

# Y3 ICT: Introduction to Databases

Medium Term Planning – Half Termly Planner

Term: Spring 1 + 2	Teacher:
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<b>Differentiation</b> (Detailed differentiation in weekly plans.)  SEN: Support from teaching assistant during lessons as well as mixed ability partners.  GT: provide support to less able students. Help children who are finding tasks more difficult. Move on to applying skills.	<b>Vocabulary</b>  database, field, record, file, sort, classify, order, bar chart	<b>Cross-curricular links</b>  Numeracy: bar graphs and tables, categorising, sorting PSHE: ourselves and social research Literacy: organising and grouping similar information, producing reports Science – representing results and sorting information Geography – census data, comparing different schools History – census data, changes in school life over time
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**You will need the census data from the geography unit ‘Our Local Area’ for lessons 6 onwards**

W	Learning Objective	Skills/knowledge/activities	Resources	Assessment: Success criteria	Evaluation												
1	<p>Self-assess database skills</p> <p>Enter data into a database with a predetermined structure</p> <p>Consider why collecting and storing information in an organised way is helpful</p> <p>Evaluate the pros and cons of paper-based and ICT-based records</p>	<p>Children complete a tick list to self-assess their skills in using databases. Do this as a class, in case there are words that children cannot read.</p> <p>Intro: Show the class the ‘record cards’ from the box containing children’s contact details from the office. Show a card and discuss what it contains. Explain how the information is structured into fields with all the information on one person held on a single card called a ‘record’. How is it organised? (by year group and then alphabetical order of surname) What is the benefit of organising the record cards in this way? Introduce the class to a set of paper-based record cards containing the following fields: record number, first name, surname, date of birth, day of birth, month of birth, year of birth, sex, eye colour and hair colour. Show a blank one and one and I will complete one using my own information.</p> <p>Main: Children complete worksheet with the following:</p> <ol style="list-style-type: none"> <li>their own personal record card at the top (then they enter the information onto a whole class database)</li> <li>complete the following sentence starter: collecting and storing information in an organised way is helpful because ...</li> <li>Complete following table:</li> </ol> <table border="1" style="margin-left: 20px;"> <tr> <td colspan="2">Paper-based records</td> <td colspan="2">ICT-based records</td> </tr> <tr> <td>Advantages</td> <td>Disadvantages</td> <td>Advantages</td> <td>Disadvantages</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> <p>Each child comes to the computer to input their data into the database when they finish.</p> <p>Plenary: Show completed class database. Discuss advantages and disadvantages of paper-based and ICT-based records</p>	Paper-based records		ICT-based records		Advantages	Disadvantages	Advantages	Disadvantages					<p>Box with contact details from office</p> <p>Worksheet</p> <p>Blank database for class</p>	<p>MUST: enter data into a database</p> <p>SHOULD: understand why collecting and storing information in an organised way is helpful</p> <p>COULD: understand that before computers were invented databases were paper-based and consider the pros and cons of</p>	
Paper-based records		ICT-based records															
Advantages	Disadvantages	Advantages	Disadvantages														

