CURRICULUM DESIGN for COMPUTING

Computing INTENT

At Eden Park, we strive to develop a curriculum relevant to the continuous technological developments of the 21st Century and which reflects the experiences of our children. We recognise that our children need to be given the computational and digital knowledge and skills that prepare them for being able to understand technological change and to be enabled to adapt to future technological developments. This is achieved by a high-quality computing education that equips pupils to use computational thinking and ensures that all pupils are responsible, competent, confident and creative users of their technological world. The children's computational thinking is advanced through cultural capital, opportunities to use computing outside of this curriculum framework, and through our structure of voices and themes. We aim for the children to leave Eden Park with the experience of a broad, rich and ambitious computing curriculum. Our curriculum development has been supported by The Exeter Computing Hub, part of National Centre for Computing Education (NCCE), to help ensure children receive a world leading computer education.

Computing IMPLEMENTATION

Computing follows the National Curriculum; objectives are delivered through long and short enquiries, across three themes: Computer Science, Information Technology and Digital Literacy. The computing 'voices' ensure skills specific to Computing are taught each and every year; they are repeated and progressive. The curriculum makes use of prior knowledge and provides clear references on how learning will be used in future enquiries. At the end of the enquiry, a high-quality 'outcome' is shared with others, including parents and/or the school community.

Classrooms are well resourced for Computing delivery, including the use of teacher laptops and iPads that can connect to televisions and the ready availably of numerous iPads in every room accompanied by fast internet connection. Some classes also have interactive whiteboards and keyboards.

Children also progress their computing knowledge through specific learning in relation to the framework of 'Education for a Connected World', supporting the children's engagement with online safety so that they can be safe, healthy and thrive online. Computing is also embedded through the everyday use in the classroom that given them a rich experience as well as creating media through other curriculum areas.

For those children that show a particular enthusiasm for the subject, they have the opportunity to become a "Graduate." Our Graduation scheme gives children the chance to explore learning beyond the National curriculum. This scheme focuses on Inspirational and Influential people within Computing.

Computing IMPACT

Impact of teaching and learning will be determined through SLT reviews, subject lead observations and Kahoot quizzes. The Head of School meets with children and questions them on their learning and determines the depth of their knowledge as well as their reflections on the core values that they were working on. At the end of each enquiry children are assessed using Kahoot quizzes. By reaching our defined 'end-points', we can be confident that children have been offered a rich and purposeful curriculum, and these are available in this document. This information will be collated in our 'Quality of Education' document.

Progression of Knowledge

Our Computing curriculum for KS1-KS2 follows four main themes of computer science, information technology and digital skills which can intertwine with each other as they progress through the year groups. There is an expectation that children will use their prior learning and build upon this as they journey through Eden Park. Children will reach an **end point** where their understanding of computing has been strengthened and deepened through this purposefully mapped out curriculum.

In EYFS, our curriculum is sequenced through experiences, children learn through play opportunities and engage in challenges linked to the EYFS curriculum. The classrooms contain a role play area with a range of technology (iPads and Desktops) both functioning and model / broken devices, or a variety of electronic toys such as remote-controlled cars, walkie-talkies and interactive pets. Children tinker and play with these devices during continuous provision. Children will use technology to solve problems and produce creative outcomes, especially in developing their initial understanding and having opportunities to use computational thinking effectively. From our Nurseries to Reception, there is a difference between the technology around us' enquiry where children develop their knowledge of basic computer uses. Children are introduced to desktop computers to give children prior knowledge for Year 1 with their 'Technology around us' enquiry where children develop their knowledge of basic computer uses. Children are introduced to the theme being safe online with role play and specific teaching opportunities such as internet safety day. The EYFS curriculum is mindful of how their curriculum can be used to create the foundations of prior knowledge which we build upon as children journey through Year 1 and KS1.

Computer Science		Information	Technology	Digital Literacy		
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Long Enquiry	Technology Around Us	Programming Quizzes	Stop Frame Animation	Repetition In Shapes and Games	Webpage Creation	Selection in physical computing (Crumble Face)
Short Enquiry	Moving Robots	Pictograms	Connecting Computers	Data Logging	Vector Drawing	Introduction to spreadsheets
End points:	 By the end of K ✓ Have experienced desktops, bee bots ✓ Learnt how to creat knowledge of how ✓ Learnt how to use that can be transfe ✓ Have created and representation usi ✓ Have experience of practical purpose. 	Sey Stage 1, children will: I a range of hardware such as s and iPads. ate a simple program and develop the v to debug an algorithm. basic components of a computer erred to other hardware. sorted data into a visual ing a specific software. of creating blocks of code for a	 By the end of Key Stage 2, children will build on their prior knowledge of the past and extend. Children will: Create a stop animation frame using a new software. Develop their knowledge of how computer systems work and are connected together through networks. Develop their understanding of patterns in algorithms and be able to loop sequences of code for a specific purp. Extend their experience and knowledge of collecting data through uses of hardware and analysing the data on t computer system. Apply their knowledge of computer science and programming to a physical computing system. Design vectors through creating objects and layering them to then create a shape. Create a webpage to extend their knowledge of computer systems and start to develop their knowledge of HTN code. Create a spreadsheet from collecting information, input data to a formula and representing the data in form of graph and table. 			

