Introduction for teachers

This pack is designed to guide students through the process of producing a well-structured GCSE ICT project. It gives guidance on selecting the project and covers the stages of identification, analysis, design, validation, implementation, testing and evaluation. Mind maps for the first three stages are provided. (If you are interested in these, more information can be found at http://www.murge.com/.)

The pack also contains an example of a worked GCSE project as a basis for students' own work (pages 41 to 56). This is based on a data handling scenario, as this seems to enable students to obtain high grades with most examination boards. This also provides prompts for students to add notes and ideas about their own project.

It is suggested that the model project be used a section at a time with students. If (and when) you are satisfied with the students' work so far, they can then move on to the next section. This will allow students to work at their own pace, but also benefit from your guidance.

This pack is the first in the *Success at KS4 ICT* series and is designed to accompany *Pack 2: Non-Exam Candidates*, also available from Pearson Publishing.

Making your project successful

Once you have chosen your project, there are a number of simple ways in which you can make it successful. These are discussed below.

Planning

Do not be tempted to jump right in. Careful and methodical planning will save no end of time later. Your project can be split into the following stages:

- Identification
- Analysis
- Design
- Validation
- Implementation
- Testing
- Evaluation.

Guidance boxes and prompts for each of these stages are provided on pages 10 to 40. Completion of these will provide evidence of this for your teacher, who will mark the project initially, and for the moderator, who may request to see your project at a later stage.

Discussion

Do not be afraid to discuss your work with anyone you think can help you. Often, students have ideas for projects which are either not substantial enough or, on the other hand, may become enormous tasks which cannot be completed in the given time.

Discussing your ideas with students who have already completed their projects can be an enormous help in avoiding pitfalls. Remember, the first idea is not necessarily the best.

Preparation

Gather together all the materials you may need before you start. If you have an opportunity to see a working system which mirrors yours then this can be very useful.

Dedication

Completing your project can be very hard work, particularly if you are completing project work for other subjects too. It is therefore a good idea to set aside regular work times when you know you will have access to a computer.

Implementation

It is now time to set up your system. You should use your design to make sure that you do all the things you said you were going to do. You may need to set up several different parts of the system at once. Some may need to be set up before others. For example, you cannot print out information from a database until the data is in the database.

Make a list of all the things you need to do to set up your system.

Now put them into the order in which you need to do them.

Example GCSE project

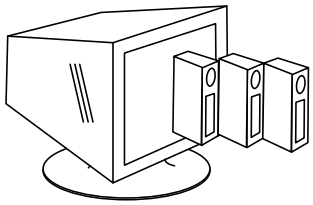
This section provides a worked example of a GCSE project. An example of the process that you would go through has been provided together with space for your own thoughts and ideas. It should be noted that although the example in this pack is written using 'we' to make it more inclusive, the report that you produce to accompany and support your project work can be written in the third person (so that you avoid using the pronouns 'I', 'we' and 'you').

Background

Your uncle owns a business which sells electrical items by mail order. Customers can place orders by telephone, fax, email, letter or by calling into the shop in person.

At present, your uncle keeps all his records on paper. However, he has recently bought a computer, and wants you to design a way of replacing the paper-based system using ICT.

Some of the tasks he does using a manual system include:



- Holding all stock records in a stock book. Each time he sells an item, he has to alter the number of items on stock and recalculate the value of his stock using a calculator.
- Sending letters and information about special offers to previous customers. These are photocopies of a handwritten original. He keeps his list of customers in an address book which is not in any particular order. He would like to be able to make these letters more personal.
- Calculating bills. He uses paper and a pen, again with a calculator, to work out customer bills, including how much VAT to charge. VAT is currently charged at 17.5%.

Briefly describe the background of your own project.

Design

The data which is stored in our database needs to be well structured. After speaking to some experts in the field that our project covers, we are able to select the data which is relevant to our project. We need to avoid data which is not directly relevant. For example, it is tempting to include fields such as 'Date of birth', 'Gender', 'Occupation', 'Marital status' or 'Nationality'. However, none of these have any relevance to the processing we need to do. Additionally, they would probably contravene the Data Protection Act, which states that data has to be relevant to the processing needs.

When we have decided on our fields, they need to be transferred to a layout which is easy to fill in. Below is an example of a data capture form which shows the fields that would be sufficient to undertake the tasks in this project:

Data capture form

Date of transaction.....

Customer's first name.....

Customer's last name.....

House number.....

Name of road.....

Second line of their address.....

Third line of their address.....

Fourth line of their address.....

Postcode.....

Telephone number.....

Fax number.....

Email address.....

Item(s) bought last.....

Item(s) cost.....

Item(s) bought before.....

Convenient delivery time.....

Credit card number.....

Name on credit card.....

Expiry date.....