Ruardean C of E Primary School Computing Scheme of Work Sept 2021

Year	Multimedia	Programming	Online	E-Safety**	Data
1	**Activity 1: Graphics cc ART (Revelation Natural Art Simple)** Use ICT to generate a picture. Use various tools including brushes, pens, lines, fill, spray and stamps. Use save, retrieve, amend and print with support. **Activity 2: Text (BookCreator, Word, etc)** Use the spacebar, back space, enter, shift and simple punctuation. Start to use two hands when typing. Word process <u>short</u> texts, rather than copying up written work.	**Activity 1: Bee Bots (toy)** Give and follow instructions, which include straight and turning commands, one at a time. Encourage children to offer two or more instructions to achieve the outcome as they become able to do this. **Activity 2: Daisy Dino** Play with app and attempt the challenges. Use the IWB to show the app to the class. **Knowledge:** Computers/devices are controlled by a sequence of instructions. A computer program is like the narrative part of a story, and the computer's job is to do what the narrator says. Computers have no intelligence, and so follow the narrator's instructions blindly.	**Activity 1: Websites** Talk about websites they have been on. Explore a website by clicking on buttons, arrows, menus and hyperlinks. Navigate 'back' by clicking on the 'back' button. Complete a search under the supervision of adults. **Activity 2: Email** Observe a class email. Talk about what happens.	Make decisions about whether or not statements or images found on the internet are likely to be true. Tell an adult if anything worries them online. Identify different devices that can go on the internet, and separate those that do not. Identify what things count as personal information. Identify when inappropriate content is accessed and act appropriately.	Sort objects and pictures in lists or simple tables, e.g. on IWB.

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2	**Activity 1: Multimedia (Photostory)** Learn to create a simple multimedia presentation with photos/pictures, text, voice over, music etc. Use 'Save Project' to be able to revisit and edit their work. **Activity 2: Video (iMovie app)** Capture video. Discuss which videos to keep and why. Add simple titles, credits and voice over. **Activity 3: Graphics cc ART (Revelation Natural Art Junior)** Continue exploration of tools from Year 1. Use watercolours for colour wash effects, colour mixing etc. Use save, retrieve, amend and print.	**Activity 1: Daisy Dino** Use the 'repeat' (loop) and 'when' (conditional statement) command within a series of instructions. Plan a short 'story' for a sprite and write the commands for this. Edit/refine a sequence of commands. **Activity 2: Bee Bots (toy and app)** Give and follow instructions, which include straight and turning commands, one at a time. Encourage children to offer two or more instructions to achieve the outcome as they become able to do this. **Knowledge:** Steps can be repeated within algorithms	**Activity 1: Websites** Begin to use websites for research e.g. topic work. Navigate to particular websites from links on a (Word) document and by typing a simple url. Answer questions/ make notes from information found. **Activity 2: Email** Contribute to a class email. Recognise an email address. Find the @ key on a keyboard. Open and select to reply to an email as a class.	Identify obviously false information in a variety of contexts. Tell an adult if anything worries them online. Recognise that a variety of devices (XBox, PSP etc as well as computers and phones) connect users with other people. Identify personal information that should be kept private. Consider other people's feelings on the internet. Remember and use *Sid's Top Tips*.	Furbles (software) Use the simpler activities in this software to introduce pupils to sorting and presenting information to support the maths curriculum.

	Activity 4: Text (BookCreator, Word, etc) Use the spacebar, back space, enter, shift and simple punctuation. Use two hands when typing. Word process short* texts, rather than copying up written work. Begin to use cut/copy/paste and change font size and style to rearrange and improve texts. NB pupils could be given a piece of text to improve ie several short sentences to edit with connectives. *use common sense relating to typing speed.	Algorithms can be represented in simple formats [storyboards and narrative text] Awareness that to make something useful happen on a computer it needs to be given clear instructions e.g. a program that someone has written.			