The Voices of Computing (Disciplinary Knowledge)

Woven through our Computing curriculum are our 'Voices'. It is our intention that the voices are used, where appropriate, during Computing teaching. Children will therefore encounter these 'Voices' repeatedly throughout their time at Eden Park. They will use their prior knowledge of a specific 'voice', such as 'create and collaborate' **and** build upon this in their Learning Enquiries. The 'Voices' are progressive.

	Digital Citizens	Create and Collaborate	Computational thinking	Analyse and evaluate	
EFYS	 Discuss with a peer how to use a device. Explore a range of technology both functioning and broken. Can use the internet with adult supervision to find and retrieve information of interest to them. Being able to talk about internet safety. 	 ✓ Use ICT hardware to interact with age- appropriate computer software ✓ Begin to independently take photographs and videos. ✓ Use a piece of software with a peer. ✓ Can create content such as a video recording, stories, and/or draw a picture on screen 	✓ Understand how a command gives an outcome. ✓ Completes a simple program on electronic devices	 ✓ With support, analyse how to fix a technological problem. ✓ Explain how they were successful with a piece of technology. . 	
KS1	 Recognise different uses of technology. Explain the rules of technology when at school and at home to kee safe. Seek support from an adult when navigating online or encountering something that worries you. Explore unfamiliar software by making connections with familiar software and technology. 	 Design a simple programme for a specific purpose. Create images using specific software. Work with others in designated role to contribute towards a specific outcome. Pick a specific design element to impact an outcome. Begin to recognise that specific tools will impact/contribute towards my design. 	 Explain what an algorithm is. Modify an algorithm for a specific outcome. Begin to recognise patterns in an algorithm. With support, decompose an algorithm into its simple functions. 	 Begin to analyse potential problems and software and explain solutions to fixing them. Make predictions about a simple sequence of commands. Begin to debug algorithms. Evaluate the effectiveness of my work and suggest improvements. 	
Y3/4	 Recognise and explain the risks while communicating online and know where to report problems to. Explain different strategies of keeping personal data safe. Independently navigate online to work towards a specific outcome. Recognise a digital device and how they contribute towards a network Explain different types of hardware they have used and the purpose of it. 	 Begin to collaborate with different software towards a design purpose. Create media using specific tools a software. Know the tools that enable one to edit media creations. Be able to switch between roles when working towards an outcome. 	 Explain the difference between an algorithm and code. Recognise patterns and loop them within coding. Explain the difference between controlled loops and infinite loops and when to apply them. Understand how to generalise a code into its key functions. Amend a code to change its designed outcome or function. 	 Select relevant software and tools from analysing the purpose they are required for. Read code and be able to debug it without seeing at work. Evaluate the effectiveness of others' outcomes and suggest improvements linked to a tool. Analyse a new piece of technology with confidence and demonstrate how to use it. 	
Y5/6	 Recognise and explain how the online world is designed to alter your opinion. Positively operate online developin a strong reputation while communicating with others. Explain how data and information i shared and stored through a series of networks. 	 Confidently combine different software and designs to an overall outcome. Use specific drawing tools through grouping and duplicating to create an image. Confidently collaborate different software and tools to produce a design. Mentor others within a process that ensure that equal knowledge is gained. 	 Code a physical computing component through selecting specific conditions. Understand how selection in coding works which they can demonstrate within writing an algorithm or code. Begin to recognise and use HTML code. Decompose a code to change a specific function. 	 Recognise and explain that there could be more than one solution to a problem. Explain and modify a problem to its most effective solution. Evaluate their work to ensure it reflects the purpose of the design. Specially modify parts of a sequence within an outcome to improve its quality. 	

