Medium Term Plan - Year 5 – Computing

| HT1 – Computing Systems and Networks – Sharing information (Google Slides) | |
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| Recall | What is technology, what is not technology<br>What is a keyboard, mouse etc.<br>Keywords<br>World Wide Web<br>websites<br>internet<br>e-safety |
| End Point<br><br>(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 | Y4 HT1 |
| Sequence of Learning / Contextual Knowledge<br><br>(Lesson ideas)<br>**Disciplinary Knowledge** | I can explain that computers can be connected together to form systems.<br>I can recognise the role of computer systems in our lives.<br>I can recognise how information is transferred over the internet.<br>I can explain how sharing information online lets people in different places work together.<br>**I can contribute to a shared project online.**<br>I can evaluate different ways of working together online.<br><br>" -I can describe that a computer system features inputs, processes, and outputs<br>- I can explain that computer systems communicate with other devices<br>- I can explain that systems are built using a number of parts"<br>" -I can explain the benefits of a given computer system<br>- I can identify tasks that are managed by computer systems<br>- I can identify the human elements of a computer system"<br>" -I can compare results from different search engines<br>- I can make use of a web search to find specific information<br>- I can refine my web search"<br>" -I can explain why we need tools to find things online |

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| | - I can recognise the role of web crawlers in creating an index<br>- I can relate a search term to the search engine's index"<br>" -I can explain that a search engine follows rules to rank results<br>- I can give examples of criteria used by search engines to rank results<br>- I can order a list by rank"<br>" -I can describe some of the ways that search results can be influenced<br>- I can explain how search engines make money<br>- I can recognise some of the limitations of search engines" |
| Next Steps | Y6 HT1 |
| Key Vocabulary | System<br>Connection<br>Digital<br>Input<br>Process<br>output |
| Teacher Assessment | |
| Possible Misconceptions | |
| Class Teacher Notes | |

| HT2 & HT3 – Creating Media – HT2 – Vector Drawing - HT3 Video Editing | |
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| Recall | What is the difference between text and images<br>What is...<br>Content |

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| | Websites<br>Links |
| End Point<br><br>(National Curriculum Statements) | Ensure pupils are responsible, competent, confident and creative users of information and communication technology. |
| Prior learning | Y4 HT2 |
| Sequence of Learning / Contextual Knowledge<br><br>(Lesson ideas)<br>**Disciplinary Knowledge** | Vector Drawing<br>I can identify that drawing tools can be used to produce different outcomes.<br>I can create a vector drawing by combining shapes.<br>**I can use tools to achieve a desired effect.**<br>I can recognise that vector drawings consist of layers.<br>I can group objects to make them easier to work with.<br>I can evaluate my vector drawings.<br><br>Video Editing<br>I can recognise video as moving pictures, which can include audio.<br>I can identify digital devices that can record video.<br>I can capture video using a digital device.<br>I can recognise the features of an effective video.<br>I can identify that video can be improved through reshooting and editing.<br>**I can consider the impact of the choices made when making and sharing a video.**<br><br>" -I can discuss how vector drawings are different from paper-based drawings<br>- I can experiment with the shape and line tools<br>- I can recognise that vector drawings are made using shapes"<br>" -I can explain that each element added to a vector drawing is an object<br>- I can identify the shapes used to make a vector drawing<br>- I can move, resize, and rotate objects I have duplicated"<br>" -I can explain how alignment grids and resize handles can be used to improve consistency<br>- I can modify objects to create a new image<br>- I can use the zoom tool to help me add detail to my drawings" |

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| | " -I can change the order of layers in a vector drawing<br>- I can identify that each added object creates a new layer in the drawing<br>- I can use layering to create an image"<br>" -I can copy part of a drawing by duplicating several objects<br>- I can recognise when I need to group and ungroup objects<br>- I can reuse a group of objects to further develop my vector drawing"<br>" -I can compare vector drawings to freehand paint drawings<br>- I can create a vector drawing for a specific purpose<br>- I can reflect on the skills I have used and why I have used them"<br><br><br>" -I can compare features in different videos<br>- I can explain that video is a visual media format<br>- I can identify features of videos"<br>" -I can experiment with different camera angles<br>- I can identify and find features on a digital video recording device<br>- I can make use of a microphone"<br>" -I can capture video using a range of filming techniques<br>- I can review how effective my video is<br>- I can suggest filming techniques for a given purpose"<br>" -I can create and save video content<br>- I can decide which filming techniques I will use<br>- I can outline the scenes of my video"<br>" -I can explain how to improve a video by reshooting and editing<br>- I can select the correct tools to make edits to my video<br>- I can store, retrieve, and export my recording to a computer"<br>" -I can evaluate my video and share my opinions<br>- I can make edits to my video and improve the final outcome<br>- I can recognise that my choices when making a video will impact on the quality of the final outcome" |
| Next Steps | Y6 HT2 |

