

## Year 4 Computing Curriculum Overview

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

**Year 4 Computing- Autumn 1  
'Text & Multimedia'**

TERM	COMPUTING ELEMENT	SKILLS	SOFTWARE TOOLS	CROSS-CURRICULAR LINKS/NOTES
<b>AUTUMN 1</b>	<b>Multimedia &amp; Word Processing</b>	<ul style="list-style-type: none"> <li>• I can evaluate a range of electronic multimedia, appropriate to task e.g website, photostory, leaflet, and recognise key features of layout and design</li> <li>• With support, I can plan the structure and layout of document/ presentation.</li> <li>• 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).</li> <li>• I can select and import sounds (eg own recording, sound effects bank created by teacher and video/ visual effects into a multimedia presentation).</li> <li>• Through peer assessment and self evaluation, I can evaluate work both during and after completion, and make suitable improvements.</li> <li>• I can create for a particular audience.</li> </ul> <p><b>When word processing children should:</b></p> <ul style="list-style-type: none"> <li>• I can choose freely from a range of text styles, to suit a particular audience.</li> <li>• I can hold two hands over different halves of the keyboard</li> <li>• I can use more than two fingers to enter text.</li> <li>• I can Use appropriate editing tools to ensure their work is clear and error free, e.g., spell checker, thesaurus, find and replace.</li> </ul>	<p><b>Multimedia Packages:</b>  <b>Powerpoint</b></p> <ul style="list-style-type: none"> <li>- Create slides and add pictures, text, WordArt, Video.</li> </ul> <p><b>Word processing Packages:</b></p> <ul style="list-style-type: none"> <li>- Microsoft Word</li> </ul> <p><b>Microsoft Photostory</b>(as whole class)</p> <ul style="list-style-type: none"> <li>- Combines photos into a slideshow and allows sound, voice commentary and titles to be added.</li> </ul> <p><b>Touch Typing Course:</b></p> <ul style="list-style-type: none"> <li>- BBC Dance Mat Typing (<a href="http://www.bbc.co.uk/schools/typing">www.bbc.co.uk/schools/typing</a>)</li> <li>- 2type</li> </ul> <p><b>Teachers Resources:</b>            LGFL Audio Network (bank of sounds).</p>	<p><b>E-SAFETY</b></p> <p style="text-align: right;"><i>Plan, design and create and improve their own multimedia presentation showing awareness</i></p>

				<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><b>DIGITAL MEDIA</b>  <b>(Capturing &amp; editing images and video)</b></p> <p><b>ANIMATION</b></p>	<ul style="list-style-type: none"> <li>I can begin to understand how images from different sources (stills, video, graphics, animation) are used to enhance a presentation or communicate an idea.</li> <li>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).</li> </ul> <p><b>Capturing Images&amp; Video</b></p> <ul style="list-style-type: none"> <li>I can independently <b>take photographs</b>, taking into account the audience and/or purpose for the image.</li> <li>I can independently <b>capture video</b>, taking into account the audience and/or purpose for the image.</li> <li>I can discuss and evaluate the quality of my own and others' captured images and make decisions whether to keep, delete or change them.</li> </ul> <p><b>PROJECT</b>  <b>'The Thing That Moved'</b>          (manipulating an object so that it looks like it moves by itself)</p> <p><b>Using images and video for a purpose</b>  <b>(V.IMPORTANT - To be considered along the capturing and editing process)</b></p> <ul style="list-style-type: none"> <li>I understand that planning is a vital part of the design process.</li> <li>I can plan my animation,then use captured images to create a short animated sequence which communicates a specific idea.</li> <li>I understand that evaluation and improvement are vital parts of the design process and ICT allows changes to be made quickly and efficiently.</li> </ul>	<p><b>Capturing images &amp; video</b></p> <ul style="list-style-type: none"> <li>Digital microscopes</li> <li>Webcams (at top of computer screen)</li> <li>cameras</li> <li>digiblue</li> </ul> <p><b>Editing Images &amp; Video for a purpose</b></p> <ul style="list-style-type: none"> <li>Windows live photo gallery</li> <li>j2spotlight (accessible through my.uso.im)</li> </ul> <p><i>capture images with a webcam which can be edited and have sound added.</i></p> <p><b>J2E (my.uso.im)</b>          You could publish the finished work onto our school blog for children and staff to comment on.</p> <p><b>Fun Stuff</b>  <a href="http://www.bomomo.com">www.bomomo.com</a></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><b><u>Editing Images and Video</u></b></p> <ul style="list-style-type: none"><li>• I can import music, stills or video into video editing software for a specific project.</li></ul> <p><b>Images</b></p> <ul style="list-style-type: none"><li>• I can use basic tools in a software package to change images to suit a particular purpose. (eg resizing/adding an effect).</li></ul> <p><b>Video</b></p> <ul style="list-style-type: none"><li>• I can arrange, trim and cut clips to create a short film that conveys meaning.</li><li>• I can add simple titles, credits and special effects, e.g., transitions.</li></ul>		
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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><b>Spring 1</b>  <b>(2 weeks)</b></p>	<p><b><u>National Curriculum</u></b></p>	<p><b><u>Using the Internet for Research</u></b></p> <ul style="list-style-type: none"> <li>• I can use a range of child friendly search engines to locate different media, e.g., text, images, sounds or videos.</li> <li>• 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'.</li> <li>• I can use appropriate tools to save and retrieve accessed information, e.g., through the use of favourites, history, copy/paste and save as.</li> </ul> <p><b><u>E-Safety</u></b></p> <ul style="list-style-type: none"> <li>• I can begin to recognise that anyone can author on the internet and sometimes web content is inaccurate or even offensive.</li> <li>• I know that provision is made in schools to filter internet content, recognising this is possibly not the case on computers used at home.</li> <li>• 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.</li> <li>• I am aware that copying text directly from websites or non-digital resources is equivalent to stealing other people's work (plagiarism).</li> <li>• I understand the need to ignore unwanted advertising or pop-ups as they can inadvertently introduce viruses or spyware onto a computer system.</li> </ul>	<p><b><u>Child-friendly search engines</u></b></p> <p>Talk about how google can produce sometimes irrelevant and inappropriate content.</p> <p><a href="http://www.swiggle.org.uk">www.swiggle.org.uk</a> <a href="http://www.kidrex.org">www.kidrex.org</a></p>	<p><b><i>*Have a specific topic/theme that the children need to research.</i></b></p>

