

## Year 6 - Progression of Knowledge and Skills IT

Term	Knowledge	Skills
<p><b>Autumn 1</b> <b>Coding – 6 lessons</b></p>	<ul style="list-style-type: none"> <li>• Number elements combined with a number variable and an if/else statement can be used to create an onscreen countdown timer.</li> </ul>	<ul style="list-style-type: none"> <li>• Create a countdown timer.</li> </ul>
<p><b>Autumn 2</b> <b>Blogging</b></p> <p><b>Autumn 2</b> <b>Micro:bit</b></p>	<ul style="list-style-type: none"> <li>• A blog is an online vehicle for displaying thoughts and ideas in an informal style.</li> <li>• It is important to plan-out the theme and content of a blog before writing it.</li> <li>• People can contribute to blogs by adding their own posts.</li> <li>• A micro:bit is a tiny computer which needs instructions in code to make it work.</li> <li>• A micro:bit can produce outputs.</li> <li>• A micro:bit can receive inputs.</li> <li>• Code from the coding environment can be transferred onto a micro:bit.</li> <li>• The order (sequence) of instructions is important when coding.</li> </ul>	<ul style="list-style-type: none"> <li>• Explain the difference between a blog and vlog.</li> <li>• Talk about the key features of a blog home page.</li> <li>• Talk about what makes a good blog post.</li> <li>• Plan-out a blog post on a given theme.</li> <li>• Create a blog and blog post.</li> <li>• Publish the post.</li> <li>• Explain that a micro:bit is a piece of hardware that can have code created for it that makes use of its inputs and outputs.</li> <li>• Recognise and locate key hardware components on the micro:bit such as its display, speaker and accelerometer.</li> <li>• Identify and use code blocks that produce outputs. .</li> </ul>

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<p>Autumn 2 Micro:bit</p>		<ul style="list-style-type: none"> <li>• Code a micro:bit to make different outputs happen depending on different inputs</li> <li>• Identify and use code blocks that are associated with receiving inputs.</li> <li>• Use event commands such as 'when micro:bit button' and 'when gesture' in programs to meet specific intentions.</li> <li>• Make a program that requires inputs (event commands as above) that produce an output.</li> <li>• Use the simulator within the Freecode/MakeCode micro:bit environment to test code before transferring to micro:bit.</li> <li>• Use the transfer feature to move code to a micro:bit.</li> <li>• Recognise how the order of code is essential in order to meet a program's intentions.</li> </ul>

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<p style="text-align: center;"><b>Spring 1 Spreadsheets</b></p>	<ul style="list-style-type: none"> <li>• There are key features of a spreadsheet, and they can enter data into cells.</li> <li>• Formulae can be entered into a spreadsheet, and this can save time and make working more efficient.</li> <li>• A spreadsheet can be used to model a situation.</li> <li>• Sheets can make complex data clear by manipulating the way it is presented.</li> <li>• Formulae can be used for percentages, averages, max and min in spreadsheets.</li> <li>• They can use a spreadsheet to model a real-life situation.</li> <li>• Their spreadsheet skills can be used to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>• Talk about some uses of a spreadsheet.</li> <li>• Enter data into cells of the chosen program.</li> <li>• Recall key vocabulary relating to spreadsheets.</li> <li>• Define what is meant by a formula on a sheet.</li> <li>• Write simple formula related to the rules of calculation.</li> <li>• Use formulae to change calculations automatically when data entered is changed.</li> <li>• Use a computational model in a real-life situation.</li> <li>• Manipulate the way data is presented</li> <li>• Use more advanced formula</li> <li>• Plan an event using a spreadsheet</li> <li>• Solve problems using a spreadsheet</li> </ul>