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| Key Vocabulary | Copy<br>Paste<br>Undo<br>Rotate<br>Expand and shrink |
| Teacher Assessment | |
| Possible Misconceptions | |
| Class Teacher Notes | |

| HT4 – Data and information – Flat file Databases | |
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| Recall | What is…<br>Sensors<br>Data log<br>Duration |
| End Point<br><br>(National Curriculum Statements) | use technology purposefully to create, organise, store, manipulate and retrieve digital content |
| Prior learning | Y4 HT4 |
| Sequence of Learning / Contextual Knowledge<br><br>(Lesson ideas)<br>**Disciplinary Knowledge** | I can use a form to record information.<br>I can compare paper and computer-based databases.<br>I can outline how grouping and then sorting data allows us to answer questions.<br>I can explain that tools can be used to select specific data.<br>I can explain that computer programs can be used to compare data visually.<br>**I can apply my knowledge of a database to ask and answer real-world questions.** |

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| | " -I can create a database using cards<br>- I can explain how information can be recorded<br>- I can order, sort, and group my data cards"<br>" -I can choose which field to sort data by to answer a given question<br>- I can explain what a field and a record is in a database<br>- I can navigate a flat-file database to compare different views of information"<br>" -I can combine grouping and sorting to answer specific questions<br>- I can explain that data can be grouped using chosen values<br>- I can group information using a database"<br>" -I can choose multiple criteria to answer a given question<br>- I can choose which field and value are required to answer a given question<br>- I can outline how 'AND' and 'OR' can be used to refine data selection"<br>" -I can explain the benefits of using a computer to create charts<br>- I can refine a chart by selecting a particular filter<br>- I can select an appropriate chart to visually compare data"<br>" -I can ask questions that will need more than one field to answer<br>- I can present my findings to a group<br>- I can refine a search in a real-world context " |
| Next Steps | Y6 HT4 |
| Key Vocabulary | Keywords<br>Data<br>Form<br>Filter |
| Teacher Assessment | |
| Possible Misconceptions | |
| Class Teacher Notes | |

| HT5 & 6 – Programming HT5 Selection in Physical Computing (hour of code) HT6 Selection in quizzes (Scratch) | |
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| Recall | What is a sequence<br>What is a 'sprite?<br>What is..<br>Commands<br>Sequence<br>Order<br>Sprite<br>Algorithm |
| End Point<br><br>(National Curriculum Statements) | understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions |
| Prior Learning | Y4 HT5 |
| Sequence of Learning / Contextual Knowledge<br><br>(Lesson ideas)<br>**Disciplinary Knowledge** | Selection of Physical Computing<br>I can control a simple circuit connected to a computer.<br>I can write a program that includes count-controlled loops.<br>I can explain that a loop can stop when a condition is met, e.g. number of times.<br>I can conclude that a loop can be used to repeatedly check whether a condition has been met.<br>I can design a physical project includes selection.<br>**I can create a controllable system that includes selection.**<br><br>Selection in Quizzes<br>I can explain how selection is used in computer programs.<br>I can relate that a conditional statement connects a condition to an outcome.<br>I can explain how selection directs the flow of a program.<br>**I can create a program which uses selection.**<br>**I can design a program which uses selection I can evaluate my program.** |

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| | " -I can create a simple circuit and connect it to a microcontroller<br>- I can explain what an infinite loop does<br>- I can program a microcontroller to make an LED switch on"<br>" -I can connect more than one output component to a microcontroller<br>- I can design sequences that use count-controlled loops<br>- I can use a count-controlled loop to control outputs"<br>" -I can design a conditional loop<br>- I can explain that a condition is either true or false<br>- I can program a microcontroller to respond to an input"<br>" -I can explain that a condition being met can start an action<br>- I can identify a condition and an action in my project<br>- I can use selection (an 'if…then…' statement) to direct the flow of a program"<br>" -I can create a detailed drawing of my project<br>- I can describe what my project will do<br>- I can identify a real-world example of a condition starting an action"<br>" -I can test and debug my project<br>- I can use selection to produce an intended outcome<br>- I can write an algorithm that describes what my model will do"<br><br>" -I can identify conditions in a program<br>- I can modify a condition in a program<br>- I can recall how conditions are used in selection"<br>" -I can create a program with different outcomes using selection<br>- I can identify the condition and outcomes in an 'if… then… else…' statement<br>- I can use selection in an infinite loop to check a condition"<br>" -I can design the flow of a program which contains 'if… then… else…'<br>- I can explain that program flow can branch according to a condition<br>- I can show that a condition can direct program flow in one of two ways"<br>" -I can identify the outcome of user input in an algorithm<br>- I can outline a given task<br>- I can use a design format to outline my project" |

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| | " -I can implement my algorithm to create the first section of my program<br>- I can share my program with others<br>- I can test my program"<br>" -I can extend my program further<br>- I can identify the setup code I need in my program<br>- I can identify ways the program could be improved" |
| Next Steps | Y6 HT5 |
| Key Vocabulary | Commands<br>Sequence<br>Order<br>Sprite<br>Algorithm Order<br>Sprite<br>Algorithm |
| Teacher Assessment | |
| Possible Misconceptions | |
| Class Teacher Notes | |