Welcome to the Computing Curriculum map for Year 4

Curriculum Overview

YEAR 4	Text & Multimedia	Digital Media (Graphics & Sound)	Digital Research	Data Logging	Programming & Control	Simulations & Modelling	Communication & Collaboration

Please see below for specific computing modules.

Year 4 Computing– Autumn 1
'Text & Multimedia'

COMPUTING ELEMENT	SKILLS	SOFTWARE TOOLS	CROSS-CURRICULAR LINKS/NOTES
Multimedia & Word Processing • 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	• I can evaluate a range of electronic multimedia, appropriate to task e.g website, photostory, leaflet, and recognise key features of layout and design • With support, I can plan the structure and layout of document/ presentation. • I can select and import graphics from digital cameras, graphics packages and other sources and prepare it for processing using ICT. (e.g. cropping, resizing and editing). • I can select and import sounds (eg own recording, sound effects bank created by teacher and video/ visual effects into a multimedia presentation). • Through peer assessment and self evaluation, I can evaluate work both during and after completion, and make suitable improvements. • I can create for a particular audience. **When word processing children should:** • I can choose freely from a range of text styles, to suit a particular audience. • I can hold two hands over different halves of the keyboard • I can use more than two fingers to enter text. • I can Use appropriate editing tools to ensure their work is clear and error free, e.g., spell checker, thesaurus, find and replace.	**Multimedia Packages:** **Powerpoint** - Create slides and add pictures, text, WordArt, Video**.** **Word processing Packages:** - Microsoft Word **Microsoft Photostory** (as whole class) - Combines photos into a slideshow and allows sound, voice commentary and titles to be added. **Touch Typing Course:** - BBC Dance Mat Typing (www.bbc.co.uk/schools/typing) - 2type **Teachers Resources:** LGFL Audio Network (bank of sounds).	**CURRICULUM LINKS** **ENGLISH** • Practise writing for different audiences. • Use word processing to support the writing of stories, play scripts, poetry and non-fiction genres such as letters and chronological reports.

Year 4 Computing– Autumn 2
'Digital Media (Capturing & Editing Images and Video)'

COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
DIGITAL MEDIA (Capturing & editing images and video) ANIMATION National Curriculum ▪ 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.	• I can begin to understand how images from different sources (stills, video, graphics, animation) are used to enhance a presentation or communicate an idea. • I understand the need for caution when using the internet to search for images and what to do if I find unsuitable images (See school's Acceptable Use Policy/E-Safety Policy). **Capturing Images& Video** • I can independently **take photographs,** taking into account the audience and/or purpose for the image. • I can independently **capture video**, taking into account the audience and/or purpose for the image. • I can discuss and evaluate the quality of my own and others' captured images and make decisions whether to keep, delete or change them. **PROJECT** **'The Thing That Moved'** (manipulating an object so that it looks like it moves by itself) **Using images and video for a purpose** **(V.IMPORTANT - To be considered along the capturing and editing process)** • I understand that planning is a vital part of the design process. • I can plan my animation, then use captured images to create a short animated sequence which communicates a specific idea. • I understand that evaluation and improvement are vital	**Capturing images & video** - Digital microsopes - Webcams (at top of computer screen) - cameras - digiblue **Editing Images & Video for a purpose** - Windows live photo gallery - j2spotlight (accessible through my.uso.im) *capture images with a webcam which can be edited and have sound added.* **J2E (my.uso.im)** You could publish the finished work onto our school blog for children and staff to comment on. **Fun Stuff** www.bomomo.com	**CURRICULUM LINKS** **ENGLISH** • Create a narrative for 'The Thing that Moved' project. • Create a story board for the story. **MATHS** • Describe the position of a picture. • Rotate image a given number of degrees. • Complete a simple symmetric figure with respect to a specific line of symmetry. **SCIENCE** • The story could link to 'skeletons'

| | parts of the design process and ICT allows changes to be made quickly and efficiently.