2	<p>Find information in a database by matching the query to the question</p> <p>Use information in a database to answer straightforward questions</p>	<p>Intro:  Show children completed database that we started last week.  Explain that each column heading is a field and each row is a record.  Discuss where else databases are used e.g. police, library, store cards and when and why this information is useful.  Explain task – Children need to answer questions, the answers to which are found in the database.  Explain how to use find tool by pressing Ctrl + F, then typing in what you want to find and clicking find or pressing enter.  Explain how to sort on one field of data in ascending and descending order by highlighting the field you want to sort on and clicking 'sort A to Z' or clicking 'sort Z to A' and then choosing either</p> <ul style="list-style-type: none"> <li>• to 'expand the selection' (change all of the table)</li> <li>• to 'continue with the selection' (change just the one field)</li> </ul> <p>Explain how you can count the number of rows highlighted by looking in the bottom right-hand corner of the screen</p> <p>Main:  Children need to answer questions, the answers to which are found in the database by searching and sorting the database.</p> <p>Plenary:  Recap how to use find and sort functions and address any remaining questions or misconceptions.</p> <p>Print work to stick in ICT books.</p>	<p>Class database saved as a template excel file</p> <p>Worksheet with questions to answer</p>	<p>MUST: search a database</p> <p>SHOULD: correctly answer questions by searching a database</p> <p>COULD: use the 'find' and 'sort' functions to answer questions</p>	
3	<p>Know how to change the format features of cells</p>	<p>Intro:  Explain what it means to change the format of a cell.  Model how to change the following format features of cells in Excel by right clicking on a cell then clicking 'format cells' or using the icons at the top of the page:</p> <ul style="list-style-type: none"> <li>• 'number' e.g. currency, date</li> <li>• 'alignment' e.g. text orientation, centred</li> <li>• 'border' e.g. bottom border, right-sided border</li> </ul> <p>Children complete worksheet in Excel that requires them to change the 'number', 'alignment' and 'border' format features of cells</p> <p>Plenary: Recap how to change the format features of cells and address any remaining questions or misconceptions.</p>	<p>Worksheet saved as template file in year 3 folder</p>	<p>MUST: know that the format features of cells can be changed</p> <p>SHOULD: correctly change one / two format feature of cells</p> <p>COULD: correctly change three format features of cells</p>	
4	<p>Sort information in a database on more than one criterion</p>	<p>Intro:  Revise how to sort one field of data by highlighting the field you want to sort on and clicking 'sort A to Z' or clicking 'sort Z to A' and then choosing either</p> <ul style="list-style-type: none"> <li>• to 'expand the selection' (change all of the table)</li> <li>• to 'continue with the selection' (change just the one field).</li> </ul> <p>Explain how using 'custom sort' allows you to sort on one field, and then on another field.  Explain the terms:</p> <ul style="list-style-type: none"> <li>• header</li> </ul>	<p>Section of database saved as template file in year 3 folder</p> <p>Worksheet</p>	<p>MUST: know that data can be sorted</p> <p>SHOULD: sort data in a database</p> <p>COULD: sort data in a database using more than one</p>	

		<ul style="list-style-type: none"> <li>• add level</li> <li>• sort by</li> <li>• order</li> </ul> <p>Main: Give children a small section of the database (not the whole thing) so that they can sort using more than one criterion and print what they have done on just 1 page</p> <p>Plenary: Recap how to sort the database and address any remaining questions or misconceptions.</p>		<p>criteria</p>	
5	Sort information in a database by applying filters	<p>Intro: Children that struggled with sorting the database in previous lesson, go with teaching assistant to carry on working on this.</p> <p>Model how to filter the class database that we created and how to remove the filter. Discuss why filtering it might be useful.</p> <p>Main: Children filter the database using one category at a time, and then two categories at a time.</p> <p>Plenary: Recap how to filter the database and address any remaining questions or misconceptions.</p>	<p>Class database</p> <p>Worksheet</p>	<p>MUST: know that filters can be applied to databases</p> <p>SHOULD: apply one filter at a time</p> <p>COULD: apply more than one filter at a time</p>	
6	Produce a bar chart and a pie chart from a database	<p>Intro: If children think they already know how to create a graph and a pie chart, or they can do this by following a set of instructions, let them get started.</p> <p>Children that struggled with filtering the database / didn't get on to it in previous lesson, go with teaching assistant to carry on working on this.</p> <p>Model how to create bar graph from class database using year of birth and using instructions on creating a bar graph that I made (before doing this you need to change the format of the years (2000 and 2001) to text, otherwise the graph comes out funny. This goes for any categories that are also numbers e.g. day of birth</p> <p>Main: Children open instructions I have written on how to create a bar graph in Excel and follow them.</p> <p>Extension: Create a pie chart by following the instructions I have created.</p> <p>Plenary: In pairs children check each other's bar graphs and point out / help with any mistakes, before printing them off.</p>	<p>Class database</p> <p>Instructions on how to create bar graph in Excel</p>	<p>MUST: begin a bar graph in Excel using the database</p> <p>SHOULD: complete a bar graph in Excel using the database</p> <p>COULD: create a pie chart</p>	

