

# Unit 5C Evaluating information, checking accuracy and questioning plausibility

## ABOUT THE UNIT

In this unit children learn the importance of checking information for mistakes and anomalies, how to detect mistakes and to amend them.

They will be able to apply what they have learnt in this unit whenever they handle information.

## WHERE THE UNIT FITS IN

This unit builds on Unit 4D 'Collecting and presenting information: questionnaires and charts', and Unit 5B 'Analysing data and asking questions: using complex searches'.

This unit assumes that children can interpret bar charts and line graphs.

## TECHNICAL VOCABULARY

- accuracy
- error
- bias

## RESOURCES

- prepared data files containing errors

## EXPECTATIONS

### at the end of this unit

*most children will:*

interpret, check and question data; recognise that poor quality information leads to unreliable results

*some children will not have made so much progress and will:*

recognise the importance of checking data and that poor quality information leads to unreliable results

*some children will have progressed further and will:*

interpret, check and question data; use logical inference to identify implausible and inaccurate data; recognise that poor quality information leads to unreliable results

LEARNING OBJECTIVES	POSSIBLE TEACHING ACTIVITIES	LEARNING OUTCOMES	POINTS TO NOTE
<b>SETTING THE SCENE</b>			
CHILDREN SHOULD LEARN	<ul style="list-style-type: none"> <li>◆ Ask the class to consider how databases are used in everyday life, eg a <i>pupil database on the school computer, databases in banks, hospitals, supermarkets, offices; and those held by police, local authorities and government agencies</i>. Discuss the purposes and uses of these databases. Discuss what would happen if any of these databases contained errors. Discuss with the class how the unregulated nature of the Internet can lead to inaccurate or biased information. Ask the children to suggest who might put this information on the World Wide Web, and why.</li> </ul>	<p>CHILDREN</p> <ul style="list-style-type: none"> <li>• identify some of the implications of incorrect data</li> </ul>	This could lead to a discussion of bias.
<b>SHORT FOCUSED TASKS</b>			
<ul style="list-style-type: none"> <li>• <b>technique:</b> to check for accuracy by checking data</li> </ul>	<ul style="list-style-type: none"> <li>◆ Prepare a database containing errors, such as incorrect spelling, implausible data (for example, 1 metre for the length of a river), and incorrect field types (for example 'ten' in a number field or 'girl' in a field where 'f' for female is required). The errors should be ones which could have serious implications; for example, incorrect totals in a savings account or times in a timetable database. Ask the children to practise checking accuracy and amending records. Then ask them to discuss how errors can affect results.</li> <li>◆ Discuss cases when data can be corrected immediately (such as incorrectly spelt entries or obviously incorrect field types), and cases when errors can be detected but not corrected (such as when the data is implausible). Tell the class that if errors are more complex it may be safer to delete the whole record.</li> </ul>	<ul style="list-style-type: none"> <li>• identify incorrect and implausible data</li> </ul>	<p>Some children will only identify mistakes where they know the right answer. More able children should be encouraged to use logical inference to spot anomalies. All children should be encouraged to think carefully before making any changes to data as some changes that appear obvious may not be correct; for example, spellings of unfamiliar names or data outside children's experience.</p>
<ul style="list-style-type: none"> <li>• <b>technique:</b> to check for anomalies using graphical representations</li> </ul>	<ul style="list-style-type: none"> <li>◆ Prepare a data file that measures a child's height from birth to the age of 12 and include one error. Show the data to the class and discuss how difficult it is to spot errors. Show how a line graph can help highlight errors.</li> <li>◆ Ask the children to use line graphs to check for mistakes whenever they enter continuous data into a database, spreadsheet or graphing program.</li> </ul>	<ul style="list-style-type: none"> <li>• identify an incorrect point on a line graph</li> </ul>	Other visual inspection techniques using other types of graphs and charts could be covered.
<b>INTEGRATED TASK</b>			
<ul style="list-style-type: none"> <li>• to identify and correct implausible and inaccurate data</li> </ul>	<ul style="list-style-type: none"> <li>◆ These techniques could be practised whenever children use ICT to handle information.</li> </ul>	<ul style="list-style-type: none"> <li>• identify and correct inaccurate and implausible data when using ICT to handle information</li> </ul>	



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