

Medium Term Plan - Year 4 – Computing

HT1 – Computing Systems and Networks – The Internet (ppt)	
Recall	What is... Input Device Output Device Network Server
End Point (National Curriculum Statements)	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.
Prior Learning	Y3 HT1
Sequence of Learning / Contextual Knowledge (Lesson ideas) Disciplinary Knowledge	I can describe how networks physically connect to other networks. I can recognise how networked devices make up the internet. I can outline how websites can be shared via the World Wide Web. I can describe how content can be added and accessed on the World Wide Web. I can recognise how the content of the WWW is created by people. I can evaluate the consequences of unreliable content. " -I can demonstrate how information is shared across the internet - I can describe the internet as a network of networks - I can discuss why a network needs protecting" " -I can describe networked devices and how they connect - I can explain that the internet is used to provide many services - I can recognise that the World Wide Web contains websites and web pages" " -I can describe how to access websites on the WWW - I can describe where websites are stored when uploaded to the WWW - I can explain the types of media that can be shared on the WWW" " -I can explain that internet services can be used to create content online - I can explain what media can be found on websites - I can recognise that I can add content to the WWW"

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	<ul style="list-style-type: none"> " -I can explain that there are rules to protect content - I can explain that websites and their content are created by people - I can suggest who owns the content on websites " " -I can explain that not everything on the World Wide Web is true - I can explain why I need to think carefully before I share or reshare content - I can explain why some information I find online may not be honest, accurate, or legal"
Next steps	Y5 HT1
Key Vocabulary	Keywords World Wide Web websites internet e-safety
Teacher Assessment	
Possible Misconceptions	
Class Teacher Notes	

HT2 & HT3 – Creating Media – HT2 – Audio Editing - HT3 Photo Editing	
Recall	What is the difference between text and images What is... Animation Stop Motion Stop Frame Onion Skin
End Point	Ensure pupils are responsible, competent, confident and creative users of information and communication technology.

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(National Curriculum Statements)	
Prior Learning	Y3 HT2
<p>Sequence of Learning / Contextual Knowledge</p> <p>(Lesson ideas)</p> <p>Disciplinary Knowledge</p>	<p><u>Audio Editing</u></p> <p>I can identify that sound can be digitally recorded.</p> <p>I can use a digital device to record sound.</p> <p>I can explain that a digital recording is stored as a file.</p> <p>I can explain that audio can be changed through editing.</p> <p>I can show that different types of audio can be combined and played together.</p> <p>I can evaluate editing choices made.</p> <p><u>Photo Editing</u></p> <p>I can explain that digital images can be changed.</p> <p>I can change the composition of an image.</p> <p>I can describe how images can be changed for different uses.</p> <p>I can make good choices when selecting different tools.</p> <p>I can recognise that not all images are real.</p> <p>I can evaluate how changes can improve an image.</p> <p>" -I can explain that the person who records the sound can say who is allowed to use it</p> <p>- I can identify the input and output devices used to record and play sound</p> <p>- I can use a computer to record audio"</p> <p>" -I can discuss what sounds can be added to a podcast</p> <p>- I can inspect the soundwave view to know where to trim my recording</p> <p>- I can re-record my voice to improve my recording"</p> <p>" -I can explain how sounds can be combined to make a podcast more engaging</p> <p>- I can plan appropriate content for a podcast</p> <p>- I can save my project so the different parts remain editable"</p> <p>" -I can improve my voice recordings</p> <p>- I can record content following my plan</p> <p>- I can review the quality of my recordings"</p> <p>" -I can arrange multiple sounds to create the effect I want</p> <p>- I can explain the difference between saving a project and exporting an audio file</p>

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	<ul style="list-style-type: none"> - I can open my project to continue working on it" " -I can choose appropriate edits to improve my podcast - I can listen to an audio recording to identify its strengths - I can suggest improvements to an audio recording" " -I can explain why I might crop an image - I can improve an image by rotating it - I can use photo editing software to crop an image" " -I can experiment with different colour effects - I can explain that different colour effects make you think and feel different things - I can explain why I chose certain colour effects" " -I can add to the composition of an image by cloning - I can identify how a photo edit can be improved - I can remove parts of an image using cloning" " -I can experiment with tools to select and copy part of an image - I can explain why photos might be edited - I can use a range of tools to copy between images" " -I can choose suitable images for my project - I can create a project that is a combination of other images - I can describe the image I want to create" " -I can combine text and my image to complete the project - I can review images against a given criteria - I can use feedback to guide making changes"
Next Steps	<u>Y5 HT2</u>
Key Vocabulary	Content Websites Links Chrome Music Lab/Audacity