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3	**Activity 1: Multimedia (Photostory)** Reinforce learning from previous year e.g. create a simple multimedia presentation with photos/pictures, text, voice over, music etc. Learn to pan and zoom over pictures to focus attention appropriately. Use 'Save Project' to be able to revisit and edit their work. **Activity 2: Graphics cc ART (Revelation Natural Art Junior)** Use at least once a year linked to the Art curriculum. Use save, retrieve, amend and print. **Activity 3: Text (BookCreator, Word, etc)** Continue to use Word (linked to the Literacy	**Activity 1: Unit the Robot (website)** Use practise mode to burst as many balloons as possible. Pupils who are able to move onto program mode. When in program mode pupils need to be shown that they can use trail and improvement when building their program. Ask pupils to make their program as efficient as possible. Also use Apple picking activity in a similar way, if time permits. **Activity 2: Mission Control** Use the program in activity (not adventure) mode. Pupils to be challenged with 'Juicy drinks' and 'Lifting the heavy load' activities at Level 1. More able pupils should compose a set of instructions for other children to complete the task.	**Activity 1: Internet research** Type in a URL to find a website. Add websites to favourites. Use a search engine to find a range of media, e.g. images, text (under supervision) Begin to think of search terms to use linked to questions they are finding the answers for. Talk about the reliability of information on the internet, e.g. the difference between fact and opinion (link to E-Safety) **Activity 2: Email** Group activities – send an email to another class e,g, about enterprise activity etc	Question the "validity" of what they see on the internet. Tell an adult if anything worries them online. Use a browser address bar not just search box and shortcuts. Think before sending and suggest consequences of sending/posting. Recognise online behaviours that would be unfair.	Furbles (software) Use to develop pupils knowledge and understanding of graphs, tables and charts.

	curriculum?), learning additional tools as required. *Get quicker at typing using both hands.* Learn to insert a picture in Word and vary its position on the page. Consolidate use of cut/copy/paste and change font size and style to rearrange and improve texts. **Activity 4: Video (iMovie app)** Use to consolidate learning in Year 2. Add additional skills as required.	More able pupils might move on to Level 2 or other activities if time permits. **Knowledge:** Algorithms can be represented symbolically e.g. Unit the Robot symbols. Algorithms should be stated without ambiguity and care and precision are necessary to avoid errors. Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. A computer program is a sequence of instructions written to perform a specified task with a computer.	**Activity 3: Blogging (to be added when resources have been researched)** Navigate to view their class/school blog. Understand that their class/school blog can be updated from a range of devices. Comment on their class/school blog. Subscribe with an adult's email to receive updates about their class/school blog		

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4	**Activity 1: Text (BookCreator, Word, etc)** Continue to use Word, consolidate skills learnt and learning additional tools as required. BookCreator - if possible provide opportunities for children to create a book using skills from previous years. **Activity 2: Multimedia (Powerpoint, Photostory)**	**Activity 1: Scratch** Pupils to learn how to program using Level 1 activity sheets. **Navigate the Scratch programming environment.* *Create a background and sprite for a game.* *Add inputs to control their sprite.* *Use conditional statements (if… then) within their game.* *to be edited when sheets checked for content.	**Activity 1: Internet research** Continue to use websites for research. Understand that not everybody who builds a website puts accurate information on it e.g. All about explorers (website) **Activity 2: Emails** Log in to an email, open emails, create and send replies.	Recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles). Make judgments in order to stay safe, whilst communicating with others online. Tell an adult if anything worries them online.	Create and analyse bar charts in Excel to link to Maths. Use a ready prepared spread sheet to solve problems. Edit some of the data in the spread sheet. Continue to use Furbles if this will benefit pupils mathematical development.

	Powerpoint - Produce a short sequence of slides with text and pictures, adding transitions (and sound effects?). Photostory – if possible provide opportunities for children to produce a short 'video' using skills learnt in previous years. **Activity 3: Graphics cc ART (Revelation Natural Art Junior)** Use once during the year linked to the Art curriculum. Use save, retrieve, amend and print. **Activity 4: Video (iMovie app)** Capture video for a purpose. Discuss the quality of videos and chose which to keep and which to re-shoot.	**Activity 2: Logo (Microsoft Windows Logo – MSWLogo)** Explore the basic primitive commands (Logo detective sheet). Spend a little time (playing) with the onscreen turtle. First set of Logo challenges to produce given shapes. NB: be aware that some pupils need time to understand that directions relate to the turtles position and not their own. **Knowledge:** Algorithms can be represented symbolically or using instructions in a clearly defined language [turtle graphics]. The idea of a program as a sequence of *statements* written in a programming language [Scratch] Programs can be created using visual tools.	Attach files to an email. Download and save files from an email. Email more than one person. **Activity 3: Video conferencing** Make/receive and voice and video call e,g, Facetime or Skype between classes. **Activity 4: Blogging (to be added when resources have been researched)**	Identify dangers when presented with scenarios, social networking profiles, etc. Articulate examples of 'good' and 'bad' behaviour online.	

	Begin to learn to trim and arrange clips to convey meaning. Add titles, credits, slide transitions, special effects and talk about the effect these have on the audience.				