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<p style="text-align: center;"><b>Spring 2 Networks</b></p>	<ul style="list-style-type: none"> <li>• The difference between the World Wide Web and the Internet.</li> <li>• LAN and WAN are different kinds of networks,</li> <li>• The Internet has changed our lives in many ways.</li> </ul>	<ul style="list-style-type: none"> <li>• Recall the difference between the Internet and World Wide Web.</li> <li>• Answer a quiz to test their knowledge.</li> <li>• Explain the difference between LAN and WAN. .</li> <li>• Consider how the Internet has changed things in their lifetime.</li> </ul>
<p style="text-align: center;"><b>Spring 2 Graphing</b></p>	<ul style="list-style-type: none"> <li>• Graphing helps to make sense of datasets and draw conclusions related to the collected data</li> <li>• There are different types of graphs.</li> <li>• Comparative bar charts can be used to visually compare several datasets.</li> <li>• Graphs can be exported from a graphing tool and imported into other documents.</li> <li>• Pie charts represent data as parts of a whole.</li> <li>• Line graphs are used to represent the relationship between two variables as they change over time.</li> </ul>	<ul style="list-style-type: none"> <li>• Create a variety of graphs and interpret these to draw conclusions.</li> <li>• Create a variety of graph types and determine the best format to represent specified data.</li> <li>• Create and present a comparative bar chart using the 2Graph tool.</li> <li>• Export graphs from 2Graph and import them into a 2Publish file.</li> <li>• Use 2Graph and 2Calculate to create pie charts and then interpret what they show.</li> </ul>

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<p><b>Spring 2 Graphing</b></p>		<ul style="list-style-type: none"> <li>• Compare the use of each tool in relation to graph production.</li> <li>• Decide when a line graph would be the most appropriate graphing format.</li> <li>• Create line graphs and use a graphing tool to add titles, labels and select the best scale for display.</li> <li>• Create line graphs showing multiple datasets and use these to draw conclusions about the data.</li> </ul>
<p><b>Summer 1 Data detectives</b></p>	<ul style="list-style-type: none"> <li>• A database contains data organised in such a way that it can be queried to find useful information.</li> <li>• Query tools exist to help users of a database find information from data stored within it.</li> <li>• Chart tools can be used to make graphs from data contained within a database.</li> <li>• Some databases will need multiple tables of data.</li> <li>• Queries can be created that query data from multiple tables.</li> <li>• Bespoke multiple conditions can be made that help a user find the exact information being asked.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify tables, records and fields.</li> <li>• Explain the data types contained within each field on a record.</li> <li>• Use query tools to find useful information.</li> <li>• Use the filter tool to create conditions.</li> <li>• Use the grouping tool to group related information together as part of a query.</li> <li>• Use the calculate tool to apply calculations to selected data that provides meaningful results.</li> </ul>

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<p style="text-align: center;">Summer 1 Data detectives</p>		<ul style="list-style-type: none"> <li>• Use the sort tool to change the order records are presented according the field selected and the value order (increase/decrease).</li> <li>• Use the chart tool to select specific fields from a database for the x and y values on a graph.</li> <li>• Select the most appropriate graph type to display selected data so it makes sense in relation to a query given.</li> <li>• Identify differences in data held in individual tables that make a complete database.</li> <li>• Explain why the data can't be all held on one table.</li> <li>• Link tables together by using a common field.</li> <li>• Produce queries that query data from linked tables.</li> <li>• Create multiple condition and can join those using the AND/OR operator.</li> <li>• Use the AND/OR operator correctly and recognise the difference between the two and the impact this has on results when run.</li> </ul>

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<p style="text-align: center;"><b>Summer 1</b> <b>Data detectives</b></p>		<ul style="list-style-type: none"> <li>• Use brackets to contain multiple conditions and apply a general condition that applies to all conditions made.</li> </ul>
<p style="text-align: center;"><b>Summer 2</b> <b>3D modelling</b></p>	<ul style="list-style-type: none"> <li>• Designers use CAD (Computer Aided Design) to create accurate drawings or 3D Models on a screen.</li> <li>• CAD allows designers to create accurate and flexible designs, allowing them to test out ideas and spot problems before something is built in real life.</li> <li>• 2Design and Make is the CAD software on Purple Mash which allows users to develop a range of 3D models.</li> <li>• There are three viewpoints on Design and Make; Points view, Net view, and 3D view.</li> <li>• Moving, adding and removing points on a model allows the designer to manipulate the shape to meet the desired design.</li> </ul>	<ul style="list-style-type: none"> <li>• Define what a 3D model is.</li> <li>• Identify different industries where CAD is used.</li> <li>• Identify the benefits of using CAD.</li> <li>• Use Design and Make accurately.</li> <li>• Spot problems in their own 3D models on Design and Make and make adaptations where necessary.</li> <li>• View a model from each viewpoint.</li> <li>• Use each view to better their models, making use of the editing tools within each viewpoint.</li> <li>• Change the location of the points to alter the appearance of the model.</li> <li>• Add and remove points to manipulate the shape of their model to meet a purpose.</li> </ul>