

Year 4 Computing Curriculum Overview

YEAR 4	Text & Multimedia	Digital Media <i>(Graphics & Sound)</i>	Digital Research	Data Logging	Programming & Control	Simulations & Modelling	Communication & Collaboration
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Please see below for medium term plans

				<i>of audience.</i>
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Year 4 Computing- Autumn21
'Digital Media (Capturing & Editing Images and Video)'

TERM	COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
AUTUMN 2	<p>DIGITAL MEDIA (Capturing & editing images and video)</p> <p>ANIMATION</p>	<ul style="list-style-type: none"> 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). <p><u>Capturing Images& Video</u></p> <ul style="list-style-type: none"> 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. <p><u>PROJECT</u> 'The Thing That Moved' (manipulating an object so that it looks like it moves by itself)</p> <p><u>Using images and video for a purpose</u> (V.IMPORTANT - To be considered along the capturing and editing process)</p> <ul style="list-style-type: none"> 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 parts of the design process and ICT allows changes to be made quickly and efficiently. 	<p><u>Capturing images & video</u></p> <ul style="list-style-type: none"> Digital microscopes Webcams (at top of computer screen) cameras digiblue <p><u>Editing Images & Video for a purpose</u></p> <ul style="list-style-type: none"> Windows live photo gallery j2spotlight (accessible through my.uso.im) <p><i>capture images with a webcam which can be edited and have sound added.</i></p> <p><u>J2E (my.uso.im)</u> You could publish the finished work onto our school blog for children and staff to comment on.</p> <p><u>Fun Stuff</u> www.bomomo.com</p>	<p><i>Ensure sound is working on the computers.</i> <i>Children can use headphones.</i></p> <p><i>Check where the children will be saving their work to. (staffpupil/year4)</i></p>

		<p><u>Editing Images and Video</u></p> <ul style="list-style-type: none">• I can import music, stills or video into video editing software for a specific project. <p>Images</p> <ul style="list-style-type: none">• I can use basic tools in a software package to change images to suit a particular purpose. (eg resizing/adding an effect). <p>Video</p> <ul style="list-style-type: none">• 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.		
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Year 4 Computing- Spring 1 (Week 1-2)
'Digital Research'

TERM	COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
<p>Spring 1 (2 weeks)</p>	<p><u>National Curriculum</u></p>	<p><u>Using the Internet for Research</u></p> <ul style="list-style-type: none"> • 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 question 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. <p><u>E-Safety</u></p> <ul style="list-style-type: none"> • 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. 	<p><u>Child-friendly search engines</u></p> <p>Talk about how google can produce sometimes irrelevant and inappropriate content.</p> <p>www.swiggle.org.uk www.kidrex.org</p>	<p><i>*Have a specific topic/theme that the children need to research.</i></p>

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

TERM	COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
<p>Spring 1 (4 weeks)</p>	<p><u>National Curriculum</u> 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</p>	<p><u>Introduction to Data Logging</u></p> <ul style="list-style-type: none"> • 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. <p><u>Experiment/Project</u></p> <ul style="list-style-type: none"> • 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. 	<p><u>Logbox&DataDiskPT software</u> Lesson 1 Analyse data from examples already in the program. 'open' a sample of data that you could ask the children questions about eg. <i>What was the sound level at 5am?</i></p> <p><u>Lesson 2,3 & 4</u> Use the logbox unit to capture data. Upload data from the logbox onto the computer for analysis</p>	<p><i>You will need to think of an experiment that will make use of a light, temperature or sound sensor.</i></p> <p><u>Ideas</u> <i>When is Year 4 loudest/quietest during the day?</i> <i>How does the temperature of the Year 4 classroom change throughout the day?</i> <i>What makes a good insulator?</i> <i>How long is it light for?</i> <i>How much light is in different areas of the school?</i> <i>Where is the warmest/coldest place of the school?</i></p> <p><i>*Cross Curricular Links with Maths and Science.</i></p>

**Year 4 Computing- Spring 2
'Programming & Control'**

TERM	NATIONAL CURRICULUM LINK	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
<p>SPRING 2</p>	<p><u>National Curriculum</u></p> <ul style="list-style-type: none"> • 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 	<p>Simplified for 2014/2015 due to no prior knowledge of programming.</p> <p><u>Introduction to 'Programming & Control'</u></p> <p><u>Lesson 1</u></p> <ul style="list-style-type: none"> • 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. <p><u>Lesson 2</u></p> <ul style="list-style-type: none"> • 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. <p><u>Lesson 3</u></p> <p>Experimenting with logo software and creating a 'logo language' glossary.</p> <ul style="list-style-type: none"> • I know that my actions can move an object on screen. • I can begin to understand how computers process commands. 	<p>Teachers - You will need to spend some time learning how to manipulate the software yourself before teaching the lessons.</p> <p><u>Lesson 1</u> <i>Non-computer based.</i> <i>Experiment with giving/receiving instructions in order to successfully carry out a task.</i></p> <p><u>Lesson 2</u> Chrome</p> <ul style="list-style-type: none"> ➤ Go to my.uso.im > j2e.com ➤ JIT ➤ Turtle (select an adventure) <p><u>Lesson 3 +</u></p> <ul style="list-style-type: none"> ➤ Go to my.uso.im > j2e.com ➤ J2code ➤ Logo (Level 2 then 3) 	

- 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).

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.

Click on 'Examples'...Polygons to load the example to analyse.



Lesson 5

See planning help sheet.

Year 4 Computing- Summer 2
'Communication & Collaboration'

TERM	COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
<p>Summer 2</p>	<p><u>Communication & Collaboration</u> <u>National Curriculum</u></p> <ul style="list-style-type: none"> 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. 	<p><u>Recap E-Safety</u></p> <ul style="list-style-type: none"> 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. <p><i>The following objectives will be developed for 2015-2016 due to children being already introduced to the school blog last year.</i></p> <p><u>Blogging (1-2 lessons)</u></p> <ul style="list-style-type: none"> 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. 	<p><u>MUST USE CHROME</u></p> <p><u>J2Webby (Blogging)</u> (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)</p> <ul style="list-style-type: none"> 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). <p><u>JiT/J2E5 (Accessible through my.uso.im)</u> 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.</p>	<p><i>Teachers must keep on top of moderating blog posts and comments so that the children do not lose interest.</i></p> <p><i>Have a think about what the children could create a blog about. Eg. poetry, a debate, book reviews.</i></p> <p><i>Really motivating for promoting writing – could link to Literacy.</i></p>