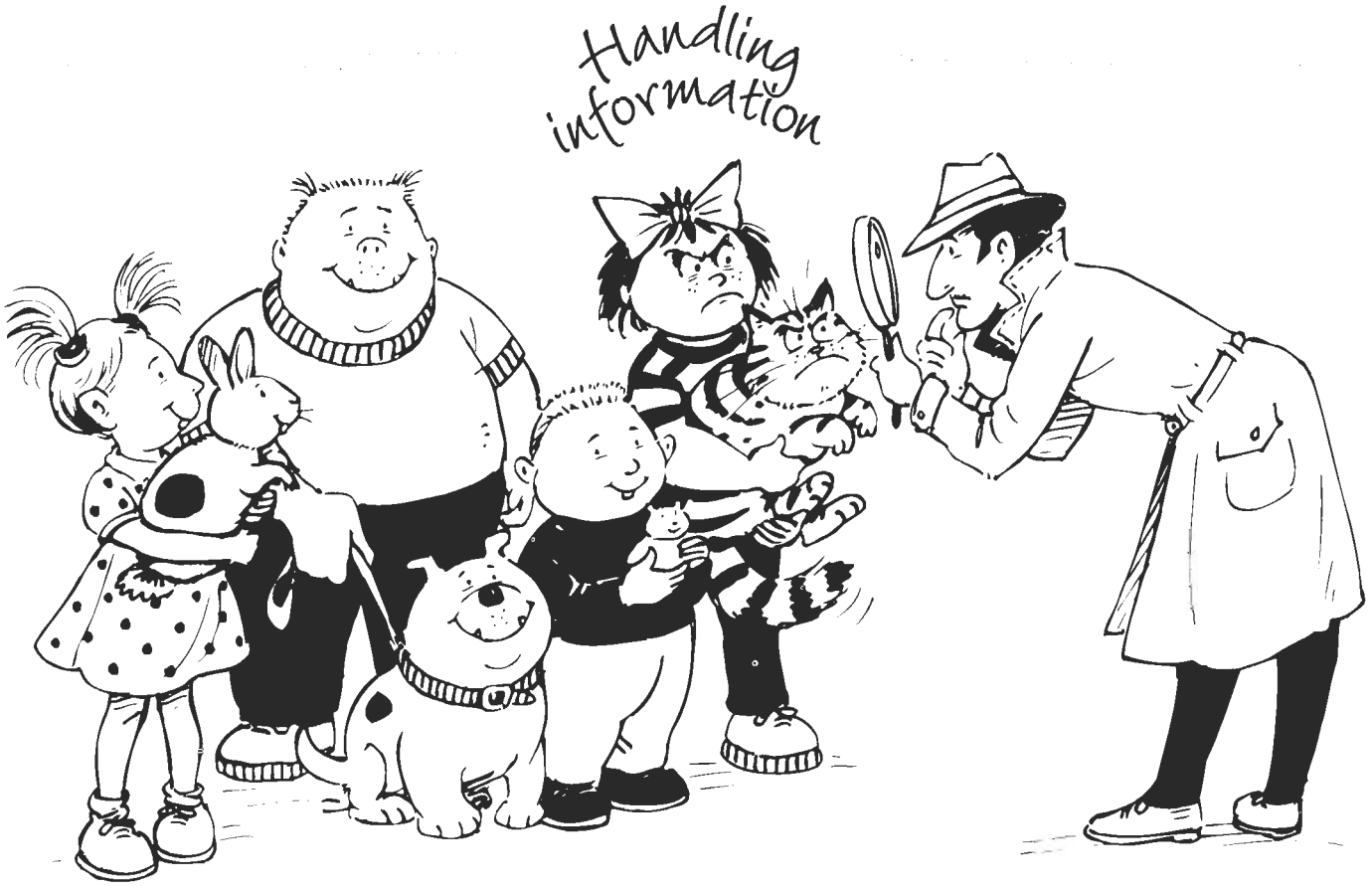


FINDING THE FACTS

To search a database to find out facts which allow conclusions to be drawn. To become familiar with search routines.

