

## Year 5 - Sharing information

### Computer Science - Networks

| Lesson | Objective                                                                                        |
|--------|--------------------------------------------------------------------------------------------------|
| 1      | I can explain that systems are built using a number of parts                                     |
|        | I can describe that a computer system features inputs, processes, and outputs                    |
|        | I can explain that computer systems communicate with other devices                               |
| 2      | I can identify tasks that are managed by computer systems                                        |
|        | I can identify the human elements of a computer system                                           |
|        | I can explain the benefits of a given computer system                                            |
| 3      | I can recognise that data is transferred using agreed methods                                    |
|        | I can explain that networked digital devices have unique addresses                               |
|        | I can explain that data is transferred over networks in packets                                  |
| 4      | I can recognise that connected digital devices can allow us to access shared files stored online |
|        | I can send information over the internet in different ways                                       |
|        | I can explain that the internet allows different media to be shared                              |
| 5      | I can suggest strategies to ensure successful group work                                         |
|        | I can make thoughtful suggestions on my group's work                                             |
|        | I can compare working online with working offline                                                |
| 6      | I can identify different ways of working together online                                         |
|        | I can recognise that working together on the internet can be public or private                   |
|        | I can explain how the internet enables effective collaboration                                   |

## Year 5 - Vector drawing

### Information Technology and Digital Literacy - Media

| Lesson | Objective                                                                               |
|--------|-----------------------------------------------------------------------------------------|
| 1      | I can recognise that vector drawings are made using shapes                              |
|        | I can identify the main drawing tools                                                   |
|        | I can discuss how a vector drawing is different from paper-based drawings               |
| 2      | I can identify the shapes used to make a vector drawing                                 |
|        | I can explain that each element added to a vector drawing is an object                  |
|        | I can move, resize, and rotate objects I have duplicated                                |
| 3      | I can use the zoom tool to help me add detail to my drawings                            |
|        | I can explain how alignment grids and resize handles can be used to improve consistency |
|        | I can modify objects to create different effects                                        |
| 4      | I can identify that each added object creates a new layer in the drawing                |
|        | I can identify which objects are in the front layer or in the back layer of a drawing   |
|        | I can change the order of layers in a vector drawing                                    |
| 5      | I can copy part of a drawing by duplicating several objects                             |
|        | I can group to create a single object                                                   |
|        | I can reuse a group of objects to further develop my vector drawing                     |
| 6      | I create alternatives to vector drawings                                                |
|        | I can suggest improvements to a vector drawing                                          |
|        | I can apply what I have learned about vector drawings                                   |

## Year 5 - Video editing

### Information Technology and Digital Literacy - Media

| Lesson | Objective                                                                                           |
|--------|-----------------------------------------------------------------------------------------------------|
| 1      | I can explain that a video can include both visual and audio media                                  |
|        | I can explain the benefits of adding audio to a video                                               |
|        | I can plan a video project using a storyboard                                                       |
| 2      | I can identify and name digital devices that can record video and sound                             |
|        | I can choose the most suitable digital device for recording my project                              |
|        | I can locate and identify the working features of a digital device that can record video            |
| 3      | I can select a suitable device and software to capture my video                                     |
|        | I can demonstrate suitable methods of using a digital device to capture my video                    |
|        | I can demonstrate the safe use and handling of devices                                              |
| 4      | I can list some of the features of an effective video                                               |
|        | I can record a video that demonstrates some of the features of an effective video                   |
|        | I can explain why lighting and angle are important in creating an effective video                   |
| 5      | I can store, retrieve, and export my recording to a computer                                        |
|        | I can explain how to improve a video by reshooting and editing                                      |
|        | I can select the correct tools to make edits to my video                                            |
| 6      | 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 |
|        | I can evaluate my video and share my opinions                                                       |

## Year 5 - Flat-file databases

### Information Technology - Data and Information

| Lesson | Objective                                                                     |
|--------|-------------------------------------------------------------------------------|
| 1      | I can create multiple questions about the same field                          |
|        | I can explain how information can be recorded                                 |
|        | I can order, sort, and group my data cards                                    |
| 2      | I can navigate a flat-file database to compare different views of information |
|        | I can explain what a 'field' and a 'record' is in a database                  |
|        | I can choose which field to sort data by to answer a given question           |
| 3      | I can explain how information can be grouped                                  |
|        | I can group information to answer questions                                   |
|        | I can combine grouping and sorting to answer more specific questions          |
| 4      | 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         |
|        | I can choose multiple criteria to answer a given question                     |
| 5      | I can select an appropriate chart to visually compare data                    |
|        | I can refine a chart by selecting a particular filter                         |
|        | I can explain the benefits of using a computer to create graphs               |
| 6      | I can ask questions that will need more than one field to answer              |
|        | I can refine a search in a real-world context                                 |
|        | I can present my findings to a group                                          |

## Year 5 - Selection in physical computing

### Computer Science - Programming A

| Lesson | Objective                                                                                                                                                 |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | I can build a simple circuit to connect a microcontroller to a computer                                                                                   |
|        | I can program a microcontroller to light an LED                                                                                                           |
|        | I can explain why I used an infinite loop                                                                                                                 |
| 2      | I can connect more than one output device to a microcontroller                                                                                            |
|        | I can design sequences for given output devices                                                                                                           |
|        | I can decide which output devices I control with a count controlled loop                                                                                  |
| 3      | I can explain that a condition is something that can either be true or false (e.g. whether a value is more than 10, or whether a button has been pressed) |
|        | I can experiment with a do until loop                                                                                                                     |
|        | I can program a microcontroller to respond to an input                                                                                                    |
| 4      | I can explain 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                                                                          |
| 5      | I can identify a condition to start an action (real world)                                                                                                |
|        | I can describe what my project will do (the task)                                                                                                         |
|        | I can create a detailed drawing of my project                                                                                                             |
| 6      | I can write an algorithm to control lights and a motor                                                                                                    |
|        | I can use selection to produce an intended outcome                                                                                                        |

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|  | I can test and debug my project |
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## Year 5 - Selection in quizzes

### *Computer Science - Programming B*

| Lesson | Objective                                                                  |
|--------|----------------------------------------------------------------------------|
| 1      | I can recall how conditions are used in selection                          |
|        | I can identify conditions in a program                                     |
|        | I can modify a condition in a program                                      |
| 2      | I can use selection in an infinite loop to check a condition               |
|        | I can identify the condition and outcomes in an if..then... else statement |
|        | I can create a program with different outcomes using selection             |
| 3      | I can explain that program flow can branch according to a condition        |
|        | I can design the flow of a program which contains if... then... else..     |
|        | I can show that a condition can direct program flow in one of two ways     |
| 4      | I can outline a given task                                                 |
|        | I can use a design format to outline my project                            |
|        | I can identify the outcome of user input in an algorithm                   |

|   |                                                                        |
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| 5 | I can implement my algorithm to create the first section of my program |
|   | I can test my program                                                  |
|   | I can share my program with others                                     |
| 6 | I can identify ways the program could be improved                      |
|   | I can identify what setup code my project needs                        |
|   | I can extend my program further                                        |