7	<p>Produce a bar chart and a pie chart from a database (LA)</p> <p>Begin a report, incorporating graphs and charts (HA)</p>	<p>Intro: Children who did not get to finish their bar graphs / pie charts last lesson, go with teaching assistant to finish these off.</p> <p>Children who were able to do this, stay and explain to them that they will be writing a report comparing our school's census data with another school's census data - a school with different characteristics to ours (you could get another school to do the census or use fictitious data and make it different to your school)</p> <p>Discuss when it would be best to use separate pie charts e.g. type of home, and when it would be best to use bar charts with both schools data on one chart e.g. number of boys / girls</p> <p>Main: Children need to write a report for each section of census data, to include:</p> <ul style="list-style-type: none"> <li>• a bar graph / pie chart</li> <li>• a brief description of what each graph / chart shows</li> <li>• a reason for the differences (if any) between the schools</li> </ul> <p>I have done an introduction and one section for them as a model; they can continue this.</p> <p>Plenary: Children read their report so far to check that they have included each of the above in every paragraph.</p>	<p>Census data from other school</p> <p>Model introduction an first section</p>	<p>MUST: complete a bar chart and a pie chart from a database</p> <p>SHOULD: begin a report comparing our school and another school's census data</p> <p>COULD: get more of the report completed</p>	
8	<p>Produce a bar chart and a pie chart from a database (LA)</p> <p>Complete a report, incorporating graphs and charts (HA)</p>	<p>Intro: I will take children who struggled with creating a bar graph and pie chart and go over this again with them using a different category to the ones they chose to do in the previous lessons.</p> <p>Teaching assistant to stay with children who are working on reports. Children should write a conclusion / summary with 10 minutes left.</p> <p>Plenary: Address any common mistakes with children working on graphs.</p> <p>Children read their report so far to check that they have included each of the above in every paragraph.</p> <p>Print work to stick in ICT books and mark.</p>	<p>Census data from other school</p>	<p>MUST: complete a bar chart and a pie chart from a database</p> <p>SHOULD: complete their report</p> <p>COULD: include a summary to sum up the main points of the report</p>	

9 + 10	Create a report, incorporating graphs and charts	<p>This lesson requires 2 lessons because the children will be slow typing and creating graphs.</p> <p>Intro: Display data from fictitious census of our school 100 years ago. Looking at frequency tables of census data, what differences do we notice e.g. larger families, no one travelling by tube or bus.</p> <p>Main: LA - write a report comparing one aspect of school today and 100 years ago HA - write a report comparing <b>more than one</b> aspect of school today and 100 years ago</p> <p>HA should be able to do this independently, following practice doing it for comparing our school's census data with another school</p> <p>Children need to write a report for each section of census data, to include:</p> <ul style="list-style-type: none"> <li>• a bar graph / pie chart</li> <li>• a brief description of what each graph / chart shows</li> <li>• a reason for the differences (if any) between the schools</li> </ul> <p>Plenary: Children read their report so far to check that they have included each of the above in every paragraph.</p>	<p>Fictitious census data from 100 years ago</p> <p>Model comparison of one aspect</p>	<p>MUST: write a report comparing one aspect of school today and 100 years ago</p> <p>SHOULD: write a report comparing <b>more than one</b> aspect of school today and 100 years ago</p> <p>COULD: include all 3 desirable features in every paragraph</p>	
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### Assessment

<p style="text-align: center;"><b>Some children will not have made so much progress and will achieve</b></p> <p style="text-align: center;"><b>2b or c</b></p>	<p style="text-align: center;"><b>Most will achieve</b></p> <p style="text-align: center;"><b>2a-3c</b></p>	<p style="text-align: center;"><b>Some will progress further and achieve</b></p> <p style="text-align: center;"><b>3b-3a</b></p>
<ul style="list-style-type: none"> <li>• enter data into a database with a predetermined structure</li> <li>• find information in it by matching the query to the question</li> </ul>	<ul style="list-style-type: none"> <li>• enter data into a database with a predetermined structure</li> <li>• use it to answer straightforward questions</li> <li>• produce bar charts</li> </ul>	<ul style="list-style-type: none"> <li>• enter data into a database with a predetermined structure</li> <li>• use it to answer straightforward questions</li> <li>• produce bar charts;</li> <li>• turn questions into search criteria</li> </ul>

**Note:** Although Microsoft Excel is really a 'spreadsheet' program and Microsoft Access is a true 'database' program, Access is difficult to use and less commonly used. If you want to purchase a child friendly database program, 2Investigate available as part of the 2Simple series of programmes is good (<http://www.2simple.com/programs/>)