Class/Year Group Silver Birch/Yr5 & 6 Topic ICT Term Summer 1 (2020-21)

<table>
<tr><td>Curriculum Drivers</td><td>Aspiration</td><td>Community</td><td>Key Vocabulary</td><td>arrow, axis (x, y), cells, chart (bar, line, pie), columns, cursor, formatting, graph (line, scatter), height, highlight, width, rows</td></tr>
<tr><td>National Curriculum</td><td colspan="2">select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</td><td></td><td></td></tr>
<tr><td>Intent</td><td colspan="2">Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner</td><td>Cross Curricular Links and wider influences</td><td>English
• Write a questionnaire for a specific target audience
• Use the data collected as supporting evidence
• Creating appropriate questions

Maths

• Creating and interpreting charts and graphs
• Interpreting data</td></tr>
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Curriculum Driver Links	Community –We can use data to drive change Aspiration – use of digital technology to collect and present data in a professional way.	Links to prior learning	Students should have experience of using digital technology to gather and present data to provide evidence for change.
Concept Thread	Collect Developing an understanding of databases and their uses	Links to future learning	In KS3 students will learn to undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users

Lesson Intent	Links to Prior Knowledge	Skills	Implementation/Intent
Understand what a spreadsheet does Identify key elements of a spreadsheet (cells, columns, rows and formula's)		Spread sheet Vocab Change row and column size and width	Elicitation task - show a spreadsheet/chart (what does it show us?) Open excel (have they seen this program before? If so where? By who? Why?) Explain that it helps us to work with numbers, work out situations and create cool graphs; that today we are going to look at the main elements of a spreadsheet Cells (can they identify cell names)

Know how to manipulate rows and columns			Columns (show how to change the width) Row (show how to change the height) Show how we can select more than one row or column and change the size of all the selected; how we can select all the spreadsheet by using the far-left corner Briefly recap the normal formatting tools Activity – use spreadsort Model how to access the various muddled spreadsheets by using the tabs at the bottom Set the challenge to un-muddle as many spreadsheets in a set time (revise selecting more than one row or column and changing the size of all the selected) **Plenary** Test class on spreadsheet vocabulary
Adapting a previously created graph to add axis and titles	Recap that a spreadsheet helps us to work with numbers, work out situations and create cool graphs	Right click within graph to bring up graph menu Selecting correct graph menu choices	Actvity – use unfinishedgraphs (Office 2010) Show one of the graphs. Explain that the numbers on the spread sheet are represented by columns on the graph. Change a number and watch the graph column change. Demonstrate how to modify the graph by right clicking on it and selecting:

		using the layout tab	Chart Type (What type of chart to use line/bar/pie etc) demonstrate with types of bar chart to start with Move Chart (Into its own page or as an object on the spreadsheet page) Left click on the graph and move up to the Layout Tab to add a title and label the axis (Demonstrate one menu option and then give chance to use it. Then come back and demo another before allowing pupils to try) Once they have got the hang of these three skills allow then time to adjust the other graphs.
Knowing how to create a graph from prepared spread sheet data Know how to format the graph	Recap that the numbers on spread sheets can be represented by columns on graphs.	Choosing the correct graph type Highlighting the right cells to be made into a graph Filling in title and axis details correctly	Explain - they are going to create a simple graph from prepared data on a spreadsheet. Activity - use graphs and look at the medals sheet. Model how to create a graph out of the data to include x and y axis labels and titles, then let them try. If they finish, they can create graphs from sheets 2 & 3 as well Explain that you are now going to change the formatting (how it looks) of the graph. Activity 2 - format the graphs created in the first part of the lesson Plenary - allow students to sensibly go around and look at each other's graphs. Which ones were easy to understand and why?

<table>
<tr><td></td><td></td><td></td><td>Explain it is very easy to change a graph and make it look really funky but the primary purpose of a graph is to show the data and if it doesn't do this then it is not a high-level piece of work.</td></tr>
<tr><td>Creating your own graph from data provided but which you need to input into the spreadsheet</td><td>Recap that a spreadsheet helps us to work with numbers, work out situations and create cool graphs

Recap that the numbers on spread sheets can be represented on graphs.