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5	**Activity 1: Text and Multimedia (BookCreator, Word, etc)** Continue to use Word, consolidate skills learnt and learning additional tools as required. Powerpoint – Consolidate work from last year. Produce a short sequence of slides with text and pictures, adding transitions (and sound effects?).	**Activity 1: Scratch** Pupils to learn how to program using Level 2 activity sheets. **Navigate the Scratch programming environment.* *Create a background and sprite for a game.* *Add inputs to control their sprite.* *Use conditional statements (if… then) within their game.*	**Activity 1: Internet research** Understand websites such as Wikipedia are made by users (link to E-Safety) Use strategies to check the reliability of information, e.g. cross checking with books.	Judge what sort of privacy settings might be relevant to reducing different risks. Judge when to answer a question online and when not to.	Continue to use bar charts in Excel as appropriate. Begin to learn to write simple formulas to make things happen in a spread sheet, use replication.

	Begin to learn to use action buttons to make a variety of things happen. Photostory – if possible provide opportunities for children to produce a short 'video' using skills learnt in previous years. **Make use of previously learnt applications e.g. Revelation Natural Art, PhotoStory, iMovie, BookCreator to enhance the curriculum for pupils where relevant.** **Activity 2: Animation (Zu3D)** Begin to learn the basics of the program to animate still objects e.g. Lego figures etc.	*to be edited when sheets checked for content. **Activity 2: Logo (Microsoft Windows Logo – MSWLogo)** Reinforce learning from Year 4. Learn to use repeat loops to improve efficiency of instructions. Staircase and Polygon challenges. **Knowledge:** Algorithms may be decomposed into component parts (procedures), each of which itself contains an algorithm. Algorithms can include selection (if) and repetition (loops). The behaviour of a program should be planned. **One or more mechanisms for selecting which statement sequence will be executed, based upon the value of some data item*	Use their knowledge of domain names to aid their judgment of the validity of websites. **Activity 2: Emails** Continue to use email when appropriate. **Activity 3: Cloud computing** Understand files may be saved off their device in 'clouds' (servers). Upload/download a file to the cloud on different devices. **Activity 4: Video conferencing** Make/receive and voice and video call e,g, Facetime or Skype between classes. **Activity 4: Blogging (to be added when resources have been researched)**	Be a good online citizen and friend, not a 'digital bystander'. Articulate what constitutes good behaviour online. Find and cite the web address for any information or resource found online. Use different sources to double check information found.	Learn to use a 'flat file' database e.g. clowns, to answer questions.

		*to be edited when Scratch sheets checked for content.			

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6	**Make use of previously learnt applications e.g. Word, Powerpoint, Revelation Natural Art, PhotoStory, iMovie, BookCreator and Zu3D to enhance the curriculum for pupils where relevant.** Pupils should extend their knowledge of tools within programs and the focus should be on improving the quality and appropriateness for audience of the materials they produce. Pupils	**Activity 1: Scratch** Design their own game/activity this to include as much of the following as possible; • sprites, backgrounds, scoring and/or timers. • conditional statements, loops, variables and broadcast messages.	**Activity 1: Internet research** Reinforce learning from Year 5. E.g. • Use strategies to check the reliability of information • Use their knowledge of domain names to aid their judgment	Find *report* and *flag* buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc) 'click-CEOP' button and explain to parents what it is for. Discuss scenarios involving online risk.	Create and analyse pie charts in Excel to link to Maths. Build a simple spread sheet to solve a maths problem. Reinforce learning of a 'flat file' database

	should be encouraged to select the best application for the task in hand.	Evaluate the effectiveness of their game/activity and debug if required. **Activity 2: Optional if time allows - Logo (Microsoft Windows Logo – MSWLogo)** Reinforce learning from Year 5. Learn to improve efficiency by writing procedures. Use procedures to produce multi coloured 'Spirograph' patterns. **Knowledge:** Algorithms can be represented symbolically or using instructions in a clearly defined language [turtle graphics] Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. Algorithms can include selection (if) and repetition (loops).	of the validity of websites. Continue to make good use of websites for research. **Activity 2: Emails** Continue to use email when appropriate. **Activity 2: Emails** Continue to use email when appropriate. **Activity 3: Video conferencing** Make/receive and voice and video call e,g, Facetime or Skype between classes. **Activity 4: Blogging (to be added when resources have been researched)**	State the source of information found on the internet. Act as a role model for younger pupils, including promoting *Sid's Top Tips*.	e.g. doctors surgery, to answer questions.

		A well-written program tells a reader the story of how it works, both in the code and in human-readable comments Computers can be programmed so they appear to respond 'intelligently' to certain inputs.			

NB: Stemworks visit would introduce pupils to the ideas of algorithms in the form of flow charts.