	YE	AR 1	YEAR 2	
Theme	Computer Science	Information Technology	Information Technology	Computer Science
Duration	Short Enquiry	Long Enquiry	Short Enquiry	Long Enquiry
	Moving Robots	Technology Around Us	Pictograms	Programming Quizzes
National Curriculum	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	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	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.
		internet or other online technologies.		Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
Specific content	This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. Time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms.	Learners will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. Learners will also consider how to use technology responsibly.	Learners will begin to understand what the term data means and how data can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions. The work will make use of maths teaching.	Learners will be introduced to on-screen programming through Scratch Jr. They will use programming blocks to use, modify, and create programs. Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in Scratch Jr and realise these designs in Scratch Jr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects.
Sequencing knowledge	Prior knowledge: Children are experienced with being able to complete a simple program on different electronic devices, such as an iPad. Future knowledge: Children will apply their knowledge of program design to on screen programming technology and be able to use, modify and create programs (Year 2)	Prior knowledge: Children have had experience of desktop computers through playing games and using others hardware through supervised experiences. Future knowledge: Learners will use their knowledge of digital devices and compare them with non-digital devices. Leaners will be introduced to networks and connecting devices.	Prior knowledge : Pictograms and tallies are introduced in year 1 maths and geography. Future knowledge: Children will use their knowledge of collecting and presenting data to the use of data loggers, by being able to set data points and logging intervals to analyse and review data on a computer system.	Prior knowledge : In Year 1, children were introduced to the early stages of program design through the introduction of algorithms. Future knowledge: Children will use their knowledge of Scratch Jr, creating an algorithm and modifying and debugging codes to use infinite loops to creates shapes and games.

Tier 2 and	Task – what is needed	Technology	Data	Programming tools
Tier 3	Design – what it should do	Desktop	Tally charts	Algorithms
vocabulary	Code – how it is done	Laptop	Tally count	Simple programs
	Algorithms	Logging in	Total	Programming area
	Digital Device	Computer	'More than' and 'less than'.	Programming blocks
	Hardware	Switch	Record	Project
	Device	Mouse	Represent	Sequence
	Command	Click	Pictogram	Outcome
	Direction	Drag	Collection methods	Design
	Program	Images	Common attribute	Complex program
	Debug	Function	Organise	Debug
	Sequence	Keyboard	Conclusion	
		Save icon		
		File		
		Edit text		
		Deleting		
		Arrow keys		
		Cursor		
Resources	Bee Bots or Moving Robots	Chrome Books or desktop computers	During this unit of work learners will use j <u>2e</u>	All the lessons in this unit require access to
	Arrow Commands	Wireless keyboards for the iPads.	pictogram tool which can be accessed online	ScratchJr.
			using a desktop, laptop or tablet computer.	Download ScratchJr App for tablets (iPad or
			Your school may have access to an	Android), or install ScratchJr
			equivalent alternative which could be used	(https://jfo8000.github.io/ScratchJr-Desktop/)
			instead.	

	YEAR 3		YEAF	YEAR 4		
Theme	Information Technology	Digital Literacy	Information Technology	Computer Science		
Duration	Short study Connecting Computers	Long study Stop Frame Animation	Short study Data Logging	Long study Repetition In Shapes and Games		
National Curriculum	Use sequence, selection, and repetition in programs, work with variables and various forms of input and output. 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. 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.	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 sequence, selection, and repetition in programs; work with variables and various forms of input and output.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 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.		
Specific content	Learners will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They will also compare digital and non-digital devices. Learners will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. Finally, learners will discover the benefits of connecting devices in a network.	Learners will use a range of techniques to create a stop-frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text.	Pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.	Learners will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text- based programming language. The children program games, where the children explore a Scratch activity. Learners discover similarities between two environments. Learners look at the difference between count-controlled and infinite loops and use their knowledge to modify existing animations and games using repetition. They design and create a game which uses repetition, applying stages of programming design throughout.		
Sequencing knowledge	Prior knowledge: Children have knowledge of what is a computer system and how to use simple components on that computer system.	<u>Prior knowledge:</u> Children already have experience and knowledge of digital devices and have experience of creating media through other curriculum opportunities.	Prior knowledge: Children have knowledge of collecting data in a tally form and representing it through pictograms.	Prior knowledge: Children have knowledge and experience of creating a sequence of commands into an algorithm.		