Pairs.

40 minutes at the computer; 15 minutes discussion/demonstration.

Previous skills/knowledge needed

The children should be familiar with using databases and understand the possibilities of investigating the facts that these contain.

Key background information

There is a wide range of computer databases available that offer different options for the handling of information stored within them. The simplest type works on the card index principle – a computerised version of the pupil card index system found in many school offices, or the patients' card index used in doctors' surgeries, for example. Each card contains an identical set of headings or fields which may contain words or numbers. A set of such cards can be sorted on any field; an alphabetical sort if the field contains words, or a numerical sort if the field is numeric. Certain card index databases will offer a search facility on any field. The user enters a search word (or search number) and the result is that all cards containing the searched word or value will come up to the top of the collection, or may even form a separate set of cards.

More advanced databases have a search facility known as a logical search. This allows you to search for several words at one time. Once you state the words you wish to search for, and which headings or fields they fall within (such as name, address, and so on), the software will pull out all the entries that contain these search words. This kind of search uses AND and OR. For example, if you wished to search for all cases of boys AND Year 4, this will produce all cases of boys who are in Year 4. If you search for boys OR Year 4, the result will be a larger group consisting of all boys and all Year 4 pupils. The logical search is a powerful tool and will need careful explanation to enable the children to grasp the concept. The database that you provide for this activity should allow them to use this facility. As more and more information becomes available on IT systems such as CD-ROM and the Internet, the development of IT searching skills is important.

Vocabulary

Sort, search, narrowed down search, search word, logical search, AND, OR.

Preparation

You will need to prepare at least two databases in advance for this activity. The first is based on photocopiable page 143 which provides a simple 'spreadsheet' style list of a group of children with a variety of different attributes. The children are asked to carry out a logical search to answer the list of questions on the photocopiable sheet, so you will need to prepare a database which contains the same details as the sheet. Make one copy of the photocopiable sheet for each child.

The second database can contain information on any subject, perhaps linked to your current topic. This will enable the children to practise logical searches once they have grasped the technique. There are many prepared databases

available commercially dealing with topics such as monarchs, British birds, volcanoes of the world, counties and so on and these can save you a lot of preparation time.

It will also be necessary to prepare some question sheets relating to the database to encourage the children to interact with it and use the search options. Choose the searches carefully to suit the children's abilities.

Resources needed

A computer, two pre-prepared databases, one with appropriate question sheets (see Preparation), a printer, paper, a small manual card index system (perhaps from the school office), photocopiable page 143.

What to do

Explain to the children that a computer database can be used to sort through large amounts of information. To help them understand how a simple database works and the processes it goes through when searching, show them a manual card index system – your school office may have one and this would provide an excellent example. Using the card index, demonstrate the information retrieval process by pulling out all the cards that contain a particular word and placing them at the front of the pile. Explain that this selection of cards is the result of a particular search. You may go further and narrow down the search by picking out cards from the result of your first search which contain a second search word. For example, the result of your first search could be 'all boys'. The second search could be 'Year 4', so the result would be 'all Year 4 boys'. Make sure the children understand the term 'narrowed down search'.

Now use photocopiable page 143 to introduce the children to the idea of logical searches done on computer databases. Give each child a copy of the sheet and provide a whole class demonstration of how to use the AND/OR search routine on the computer (see Key background information) to answer the questions on the sheet. Question 1 is an introductory question to get them used to the searching process. The search is a simple one not requiring the use of AND or OR. In question 2, the search is for blue AND cat, so the children must look for all cases of children with blue eyes and ensure that these children also have a cat. The logical operator OR means there are alternatives. In question 4, the search is for all those children who either have brown eyes or have a cat (this must include even the blue-eyed cat owners!). It may take some time for the children to understand logical searches so they will probably need plenty of support in answering the questions on the photocopiable sheet when they come to work at the computer.

Once the children are sufficiently familiar with using logical searches, they can go on to use the other database that you have prepared for them. Your question sheets (see Preparation) should encourage them to use search routines for interrogation purposes and to draw some conclusions.

