow and create an algorithm. • Program code to run 'on tap'. • Explain the role of the blocks in a program they have created.	Pupils who are secure will be able to: • Create a flip book animation. • Decompose a story into smaller parts to plan a stop motion animation. • Create stop motion animations with small changes between images.	

	information is reliable or not.	a planet might be habitable.				
Computing Vocabulary	Contact Conduct Content Safe Report	• algorithm • astronaut • column • data • digital content • essential • experiment • Goldilocks zone • interactive map • International Space Station • input • monitor • row • satellite • sensor • space • spreadsheet • survival • temperature • thermometer		Code Instructions Forward Backward Right Left Undo Repeat	Flip book Animation. Stop motion Images	

Year 3

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
I wonder theme…	How are things different from the past?	Where would you choose to settle?	Would you prefer to live in the Stone Age, Bronze Age or Ice Age?	What's hidden within? (The rainforest)	Why did the Romans invade Britain?	What can we learn from the world beneath our feet? (Volcanoes)
Kapow Unit	Online safety (3 safety rules)		Creating media: Video trailers (linked to class text)	Data handling: Comparison cards databases (linked to rainforest and		

				planning a visit there)		
End of unit objectives	Pupils who are secure will be able to: • Differentiate between fact, opinion and belief online. • Explain how to deal with upsetting online content. • Recognise that digital devices communicate with each other to share personal information. • Explain what social media platforms are used for. • Recognise why social media platforms are age -restricted.		Pupils who are secure will be able to: • Describe the purpose of a trailer. • Create a storyboard for a book trailer. • Consider camera angles when taking photos or videos. • Import videos and photos into film editing software. • Record sounds and add these to a video. • Add text to a video.	Pupils who are secure will be able to: • Explain what is meant by 'field,' 'record,' and 'data.' • Compare paper and computerised databases. • Put values into a spreadsheet. • Sort, filter and interpret data in a spreadsheet. • Create a graph. • Explain the purpose of visual representations of data.		Pupils who are secure will be able to: • Explain what some of the blocks do in Scratch. • Explain what a loop is and include one in their program. • Suggest possible additions to an existing program by remixing code. • Recognise where something on screen is controlled by code. • Use a systematic approach to find bugs.

			• Incorporate transitions between images. • Evaluate their own and others' trailers.			• Understand the definitions of decomposition and algorithm and how they are used to create accurate code.
Computing Vocabulary	Contact Conduct Content Safe Report • accurate • age restrictions • autocomplete • belief • charity • content • digital device • fact • fake news • hoax • internet • internet of things • opinion • online emotions • organisation • permission • privacy settings • reliable • search • search engine • share • smart devices		• Application • Camera angle • Clip • Cross blur • Cross fade • Cross zoom • Desktop • Digital device • Dip to black • Directional wipe • Edit • Film	• Categorise • Category • Chart • Data • Database • Excel • Fields • Filter • Graph • Information • Interpret • PDF • Questionnaire • Record • Representation • Sort • Spreadsheet		• algorithm • animation • application • code • code block • debug • decompose • game • interface • loop • predict • program • remixing code • repetition code • review • Scratch • sprite • tinker

	• social media platforms		• Film editing software • Graphics • Import • Key events • Laptop • Music • Photo • Plan • Recording • Sound effects • Storyboard • Time code • Trailer • Transition • Video • Voiceover			

Year 4

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
I wonder theme…	What do the Ancient Egyptians believe?	How are rivers used around the world?	How hard was it to invade and settle in Britain?	Would you survive the cold?	Were the Vikings mad, bad or misunderstood?	Where does our food come from?
Kapow Unit	Online safety (3 safety rules)	Programming 1: Further coding with Scratch	Creating media: Website design (about Anglo Saxon facts)			Data handling: Investigating weather
End of unit objectives	Pupils who are secure will be able to: • Describe how to search over multiple platforms and be aware of the accuracy of the results presented. • Describe some of the methods used to persuade people to buy online. • Explain the difference between fact, opinion and belief	Pupils who are secure will be able to: • Understand how to create a simple script in Scratch. • Add or change a sprite and prevent it from rotating. • Use decomposition to identify key features and understand how to decipher actions that make the quiz game work.	Pupils who are secure will be able to: • Use most of the tabs (e.g. insert, pages, themes) on Google Sites on their website. • Create a clear plan for their web page and begin to create it. • Create a professional looking web page with useful information and a clear style, which is easy for the user			Pupils who are secure will be able to: • Search the web efficiently to find temperatures of different cities and record this accurately. • Design a weather station that gathers and records sensor data, explaining how it works and the units of measurement it would use.