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

TERM	COMPUTING ELEMENT	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
<p><b>Spring 1</b> <b>(4 weeks)</b></p>	<p><b><u>National Curriculum</u></b> 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><b><u>Introduction to Data Logging</u></b></p> <ul style="list-style-type: none"> <li>• I know that technology can be used to capture data.</li> <li>• I can give some examples of real-life situations where sensors are used.</li> <li>• I understand that data loggers can be used to sense external and physical changes and collect data.</li> </ul> <p><b><u>Experiment/Project</u></b></p> <ul style="list-style-type: none"> <li>• I can use a datalogger to capture information from a light, sound or temperature sensor.</li> <li>• I can import data from a logbox to a computer.</li> <li>• I can analyse data continuously over time, including sound, temperature and light.</li> </ul>	<p><b><u>Logbox&amp;DataDiskPT software</u></b> <b>Lesson 1</b> 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> <b>Lesson 2,3 &amp; 4</b> Use the logbox unit to capture data. Upload data from the logbox onto the computer for analysis</p>	<p><b><i>You will need to think of an experiment that will make use of a light, temperature or sound sensor.</i></b></p> <p><b><u>Ideas</u></b> <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><b><i>*Cross Curricular Links with Maths and Science.</i></b></p>

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

TERM	NATIONAL CURRICULUM LINK	LEARNING OBJECTIVES/SKILLS	HARDWARE/SOFTWARE	CROSS-CURRICULAR LINKS/NOTES
<p><b>SPRING 2</b></p>	<p><b><u>National Curriculum</u></b></p> <ul style="list-style-type: none"> <li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> </ul>	<p><b>Simplified for 2014/2015 due to no prior knowledge of programming.</b></p> <p><b><u>Introduction to 'Programming &amp; Control'</u></b></p> <p><b><u>Lesson 1</u></b></p> <ul style="list-style-type: none"> <li>• I know that an 'algorithm' is a specific set of instructions used to control a function.</li> <li>• I can follow a simple algorithm.</li> <li>• I know that algorithms have to be accurate in order to work properly.</li> </ul> <p><b><u>Lesson 2</u></b></p> <ul style="list-style-type: none"> <li>• I know that my actions can move an object on screen.</li> <li>• I can program a sprite to move around a set course based on my predictions.</li> <li>• I can begin to understand how computers process commands. (look at text algorithm at side of screen).</li> <li>• I can 'debug' my programming to achieve a goal.</li> </ul> <p><b><u>Lesson 3</u></b></p> <p><b>Experimenting with logo software and creating a 'logo language' glossary.</b></p> <ul style="list-style-type: none"> <li>• I know that my actions can move an object on screen.</li> <li>• I can begin to understand how computers process commands.</li> </ul>	<p><b>Teachers</b> - You will need to spend some time learning how to manipulate the software yourself before teaching the lessons.</p> <p><b><u>Lesson 1</u></b> <i>Non-computer based.</i> <i>Experiment with giving/receiving instructions in order to successfully carry out a task.</i></p> <p><b><u>Lesson 2</u></b> <b>Chrome</b></p> <ul style="list-style-type: none"> <li>➤ Go to my.uso.im &gt; j2e.com</li> <li>➤ JIT</li> <li>➤ Turtle (select an adventure)</li> </ul> <p><b><u>Lesson 3 +</u></b></p> <ul style="list-style-type: none"> <li>➤ Go to my.uso.im &gt; j2e.com</li> <li>➤ J2code</li> <li>➤ Logo (Level 2 then 3)</li> </ul>	



- 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><b>Summer 2</b></p>	<p><b><u>Communication &amp; Collaboration National Curriculum</u></b></p> <ul style="list-style-type: none"> <li>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.</li> <li>use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<p><b><u>Recap E-Safety</u></b></p> <ul style="list-style-type: none"> <li>I understand the need to keep personal information and passwords private in order to protect myself when communicating online.</li> <li>I know how to respond if asked for personal details or in the event of receiving unpleasant communications.</li> <li>I recognise that cyber bullying is unacceptable and will be sanctioned.</li> <li>I know how to report an incident of cyber bullying.</li> </ul> <p><b><i>The following objectives will be developed for 2015-2016 due to children being already introduced to the school blog last year.</i></b></p> <p><b><u>Blogging (1-2 lessons)</u></b></p> <ul style="list-style-type: none"> <li>I understand that messages can quickly be sent electronically over distances and that people can reply to them.</li> <li>I know what a 'blog' is.</li> <li>I can make purposeful contributions to a blog.</li> <li>I can make purposeful comments on a blog.</li> </ul>	<p><b><u>MUST USE CHROME</u></b></p> <p><b><u>J2Webby (Blogging) (accessible through my.uso.im)</u></b> 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"> <li>You will need to teach them how click on the J2Webby button when they have finished to send it to a moderation area.</li> <li>A teacher must moderate each piece of work in the moderation area before publishing. (in J2Launch).</li> </ul> <p><b><u>JiT/J2E5 (Accessible through my.uso.im)</u></b> 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>