Editing Images and Video
- I can import music, stills or video into video editing software for a specific project.
Images
- I can use basic tools in a software package to change images to suit a particular purpose. (eg resizing/adding an effect).
Video
- I can arrange, trim and cut clips to create a short film that conveys meaning.
- I can add simple titles, credits and special effects, e.g., transitions. | | |

Year 4 Computing– Spring 1 (Week 1-2)
'Digital Research'

COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
Digital Research National Curriculum • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Using the Internet for Research** • I can use a range of child friendly search engines to locate different media, e.g., text, images, sounds or videos. • I can develop key questions and key words to search for specific information to answer a problem, e.g., a ques tion such as 'Where could we go on holiday?' would become a search for 'holiday destinations'. • I can use appropriate tools to save and retrieve accessed information, e.g., through the use of favourites, history, copy/paste and save as. **E-Safety** • I can begin to recognise that anyone can author on the internet and sometimes web content is inaccurate or even offensive. • I know that provision is made in schools to filter internet content, recognising this is possibly not the case on computers used at home. • I can begin understand the concept of copyright, e.g., what images, videos or sounds are legal and safe to use in their own work. • I am aware that copying text directly from websites or non-digital resources is equivalent to stealing other people's work (plagiarism). • I understand the need to ignore unwanted advertising or pop-ups as they can inadvertently introduce viruses or spyware onto a computer system.	**Child-friendly search engines** Talk about how google can produce sometimes irrelevant and inappropriate content. www.swiggle.org.uk www.kidrex.org *Have a specific topic/theme that the children need to research.* **Clicker6** Text can be imported and Clicker6 will read it. Key words can be identified and a dictionary feature is available.	**CURRICULUM LINKS** **ENGLISH** • Analysing different genres of writing. • Pupils could use their research to help them write persuasive arguments, reports or an information book. • Summarising information in their own words. **MATHS** • Reading and understanding data/mathematical language (where appropriate). • Rounding research results to the nearest 100 or 1000. **SCIENCE** • Research different habitats. **HISTORY** • Research crime and punishment through the ages. • Identify accurate information and reliable sources.

Year 4 Computing– Spring 1 (Week 3-6)
'Data Logging'

COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
Data Logging **National Curriculum** • 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	**Introduction to Data Logging** • I know that technology can be used to capture data. • I can give some examples of real-life situations where sensors are used. • I understand that data loggers can be used to sense external and physical changes and collect data. **Experiment/Project** • I can use a datalogger to capture information from a light, sound or temperature sensor. • I can import data from a logbox to a computer. • I can analyse data continuously over time, including sound, temperature and light.	**Logbox** Use the logbox unit to capture data. Upload data from the logbox onto the computer for analysis **IDEAS** *When is Year 4 loudest/quietest during the day?* *How does the temperature of the Year 4 classroom change throughout the day?* *What makes a good insulator?* *How long is it light for?* *How much light is in different areas of the school?*	**CURRICULUM LINKS** **ENGLISH** • Write a report based on the results of the data collected. • Write up the experiment. **MATHS** • Rounding data to the nearest 100 or 1000. • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. • Interpret and present discrete and continuous data using appropriate graphical methods, including barcharts and time graphs. **SCIENCE** • Taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions *You will need to think of an experiment that will make use of a light, temperature or sound sensor.*

Year 4 Computing– Spring 2
'Programming & Control'

NATIONAL CURRICULUM LINK	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
National Curriculum • 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	**Introduction to 'Programming & Control'** **Lesson 1** • I know that an 'algorithm' is a specific set of instructions used to control a function. • I can follow a simple algorithm. • I know that algorithms have to be accurate in order to work properly. **Lesson 2** • I know that my actions can move an object on screen. • I can program a sprite to move around a set course based on my predictions. • I can begin to understand how computers process commands. (look at text algorithm at side of screen). • I can 'debug' my programming to achieve a goal. **Lesson 3** **Experimenting with logo software and creating a 'logo language' glossary.** • I know that my actions can move an object on screen. • I can begin to understand how computers process commands. • I know that 'Logo' is a computer language. • I can control a turtle using coding language. **Lesson 4** **Modifying a ready-made logo code (Level 2).**	**Lesson 1** *Non-computer based.* *Experiment with giving/receiving instructions in order to successfully carry out a task.* **Lesson 2** **Chrome** • Go to my.uso.im > j2e.com • JiT • Turtle (select an adventure) **Lesson 3 +** • Go to my.uso.im > j2e.com • J2code • Logo (Level 2 then 3)	**CURRICULUM LINKS** **ENGLISH** • Accurately giving oral instructions, written instructions and understanding instructions. **MATHS** • Knowing that information can be held as numbers. • Solve one-step and two-step questions. • Accurately inputting numbers. • Identifying and using angles. • Describe movements between positions as translations. • Estimate and calculate different measures.

