

## Lifestyles: 200 pupils in your computer!

The idea of getting data on to a computer-readable disc, so that a school could use its own Health Related Behaviour Questionnaire results as a teaching resource, first became an attractive possibility back in 1985, when the BBC computer reigned supreme in schools. However, investigations by our adviser George Foot (University of Exeter Computer Unit) revealed considerable problems in converting the data as stored on the mainframe computer into a form readable by a BBC machine.

The challenge was deferred but not forgotten, and by 1990 technological progress encouraged us to return to it, helped by the GRASS analysis package which was being used in many schools. Anne Wise was appointed as a link between the Unit and school survey users, and with her previous experience of GRASS she, David Regis and George Foot succeeded in producing a database containing the responses of 200 mixed year 10 pupils to 18 of the questions in the Health Related Behaviour Questionnaire.

This package was tried out on some local teachers. They were impressed with it as a classroom resource, but (of course!) some had different BBC analysis packages — Quest and Key — while others had different machines in their school, often the Archimedes, which used Key+, or else PCs. This extended the challenge to make our data compatible with software for these machines, and by the middle of 1992 we felt confident that *Lifestyles 1*, as we called the database, could be run on almost anything!

Although many of the PC databases can handle up to 200 variables, we stayed with our original selection of 18 so that the sample could be used in any machine. This number permits a wide range of behaviours to be included, without overwhelming the user with too much choice. Other *Lifestyles* selections will probably follow later.

What is inside *Lifestyles 1*? The sample consists of 100 boys and 100 girls, all in year 10, taken from three schools that completed version 15 of the Health Related Behaviour Questionnaire in 1991. The idea of mixing three schools together was to try to derive a more 'average' sample, although we make no claim that this is a nationally representative sample. Part of the interest of this database, as with any data representing a real community, is its 'individuality'.

### THE 18 LIFESTYLES 1 VARIABLES

What sex are you?  
Total number of alcohol units drunk last week.  
Did you drink alcohol at home last week?  
If you ever drink alcohol at home, do your parents know?  
With which adult do you get on best?  
Have you a steady boyfriend or girlfriend at the moment?  
When did you last go to a disco or party?  
Total self-esteem score.  
Total locus of control score.  
Do you have a regular paid job during term-time?  
Did you spend any money on alcohol last week?  
What national daily paper is available in your home?  
Whereabouts do you live?  
How fit do you think you are?  
When choosing what to eat, do you consider your health?  
How many cigarettes did you smoke last week?  
Do you wash your hands after visiting the lavatory?  
How many hours' homework did you do last night?

The 18 variables within the data are shown in the box.

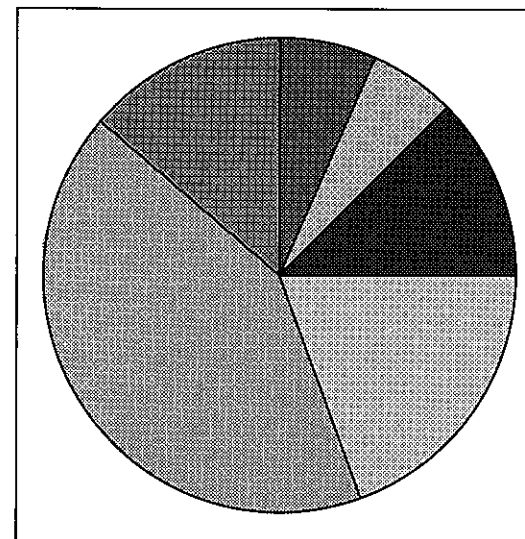
The aim of this resource is to give the pupils practice in presenting data in numerical or graphical form, using it as a basis for mathematical analysis, investigating links between health-related behaviours, and making further predictions. It intrigues pupils because it is 'real' data about people like themselves: it has relevance right across the curriculum using Information Technology as a cross-curricular skill; and it enhances the status of health education within the school.

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This table shows the range of hardware and software being used in the 270 secondary schools that have so far purchased copies of *Lifestyles 1* for use by staff and pupils. The order of popularity of hardware in this sample is: Archimedes (92), IBM-PC (72), RM Nimbus (70), BBC (30) and Macintosh (6). The *Lifestyles* database has been successfully modified to run on all the listed software programs.

	Head of PSE	Head of IT
Archimedes	26	66
Data King	0	2
DataPlus	2	2
GRASS	2	5
Key+	14	26
Pinpoint	4	14
Pipedream	1	9
Quest	2	5
Squirrel	0	3
System Delta+	1	0
BBC	10	20
Enform (network)	0	1
GRASS	5	7
Key	3	7
Quest	2	5
IBM-PC	18	54
DATEASE	1	1
dBASE	0	6
Excel	1	4
Key+	2	0
LOTUS 1-2-3	1	0
MS-Works	7	24
Paradox	0	1
Qwest/Oriel	4	8
Superbase	2	10
Macintosh	2	4
Claris-Works	1	1
MS-Works	1	3
RM Nimbus	21	49
DATEASE	1	6
Excel	2	5
GRASS	10	20
Key	3	7
Logistix	0	1
MS-Works	1	2
Qwest/Oriel	0	1
Superbase	4	7
TOTALS	77	193

This pie-chart showing where the *Lifestyles 1* year 10 boys live was produced using the GRASS program on an Archimedes computer. Clockwise from the top the divisions represent city centre, city suburb, town centre, town suburb, village, and outside a village or town.