	Future knowledge: Children will understand	Future knowledge: Children will develop their	Future knowledge: Children will use their	Future knowledge: Children will apply
	that a computer network is a source of data	video editing skills which will be used in	knowledge of collecting, representing and	their knowledge of block-based
	(information) that will use in various ways	curriculum opportunities and will able to	analysing data by applying it to the	language (e.g., Scratch) and understand
	through digital devices they encounter	apply when creating other forms of media.	software of a spreadsheet.	the concepts of sequence and
	across the computing curriculum.			repetition to program the components
				of a physical computer.
Tier 2 and Tier 3	Input,	Simple animation	Sensors	Text-based programming Language
vocabulary	Process	Sequence	Data	Outcome
	Output	Photographs	Collected	Symbols
	Digital devices	Animation	Automatically	Repeated
	Function	Stop-frame animation	Physical world	Repeated pattern
	Simple process	Storyboard	Data loggers	Sequence
	Non-digital tools	Onion skinning	Digital device	Count-controlled loop
	Network / Network switch	Frames	Input devices	Infinite/ Loop
	Systems	Media	Regular intervals	Procedure
	Multiple/ connections		Intervals	Repetition
	Components		Data file	Block-based programming
	Wireless		Software	Programming environment
	Access points		Duration	Modify
	Network infrastructure		Data logging process	Programming languages
	Physical components		Conclusion	
Resources	You will need digital devices for learners to	It is recommended that you use a tablet for	If you don't have access to data loggers, a	You can use either a tablet, desktop or
	interact with during this unit. Lesson 3	this unit as this makes it simpler for learners	lot of the activities can be completed using	laptop computer for this unit. Logo
	requires digital devices with a painting	to take the photos and do the editing.	tablet computers and apps such as Google	software should be installed or
	application. Lesson 6 includes a 'network	However, you could use stop-frame	Science Journal.	accessible online, for example:
	tour', which involves learners identifying key	animation software on a desktop or laptop if		• You can use Turtle Academy online
	parts of your school network. You will	this is what you have available. This unit uses	Arduino Science Journal	at <u>turtleacademy.com/playground</u>
	therefore need access to your school's	screenshots from iMotion which is an iPad		• You can download FMS Logo from
	server, switch, and wireless access points.	app, but you could also try Stop Motion		fmslogo.sourceforge.net
		Studio if you have Android tablets.		It is recommended that learners use
				desktop or laptop computers to access
				Scratch (scratch.mit.edu). We
				recommend the use of teacher
				accounts in Scratch to make it easier to
				manage student accounts. For guidance
				on setting up teacher accounts, please
				visit the Scratch website.
				(<u>https://scratch.mit.edu/educators/faq</u>)
				For iPads- <u>Connecting to Apple Music.</u>
Other Curriculum			Music: Sway	
Areas			Geography: Green Screen and iMovie	
			Writing: Adobe spark	
			Classroom: Teams	

	YEAR 5		YEAR 6		
Theme	Digital Literacy	Digital Literacy	Information Technology	Computer Science	
Duration	Short study	Long study	Short study	Long Study	
	Vector Drawing	Web Creation	Introduction into Spreadsheets	Physical Computing	
National	Select, use and combine a variety of	Use search technologies effectively,	Select, use and combine a variety of software	Design, write and debug programs that accomplish	
Curriculum	software (including internet services) on a	appreciate how results are selected and	(including internet services) on a range of	specific goals, including controlling or simulating	
	range of digital	ranked, and be discerning in evaluating	digital devices to design and create a range of	physical systems; solve problems by decomposing	
	devices to design and create a range of	digital content.	programs, systems and content that	them into smaller parts.	
	programs, systems and content that	Solact use and combine a variety of software	accomplish given goals, including collecting,	Use sequence, selection, and repetition in	
	goals including collecting analysing	(including internet services) on a range of	information	programs, work with variables and various forms	
	evaluating and presenting data and	digital devices to design and create a range		of input and output.	
	information	of programs, systems and content that			
		accomplish given goals, including collecting,		Use logical reasoning to explain how some simple	
		analysing, evaluating and presenting data		algorithms work	
		and information.		and to detect and correct errors in algorithms and	
				programs	
		Use technology safely, respectfully and			
		responsibly; recognise			
		acceptable/unacceptable benaviour; identify			
		content and contact			
Specific	Learners start to create vector drawings.	Learners will be introduced to creating	This enquiry is about introducing learners to	Learners will use physical computing to explore	
content	They learn how to use different drawing	websites for a chosen purpose. Learners	spreadsheets. They will be supported in	the concept of selection in programming through	
	tools to help them create images.	identify what makes a good web page and	organising data into columns and rows to	the use of the Crumble programming	
	Learners recognise that images in vector	use this information to design and evaluate	create their own data set. Learners will be	environment. Learners will be introduced to a	
	drawings are created using shapes and	their own website using Google Sites.	taught the importance of formatting data to	microcontroller (Crumble controller) and learn	
	lines, and each individual element in the	Throughout the process, learners pay	support calculations, while also being	how to connect and program it to control	
	drawing is called an object. Learners layer	specific attention to copyright and fair use of	introduced to formulas and will begin to	components (including output devices — LEDs and	
	their objects and begin grouping and	media, the aesthetics of the site, and	understand how they can be used to produce	motors). Learners will be introduced to conditions	
	of more complex pieces of work	navigation paths.	to apply formulas that include a range of colle	as a means of controlling the flow of actions in a	
	of more complex pieces of work.		and apply formulas that include a range of cells	program. Learners will make use of their	
			duplicating them Learners will use	introduced to the concept of selection (through	
			spreadsheets to plan an event and answer	the 'ifthen' structure) and write algorithms and	
			questions. Finally, learners will create graphs	programs that utilise this concept. To conclude the	
			and charts, and evaluate their results in	unit, learners will design and make a working	
			comparison to questions asked.	model of a fairground carousel that will	
				demonstrate their understanding of how the	
				microcontroller and its components are	
				connected, and how selection can be used to	