Suggestion(s) for extension

As this exercise is largely steered by you through the work sheet activities, you have control over the complexity of the children's IT tasks. The more confident children may

be able to find answers to such questions as 'Is there any connection between average length of a bird and the number of eggs it lays?' 'Is there a connection between the density of population of a county and the type of local industry found there?'

Suggestion(s) for support

Again, you can offer the less confident children appropriate tasks by tailoring your question sheet to suit their ability. It may not be appropriate for them to carry out logical searches but they could establish facts by using simple searches based on keywords rather than the 'AND/OR' routine.

Assessment opportunities

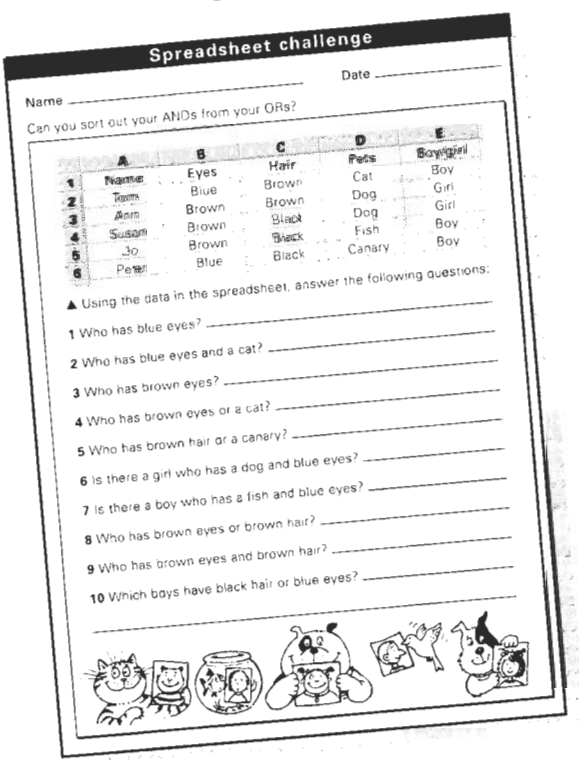
You will be able to assess how well the children use IT to analyse information held in a database and to interpret the plausibility of information in order to draw conclusions. Look to see how effectively they analyse the data through the use of search routines – are they skilled in the use of search tools? do they produce accurate results?

Display ideas

Printouts from databases usually require supplementing with colourful illustrations to ensure an attractive display. Much will depend on the context and substance of the database. Banner headlines such as 'Did you know that ...?' and 'Smaller birds lay more eggs – can you think why?' will help to make the display eye-catching.

Reference to photocopiable sheet

Photocopiable page 143 introduces the children to a logical research routine using AND/OR.



Spreadsheet challenge

Name _____ Date _____

Can you sort out your ANDs from your ORs?

	A	B	C	D	E
1	Name	Eyes	Hair	Pets	Boy/girl
2	Tom	Blue	Brown	Cat	Boy
3	Ann	Brown	Brown	Dog	Girl
4	Susan	Brown	Black	Dog	Girl
5	Jo	Brown	Black	Fish	Boy
6	Peter	Blue	Black	Canary	Boy

▲ Using the data in the spreadsheet, answer the following questions:

1 Who has blue eyes? _____

2 Who has blue eyes and a cat? _____

3 Who has brown eyes? _____

4 Who has brown eyes or a cat? _____

5 Who has brown hair or a canary? _____

6 Is there a girl who has a dog and blue eyes? _____

7 Is there a boy who has a fish and blue eyes? _____

8 Who has brown eyes or brown hair? _____

9 Who has brown eyes and brown hair? _____

10 Which boys have black hair or blue eyes? _____

Finding the facts, see page 78

Spreadsheet challenge

Name _____ Date _____

Can you sort out your ANDs from your ORs?

	A	B	C	D	E
1	Name	Eyes	Hair	Pets	Boy/girl
2	Tom	Blue	Brown	Cat	Boy
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_____