In particular, we have found that the Health Related Behaviour Questionnaire in conjunction with the *Lifestyles 1* data disc does serve the Mathematics Attainment Target 5 (Handling data) rather well (see over). In addition, through the use of this resource, health education can be seen to support the development of children's Information Technology capability by teaching them how to use a database.

### Information Technology

Within the National Curriculum and within the three cross-curricular elements (dimensions, themes and skills), Information Technology exists as one of the six cross-curricular skills.

The approach taken with the skills is that they are transferable, are chiefly independent of content, and can be developed in different contexts across the whole curriculum.

The National Curriculum makes it clear that the main purpose of Information Technology in schools is to support and extend the teaching and learning of other subjects, and that pupils should learn about IT and develop their capability through using it in their work and reflecting on their experiences.

One of the aims of IT in schools includes *Enriching and extending learning*, and it is commonly described as a 'tool'. As a tool in the curriculum, IT performs a number of functions, two of which are particularly served by the use of databases:

*The gathering, organisation, analysis and retrieval of information;*

*The exploration of hypotheses.*

These two aspects can be seen to link directly within one of the five strands of IT Capability — that of handling information. In the words of the NCC's non-statutory guidance:

- Pupils' information-handling activities range from early exercises of classifying and sorting familiar objects to structuring and creating their own databases.
- Through experience, pupils can develop their skills of enquiry and their techniques for searching and refining.
- Through the use and experience of data-handling, pupils can become more aware of different kinds of information, such as *Quantitative* (numbers, values and factual information) and *Qualitative* (information based on judgments).

*Deferred but not forgotten*

*Real data about real people*

A school's own health related behaviour data can add a relevant dimension to GCSE work across the curriculum. Its application to work in mathematics is obvious from this summary of selected Attainment Target 5 requirements.

### **Lifestyles in the mathematics curriculum**

#### **LEVEL 3: Access information in a simple database.**

*Programme of study:* Entering data into a simple computer database and using it to find answers to simple questions.

#### **LEVEL 4(a): Interrogate and interpret data in a computer database.**

*Programme of study:* Inserting, interrogating and interpreting data in a computer database.

#### **LEVEL 4(b): Conduct a survey on an issue of their choice.**

*Programme of study:* Specifying an issue for which data are needed.

#### **LEVEL 5(a): Use a computer database to draw conclusions.**

*Programme of study:* Inserting and interpreting data in a computer database; drawing conclusions.

#### **LEVEL 5(b): Interpret statistical diagrams.**

*Programme of study:* Constructing and interpreting pie charts from a collection of data with a few variables.

*The pupils' experience with using Health Related Behaviour data can be exploited to advantage in the following levels:*

#### **LEVEL 6(a): Design and use a questionnaire to survey opinion.**

*Programme of study:* Designing and using a questionnaire to survey opinion (taking account of bias); collating and analysing results.

#### **LEVEL 7(a): Organise and analyse data.**

*Programme of study:* Specifying a simple hypothesis; designing and using an appropriate questionnaire or method to test it; collecting and analysing results to see whether a hypothesis is valid.

#### **LEVEL 8: Design and use a questionnaire or experiment to test a hypothesis.**

*Programme of study:* Designing and using a questionnaire with multiple responses or an experiment with several variables; collating and analysing results to test a hypothesis.

### **Computerware for Lifestyles**

Last October we circulated two leaflets about *Lifestyles 1* to all secondary schools in the UK. One was addressed to the Information Technology specialist, the other to the head of PSE. We kept a note of relevant information derived from the returned order slips, which is presented in the table on page 7. This may be interesting to school staff who would like to know what hardware and software is currently being used in secondary schools. The fact that over twice as many databases are apparently being ordered by IT specialists than by PSE staff could indicate an appreciation of its potential across the curriculum.

The accompanying manual is designed to be as 'universal' as possible. It presents several exercises to carry out with the data — these contain 'worked examples' to check accuracy, but are also meant to show how the resource can be used by pupils to generate hypotheses about the links between health-related behaviours,

which lead in turn to prediction and verification.

### **A school's own database**

A further development of our computer database service is offering schools their own survey data for interrogation. Again a set of 18 variables is available, but there is a choice of combinations of variables under the following headings.

<i>General</i>	<i>Home</i>
<i>Alcohol</i>	<i>Money</i>
<i>Diet</i>	<i>Social &amp; Personal</i>
<i>Drugs</i>	<i>Sport</i>
<i>Health Services</i>	<i>Your own selection</i>

To prevent individuals with known and distinctive characteristics from being identified inside the data, certain variables are suppressed.

The price for the standard *Lifestyles 1* pack is £10 (cash with order) or £15 (sent with invoice). For further information, and for details about a database from your own school's survey, please contact Anne Wise (0392 264728).