				control the operation of the model. Throughout this unit, learners will apply the stages of programming design.
Sequencing knowledge	Prior knowledge: Children have prior knowledge of using computer systems with moving objects, using menus to find tools, copying and pasting. They will also be able to apply their knowledge of coding and animation to group and duplicate. Future knowledge : The knowledge of repetition of grouping and layering objects will support children in being able to use sequence, selection, and repetition in programs; work with variables and various forms of input and output in KS3.	Prior knowledge: Children have knowledge and experience digital devices with understanding of how to create and evaluate code for a function on a device. Children will have knowledge of computer networks and how devices are connected in a network, with how data and information is shared between devices. Future knowledge: In KS3 children will be creating digital artefacts for a specific purpose, which include webpages. They will continue of develop their knowledge of HTML and be introduced to CSS.	Prior knowledge: Children (in year 4) have prior knowledge in collecting data through data loggers and then analysing and interpretating data on a computer system. They also have previous knowledge of creating pictograms on a computer system. Future knowledge: In KS3, children will develop their knowledge of spreadsheets by using spreadsheets to sort and filter data and using formulas and functions in spreadsheet software.	Prior knowledge: Children have prior knowledge in being able to create repeating sequences in algorithms and debug code, which can be applied to programming a physical computing system. Future knowledge: Children will be able to apply their knowledge of creating a physical computing system to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems within KS3.
Tier 2 and Tier 3 vocabulary	vector drawings shapes drawing tools resizing, rotating duplicate element zoom tool handles modify layers	HTML code media common features fair use copyright sources home page devices content navigation path hyperlinks	spreadsheet organise table data headings cell formulas inputs output calculated data operations duplicating multiple cells graph	Crumble controller Programming environment Infinite loops / repetition simple circuit microcontroller motor design sequence components count-controlled loops outputs/ Input conditions Crumble switch selection represent conditions
Resources	This unit is planned using the Google Drawings application. All Google Drawings files are provided in the lesson plans (the links create a copy of the drawing that can be edited). However, if you wish to use a different vector drawing program, all of the resources are included in the folders as Google Slides presentations. The contents of these files can be copied across to your preferred program. In order to demonstrate the tools and skills involved in vector drawings, it is recommended that you use a vector drawing program, such as <u>Vectr</u> . While the resources could be used in the Google Slides files, it is important that learners	It is recommended that learners use laptop or desktop computers for this unit of work. The unit has been based on the use of <u>Google Sites</u> , which is free to use with any Google account. If your school uses the free <u>Google Workspace for Education</u> , your Google administrator can create accounts for pupils and also ensure that the Google Sites feature is enabled. If you don't have a school Google Workspace account, your school may choose to set one up or you may opt to create individual Google accounts for your learners to use. Whichever option you choose, it should be in line with your school's policies.	Excel or Numbers on the iPad	 1 Crumble controller 12 crocodile leads 2 Sparkles (a Sparkle is a RGB LED — red, green, blue light-emitting diode. The D connector allows the Crumble to use an electronic signal to control the Sparkle. The signal sets the colour and brightness of the LED.) 1 push switch suitable for Crumble 1 light sensor suitable for Crumble 1 buzzer suitable for Crumble 1 micro USB cable 1 switched battery box suitable for Crumble

	recognise that true vector drawings are			
	made using a vector drawing program.			
Other	Science – how humans change book creator to make a book called Human E	Explorers –		
Curriculum	NUMBERS app to make graphs			
Areas	Maths – numbers app for graphs, photos for fractions			
	Science – living things digital microscopes and take photographs of dissecting flowers and			
	animal life cycles			
	Geography –SWAY presentations			
	Computing DT –iMovie adverts for their moving toys, make PowerPoint presentations for			
	instructions. Use stop frame sequences to record procedures in DT unit.			
	Literacy – use adobe spark to text map a text			