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| **Year 5 Overview** |
| **Unit Name** | **Lesson** | **Learning Objectives** | **Success Criteria** | **Cross Curricular Links** |
| **Autumn 1** |
| Computing systems and networks - Systems and searching | 1 | Can I explain that computers can be connected together to form systems? |  -I can describe that a computer system features inputs, processes, and outputs- I can explain that computer systems communicate with other devices- I can explain that systems are built using a number of parts |   |
| Computing systems and networks - Systems and searching | 2 | Can I recognise the role of computer systems in our lives? |  -I can explain the benefits of a given computer system- I can identify tasks that are managed by computer systems- I can identify the human elements of a computer system |   |
| Computing systems and networks - Systems and searching | 3 | Can I experiment with search engines? |  -I can compare results from different search engines- I can make use of a web search to find specific information- I can refine my web search |   |
| Computing systems and networks - Systems and searching | 4 | Can I describe how search engines select results? |  -I can explain why we need tools to find things online- I can recognise the role of web crawlers in creating an index- I can relate a search term to the search engine’s index |   |
| Computing systems and networks - Systems and searching | 5 | Can I explain how search results are ranked? |  -I can explain that a search engine follows rules to rank results- I can give examples of criteria used by search engines to rank results- I can order a list by rank |   |
| Computing systems and networks - Systems and searching | 6 |  Can I recognise why the order of results is important, and to whom? |  -I can describe some of the ways that search results can be influenced- I can explain how search engines make money- I can recognise some of the limitations of search engines |   |
| **Autumn 2** |
| Creating media - Video production | 1 | Can I explain what makes a video effective? |  -I can compare features in different videos- I can explain that video is a visual media format- I can identify features of videos |   |
| Creating media - Video production | 2 | Can I identify digital devices that can record video? |  -I can experiment with different camera angles- I can identify and find features on a digital video recording device- I can make use of a microphone |   |
| Creating media - Video production | 3 | Can I capture video using a range of techniques? |  -I can capture video using a range of filming techniques- I can review how effective my video is- I can suggest filming techniques for a given purpose |   |
| Creating media - Video production | 4 | Can I create a storyboard? |  -I can create and save video content- I can decide which filming techniques I will use- I can outline the scenes of my video |   |
| Creating media - Video production | 5 | Can I identify that video can be improved through reshooting and editing? |  -I can explain how to improve a video by reshooting and editing- I can select the correct tools to make edits to my video- I can store, retrieve, and export my recording to a computer |   |
| Creating media - Video production | 6 | Can I consider the impact of the choices made when making and sharing a video? |  -I can evaluate my video and share my opinions- I can make edits to my video and improve the final outcome- I can recognise that my choices when making a video will impact on the quality of the final outcome |   |
| **Spring 1 – ORDER RESOURCES (CRUMBLE)** |
| Programming A – Selection in physical computing | 1 | Can I control a simple circuit connected to a computer? |  -I can create a simple circuit and connect it to a microcontroller- I can explain what an infinite loop does- I can program a microcontroller to make an LED switch on |   |
| Programming A – Selection in physical computing | 2 | Can I write a program that includes count-controlled loops? |  -I can connect more than one output component to a microcontroller- I can design sequences that use count-controlled loops- I can use a count-controlled loop to control outputs |   |
| Programming A – Selection in physical computing | 3 | Can I explain that a loop can stop when a condition is met? |  -I can design a conditional loop- I can explain that a condition is either true or false - I can program a microcontroller to respond to an input |   |
| Programming A – Selection in physical computing | 4 | Can I explain that a loop can be used to repeatedly check whether a condition has been met? |  -I can explain that a condition being met can start an action- I can identify a condition and an action in my project- I can use selection (an ‘if…then…’ statement) to direct the flow of a program |   |
| Programming A – Selection in physical computing | 5 | Can I design a physical project that includes selection? |  -I can create a detailed drawing of my project- I can describe what my project will do- I can identify a real-world example of a condition starting an action |   |
| Programming A – Selection in physical computing | 6 | Can I create a program that controls a physical computing project? |  -I can test and debug my project- I can use selection to produce an intended outcome- I can write an algorithm that describes what my model will do |   |