Recap the primary purpose of a graph is to show the data</td><td>Transferring data from the interactive whiteboard onto the spreadsheet

Choosing the correct graph type

Highlighting the right cells to be made into a graph

Filling in title and axis details correctly</td><td>Prepare a simple test with imaginary results. Have a short key question followed by the data.

Model making a graph out of this data

Example

Do lighter cats sleep more?

<table><tr><td>Cats</td><td>Amount of Sleep in hours</td></tr><tr><td>Freckle 3.1kg</td><td>12</td></tr><tr><td>Herman 3.6kg</td><td>11</td></tr><tr><td>Poppy 4.1kg</td><td>9</td></tr><tr><td>Tiddles 4.3kg</td><td>8</td></tr></table>
Teaching points - this is pseudo science and the sample of cats is much too small (of they do not spot tell them this at some point).

Notice - the weights alongside the cats in the first column (this means they will become part of the labels of the bars or columns).</td></tr>
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<tr><td></td><td></td><td></td><td>Notice – the not written hours in next to the sleep amounts (Spreadsheets treat cells as number cells or text cells, any letters in a cell means the spreadsheet thinks it is a text cell and will ignore the numbers)

Now allow children time to create their own graph out of the shared data.
Plenary - allow pupils to look at each other's and vote the graph which is clearest hence (reinforce message form last lesson that it is not skills but knowing when to use or not use skills that leads to high ICT capability)</td></tr>
<tr><td>Understanding the relationship between the cell data and the point on the bar or line graph

Creating line graphs using scatter graphs where needed</td><td>Recap that a spreadsheet helps us to work with numbers, work out situations and create cool graphs

Recap that the numbers on spread sheets can be represented on graphs.

Recap the primary purpose of a</td><td>Plot a graph using a scatter graph

Plot a graph using a line graph</td><td>Download smile

Open the first sheet, and model how to change the graph by changing the numbers in the yellow cells.

Activity - create a smile by manipulating the numbers in the yellow cells (dragging the manipulation points on the graph is disallowed, but can show them this at the end). If they finish, they can create a wave and a rugby ball.

Model - how to create a line graph

Explain - we would only create line graphs with data where any part on the line could mean something. Demonstrate what happens when you try to use numbers for one of the axis on a line graph. (Both sets of numbers are turned into lines)

Example

Water cooling
<table>
<tr><td>Time in minutes</td><td>Temperature in degrees</td></tr>
<tr><td>0</td><td>61</td></tr>
</table>
</td></tr>
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	graph is to show the data		<table><tr><td>1</td><td>52</td></tr><tr><td>2</td><td>48</td></tr><tr><td>3</td><td>46</td></tr><tr><td>4</td><td>45</td></tr></table> Copy this exactly as it is on this chart and select a line graph. It will plot both sets of numbers as lines on the graph. To get around this show pupils that we can use a scatter diagram. This will position the first columns results as an axis. Now give them an opportunity to try this for themselves
Design a form for a survey/questionnaire to collect the required data Collect data and enter it in to a database under appropriate field headings Create an appropriate graph for purpose	Recap that a spreadsheet helps us to work with numbers, work out situations and create cool graphs Recap that the numbers on spread sheets can be represented on graphs.	Complete a questionnaire on Google forms Put results into a spreadsheet, and create a graph	Model – a simple questionnaire on Google forms (such as "what hair colour do you have?") Activity – to create their own questionnaire, and save into a shared drive where others can complete. Model – how to take data and input into a spreadsheet using appropriate field headings (such as hair colour, number of people) Activity – to input their data into a spreadsheet using appropriate field headings Model – how to create an appropriate graph, and how to label the axis/title Activity – to create an appropriate graph, and to label the axis/title

	Recap the primary purpose of a graph is to show the data		
Present relevant data and appropriate graph to others Evaluate the effectiveness and impact of data collection			Present a finished powerpoint that clearly represents the last weeks data Model – how to edit a PowerPoint slide (cut/paste graph from excel, textbox to interpret data) Activity - to create a PowerPoint slide they can use to present their data/graph to the class Hot task – show the same spreadsheet/chart from lesson 1 (what does it show us?)