	and recognise these online. • Explain what a bot is and give examples of different bots. • Explain some positive and negative distractions of using technology and small strategies for reducing the time spent on technology.	• Understand what a variable is and how to use the 'say' and 'ask' blocks. • Create a variable and be able to use a variable to record a score. • Understand what a variable is and how it works within a program.	to read and find information from. • Create a clear plan by referring back to their checklist. • Create four web pages with a range of features on their website.			• Design an automated machine that uses selection to respond to sensor data. • Search for and record weather forecast information in a spreadsheet and explain how this data is collected. • Create a video which includes weather forecast information.
Computing Vocabulary	Contact Conduct Content Safe Report • accuracy • ad • advantage • advertisement • belief • bot • computer • disadvantage • distraction • fact	code block • conditional statement • coordinates • decompose • feature • information • negative number • orientation • position • program • project • script	Assessment • Audience • Checklist • Collaboration • Content • Contribution • Create • Design • Embed • Evaluate • Features • Google Sites • Hobby • Homepage			accurate • climate zone • condensation • cylinder • degree Celsius • evaporation • extreme weather • filming • forecast • heat sensor • lightning • measurement • pinwheel • presenter

	• hashtag • Implications • in-app purchases • influencer • opinion • program • recommendation • reliable • risk • screen time • search results • snippets • sponsored • trustworthy	• sprite • stage • tinker • variable	• Hyperlinks • Images • Insert • Online • Plan • Progress • Published • Record • Review • Style • Subpage • Tab • Theme • Web page • Website • World Wide Web			• rain • satellite • script • sensor data • solar panel • temperature • thermometer • tornado • weather • weather forecast • wind speed

Year 5

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
I wonder theme…	What are the mysteries and achievements of Ancient civilisations?	What's up high?	What's special about our local area?	Why do the oceans matter?	What was live life in Tudor England?	What's it like in the forest?
Kapow Unit	Online safety (3 safety rules)	Data handling: Mars Rover 1		Computing systems and networks: Search engines (Shakespeare)		Creating media: Stop motion animation (woodland creatures)
End of unit objectives	Pupils who are secure will be able to:	Pupils who are secure will be able to:		Pupils who are secure will be able to:		Pupils who are secure will be able to:

	• Understand that passwords need to be strong and that apps require some form of password. • Recognise some types of online communication and know who to go to if they need help with any communication matters online. • Search for simple information about a person, such as their birthday or key life moments. • Know what bullying is and that it can occur both online and in the real world. • Recognise when health and well - being are being	• Identify some types of data the Mars Rover could collect (for example, photos). • Explain how the Mars Rover transmits the data back to Earth and the challenges involved. • Read any number in binary, up to eight bits. • Identify input, processing and output on the Mars Rovers. • Read binary numbers and grasp the concept of binary addition. • Relate binary signals (Boolean) to a simple character -based language, ASCII.		• Explain what a search engine is, suggesting several search engines to use and explain how to use them to find websites and information. • Suggest that things online aren't always true and recognise what to check for. • Explain why keywords are important and what TASK stands for, using these strategies to search effectively. • Recognise the terms 'copyright' and 'fair use' and combine text and images in a poster. • Make parallels between book searching and		• Create a toy with simple images and a single movement. • Create a short stop motion with small changes between images. Think of a simple story idea for their animation and then decompose it into smaller parts to create a storyboard with simple characters. • Make small changes to the models to ensure a smooth animation and delete unnecessary frames. • Add effects such as extending parts and titles.