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Teacher Assessment	
Possible Misconceptions	
Class Teacher Notes	

HT4 – Data and information – Data Logging (Arduino Science Journal App)	
Recall	<p>What is...</p> <p>Branch</p> <p>Structure</p> <p>Comparison</p>
End Point (National Curriculum Statements)	use technology purposefully to create, organise, store, manipulate and retrieve digital content
Prior Learning	Y3 HT4
<p>Sequence of Learning / Contextual Knowledge</p> <p>(Lesson ideas)</p> <p>Disciplinary Knowledge</p>	<p>I can explain that data gathered over time can be used to answer questions.</p> <p>I can use a digital device to collect data automatically.</p> <p>I can explain that a data logger collects ‘data points’ from sensors over time.</p> <p>I can use data collected over a long duration to find information.</p> <p>I can identify the data needed to answer questions.</p> <p>I can use collected data to answer questions.</p> <p>” -I can choose a data set to answer a given question</p> <p>- I can identify data that can be gathered over time</p> <p>- I can suggest questions that can be answered using a given data set”</p> <p>” -I can explain what data can be collected using sensors</p> <p>- I can identify that data from sensors can be recorded</p> <p>- I can use data from a sensor to answer a given question”</p>

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	<ul style="list-style-type: none"> " -I can identify the intervals used to collect data - I can recognise that a data logger collects data at given points - I can talk about the data that I have captured" " -I can explain that there are different ways to view data - I can sort data to find information - I can view data at different levels of detail" " -I can plan how to collect data using a data logger - I can propose a question that can be answered using logged data - I can use a data logger to collect data" " -I can draw conclusions from the data that I have collected - I can explain the benefits of using a data logger - I can interpret data that has been collected using a data logger"
Next Steps	Y5 HT4
Key Vocabulary	Keywords Sensors Data log Duration
Teacher Assessment	
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HT5 & 6 – Programming HT5 Repetition in Shapes (Turtle Academy) HT6 Repetition in Games (Scratch)	
Recall	Commands Sequence Order Sprite Algorithm

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<p>End Point (National Curriculum Statements)</p>	<p>understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p>
<p>Prior Learning</p>	<p><u>Y3 HT5</u></p>
<p>Sequence of Learning / Contextual Knowledge (Lesson ideas) Disciplinary Knowledge</p>	<p><u>Repetition in Shapes</u> I can identify that accuracy in programming is important. I can create a program in a text-based language. I can explain what ‘repeat’ means. I can modify a count-controlled loop to produce a given outcome. I can decompose a program into parts. I can create a program that uses count-controlled loops to produce a given outcome.</p> <p><u>Repetition in Games</u> I can develop the use of count-controlled loops in a different programming environment. I can explain that in programming there are infinite loops and count-controlled loops. I can develop a design that includes two or more loops which run at the same time. I can modify an infinite loop in a given program. I can design a project that includes repetition. I can create a project that includes repetition.</p> <p>" -I can create a code snippet for a given purpose - I can explain the effect of changing a value of a command - I can program a computer by typing commands" " -I can test my algorithm in a text-based language - I can use a template to create a design for my program - I can write an algorithm to produce a given outcome" " -I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves - I can identify patterns in a sequence - I can use a count-controlled loop to produce a given outcome" " -I can choose which values to change in a loop</p>

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	<ul style="list-style-type: none"> - I can identify the effect of changing the number of times a task is repeated - I can predict the outcome of a program containing a count-controlled loop" " -I can explain that a computer can repeatedly call a procedure - I can identify 'chunks' of actions in the real world - I can use a procedure in a program" " -I can design a program that includes count-controlled loops - I can develop my program by debugging it - I can make use of my design to write a program" " -I can list an everyday task as a set of instructions including repetition - I can modify a snippet of code to create a given outcome - I can predict the outcome of a snippet of code" " -I can choose when to use a count-controlled and an infinite loop - I can modify loops to produce a given outcome - I can recognise that some programming languages enable more than one process to be run at once" " -I can choose which action will be repeated for each object - I can evaluate the effectiveness of the repeated sequences used in my program - I can explain what the outcome of the repeated action should be" " -I can explain the effect of my changes - I can identify which parts of a loop can be changed - I can re-use existing code snippets on new sprites" " -I can develop my own design explaining what my project will do - I can evaluate the use of repetition in a project - I can select key parts of a given project to use in my own design" " -I can build a program that follows my design - I can evaluate the steps I followed when building my project - I can refine the algorithm in my design"
Next Steps	Y5 HT5
Key Vocabulary	Commands

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	Sequence Order Sprite Algorithm
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