Polygons
- I understand that ***prediction, trial and error are important*** when controlling devices to achieve a specific outcome.

Creating given shapes
- I can program a turtle to achieve a specific outcome.
- I can design, write and debug programs that accomplish specific goals.

Lesson 5
- I understand the concept and advantages of using a REPEAT command (or LOOP)
- I can use REPEATS / LOOPS in appropriate places in algorithms.

Throughout
I can use logical reasoning to explain how some simple algorithms work.
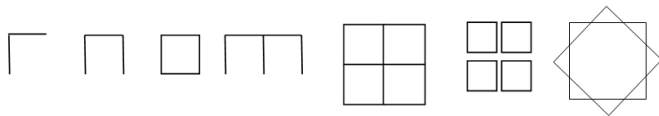
Year 4 Computing– Summer 1
'Simulations & Modelling'

NATIONAL CURRICULUM LINK	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
National Curriculum • use technology purposefully to create, organise, store, manipulate and retrieve digital content • select, use and combine a variety of software on a range of digital devices to design and create content that accomplish given goals, , including collecting, analysing, evaluating and presenting data and information • be discerning in evaluating digital content	**1-2 lessons – Simulations** • I understand how computer simulations can represent real or imaginary situations and how these can help in the wider world. • I can explore the effects of changing variables in models and simulations, asking 'What if?' questions. • I can make and test predictions. **Modelling/Spreadsheets** **1-2 sessions** • I can refer to specific cells by their column / row labels. (Cell refs) • I understand that there are different types of data, e.g: numeric, , date, alphanumeric, currency etc. • I understand that spreadsheets can automate functions, making it quicker to perform calculations • I can begin to understand how those formula are constructed. **2-3 sessions** • I understand that spreadsheets can automate functions, making it quicker to perform calculations	**BBC Science Clips** Choose experiments based on your Science unit. **Rising Stars Science Clips** Accessible through my.uso.im **MS Excel** Use ready-made spreadsheets to support the activities. (Saved on network)	**CURRICULUM LINKS** **ENGLISH** • Could be linked to Tom's adventure holiday in 'Cliffhanger' by Jaqueline Wilson. **MATHS** • Rounding data to the nearest 100 or 1000. • Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs • Convert between different units of measure. • Identify and represent numbers using different representations. • Recognises the place value of each digit. **SCIENCE** • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.

Year 4 Computing– Summer 2
'Communication & Collaboration'

COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
Communication & Collaboration National Curriculum • 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	**Recap E-Safety** • I understand the need to keep personal information and passwords private in order to protect myself when communicating online. • I know how to respond if asked for personal details or in the event of receiving unpleasant communications. • I recognise that cyber bullying is unacceptable and will be sanctioned. • I know how to report an incident of cyber bullying. *The following objectives will be developed for 2015-2016 due to children being already introduced to the school blog last year.* **Blogging (1-2 lessons)** • I understand that messages can quickly be sent electronically over distances and that people can reply to them. • I know what a 'blog' is. • I can make purposeful contributions to a blog. • I can make purposeful comments on a blog.	**MUST USE CHROME** **J2Webby (Blogging)** **(accessible through my.uso.im)** Children 'upload their work to the school blog for others to look at and give feedback (verbal feedback will do) • You will need to teach them how click on the J2Webby button when they have finished to send it to a moderation area. • A teacher must moderate each piece of work in the moderation area before publishing. (in J2Launch). **JiT/J2E5 (Accessible through my.uso.im** Use these programs for creating work that can be published to the school blog. Encourage classes to collaborate so they can comment on eachother's blogs. *Teachers must keep on top of moderating blog posts and comments so that the children do not lose interest.*	**CURRICULUM LINKS** ==ENGLISH== *Blogging is great for promoting writing.* Use the school blog to publish stories, poems, written arguments, debates, speeches etc. ==MATHS== • Creating maths problems for peers to solve. **SCIENCE** • Discussing/providing facts about living things and their habitats. ==HISTORY==/==GEOGRAPHY== Sharing research and information about the topics covered.