| **Spring 2** |
| Data and information – Flat-file databases | 1 | Can I use a form to record information? |  -I can create a database using cards- I can explain how information can be recorded- I can order, sort, and group my data cards |   |
| Data and information – Flat-file databases | 2 | Can I compare paper and computer-based databases? |  -I can choose which field to sort data by to answer a given question- I can explain what a field and a record is in a database - I can navigate a flat-file database to compare different views of information |   |
| Data and information – Flat-file databases | 3 | Can I outline how you can answer questions by grouping and then sorting data? |  -I can combine grouping and sorting to answer specific questions- I can explain that data can be grouped using chosen values- I can group information using a database |   |
| Data and information – Flat-file databases | 4 | Can I explain that tools can be used to select specific data? |  -I can choose multiple criteria to answer a given question- I can choose which field and value are required to answer a given question - I can outline how ‘AND’ and ‘OR’ can be used to refine data selection |   |
| Data and information – Flat-file databases | 5 | Can I explain that computer programs can be used to compare data visually? |  -I can explain the benefits of using a computer to create charts- I can refine a chart by selecting a particular filter- I can select an appropriate chart to visually compare data |   |
| Data and information – Flat-file databases | 6 | Can I use a real-world database to answer questions? |  -I can ask questions that will need more than one field to answer- I can present my findings to a group- I can refine a search in a real-world context  |   |
| **Summer 1** |
| Creating media – Introduction to vector graphics | 1 | Can I identify that drawing tools can be used to produce different outcomes? |  -I can discuss how vector drawings are different from paper-based drawings- I can experiment with the shape and line tools- I can recognise that vector drawings are made using shapes |   |
| Creating media – Introduction to vector graphics | 2 | Can I create a vector drawing by combining shapes? |  -I can explain that each element added to a vector drawing is an object- I can identify the shapes used to make a vector drawing- I can move, resize, and rotate objects I have duplicated |   |
| Creating media – Introduction to vector graphics | 3 | Can I use tools to achieve a desired effect? |  -I can explain how alignment grids and resize handles can be used to improve consistency- I can modify objects to create a new image- I can use the zoom tool to help me add detail to my drawings |   |
| Creating media – Introduction to vector graphics | 4 | Can I recognise that vector drawings consist of layers? |  -I can change the order of layers in a vector drawing- I can identify that each added object creates a new layer in the drawing- I can use layering to create an image |   |
| Creating media – Introduction to vector graphics | 5 | Can I group objects to make them easier to work with? |  -I can copy part of a drawing by duplicating several objects- I can recognise when I need to group and ungroup objects- I can reuse a group of objects to further develop my vector drawing |   |
| Creating media – Introduction to vector graphics | 6 | Can I apply what I have learned about vector drawings? |  -I can compare vector drawings to freehand paint drawings- I can create a vector drawing for a specific purpose- I can reflect on the skills I have used and why I have used them |   |
| **Summer 2** |
| Programming B – Selection in quizzes | 1 | Can I explain how selection is used in computer programs? |  -I can identify conditions in a program- I can modify a condition in a program- I can recall how conditions are used in selection |   |
| Programming B – Selection in quizzes | 2 | Can I relate that a conditional statement connects a condition to an outcome? |  -I can create a program with different outcomes using selection- I can identify the condition and outcomes in an 'if... then… else...' statement- I can use selection in an infinite loop to check a condition |   |
| Programming B – Selection in quizzes | 3 | Can I explain how selection directs the flow of a program? |  -I can design the flow of a program which contains ‘if… then… else…’- I can explain that program flow can branch according to a condition- I can show that a condition can direct program flow in one of two ways |   |
| Programming B – Selection in quizzes | 4 | Can I design a program which uses selection? |  -I can identify the outcome of user input in an algorithm- I can outline a given task- I can use a design format to outline my project |   |
| Programming B – Selection in quizzes | 5 | Can I create a program which uses selection? |  -I can implement my algorithm to create the first section of my program- I can share my program with others- I can test my program |   |
| Programming B – Selection in quizzes | 6 | Can I evaluate my program? |  -I can extend my program further- I can identify the setup code I need in my program- I can identify ways the program could be improved |   |