	affected in either a positive or negative way through online use. • Offer some advice and tips to combat the negative effects of online use.			internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank.		• Provide helpful feedback to other groups about their animations.
Computing Vocabulary	accurate • advice • app application • app permissions • biography • bullying • communication • emojis • health • in-app purchases • information • judgement • meme • mental health • mindfulness • negative contribution • online • online communication • opinion	• 8 -bit binary • addition • ASCII • binary code • boolean • byte • CPU • data • data transmission • decimal numbers • discovery • distance • Hexadecimal • input • Mars Rover • the Moon • numerical data • output • planet • radio signal		Algorithm • Appropriate • Copyright Correct • Credit • Data leak • Deceive • Fair • Fake • Inappropriate • Incorrect • Index • Information • Keywords • Network • Privacy • Rank • Real • Search engine • TASK • Web crawler • Website		animation • animator • background character • decomposition • design • digital device • edit • evaluate • flipbook • fluid movement • frames • model • moving images • onion skinning • still images • stop motion • storyboard • thaumatrope • zoetrope

	• organisation • password • personal information • positive contribution • real world • strong password • summarise • support • trusted adult • well-being	• RAM • scientist • sequence • signal • simulation • space • subtraction				

Year 6

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
I wonder theme…	What was the impact of WW2?	Would you like to live in the desert?	What did the Greeks ever do for us?	How do we influence the world around us?	Who should feature on the £10 bank note?	Where does our energy come from?
Kapow Unit	Online Safety	Computing systems and networks: Bletchley Park (links back to last half term)	Data handling 1: Big Data 1		Skills showcase: Inventing a product (winner features on the £10 note)	
End of unit objectives	Pupils who are secure will be able to: • Discuss various issues online that can leave pupils feeling sad,	Pupils who are secure will be able to: • Explain that codes can be used for a number of different reasons	Pupils who are secure will be able to: • Understand why barcodes and QR codes were created.		Pupils who are secure will be able to: • Evaluate code, understand what it does and adapt	

	frightened, worried or uncomfortable and can describe numerous ways to get help. • Explain how sharing online can have both positive and negative impacts. • Be aware of how to seek consent from others before sharing material online and describe how content can still be shared online even if it is set to private. • Explain what a digital reputation is and what it can consist of. • Understand the importance of capturing evidence of online	and decode messages. • Explain how to ensure a password is secure and how this works. • Create a simple website with information about Bletchley Park including the need to build electronic thinking machines to solve cipher codes. • Explain the importance of historical figures and their contribution towards computer science. • Present information about their historical figure in an interesting and engaging manner.	• Create (and scan) their own QR code using a QR code generator website. • Explain how infrared can be used to transmit a Boolean type signal. • Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets. • Take real -time data and enter it effectively into a spreadsheet. • Presenting the data collected as an answer to a question. • Recognising the value of analysing real - time data.		existing code for a specific purpose. • Debug programs and make them more efficient using sequence, selection, repetition or variables. • Design appropriate housing for their product using CAD software, including any input or output devices needed to make it work. • Create an appealing website for their product aimed at their target audience, which explains what their product is and what it does using persuasive language.	

	bullying and demonstrate some of these methods on the devices used at school. • Describe ways to manage passwords and strategies to add extra security, such as two - factor authentication. • Explain what to do if passwords are shared, lost or stolen. • Describe strategies to identify scams. • Explain ways to increase their privacy settings and understand why it is important to keep their software updated.		• Analyse and evaluate transport data and consider how this provides a useful service to commuters.		• Create an edited video of their project, articulating the key benefits. • Describe and show how to search for information online and be aware of the accuracy of the results presented.	

Computing Vocabulary	Conduct Content Contact • anonymity antivirus • biometrics • block • consent • digital footprint • digital personality • financial information • hacking • inappropriate • malware • online bullying • online reputation • password • personal information • phishing • privacy settings • private • reliable source • report • respect • scammers • screen grab • screenshot • secure • selfie	Acrostic Code • Brute force hacking • Caesar cipher Chip and pin system • Cipher • Code • Combination • Contribute • Convince • Date shift cipher • Discovery • Hero • Invention • Nth Letter Cipher • Password • Pig Latin • Pigpen cipher • Present • Scrambled • Secret • Secure • Technological advancement • Trial and error	• algorithm • barcode • boolean • brand chip • commuter • contactless • data • encrypt • infrared • proximity • QR code • QR scanner • radio waves • RFID • signal • spreadsheet • systems analyst • transmission • wireless		dapt • advert • algorithm • bugs coding • debugging • design • edit • electronic • evaluate • facts • image rights • images • influence • information • inputs • loops • manipulation • opinions • output • photos • product • program • repetition • screenshot • search engine • selection • sequence • snippets • software • structures • variables • video • website	

	• software updates • two -factor authentication • URL • username					