

## Introduction

Homework is high on the Government's list of educational priorities. In ICT the setting of homework has traditionally been difficult. Whilst it has always been possible to set homework, it has often been difficult to make it relevant to skills taught and the National Curriculum.

This is the second in a series of three packs providing ready to use, purposeful homeworks for ICT. This pack for Year 8 includes 29 homeworks covering the four strands of ICT. There are a variety of tasks, which include crosswords and wordsearches as well as materials which require more organisation on the part of the student. As with all homework, it needs to be relevant and appropriate, so the order in the pack can be varied to suit. Some of the activities lend themselves to a practical follow-up, such as the spreadsheet and database exercises.

We have tried to make each task as easy to assess as possible, but you may wish to consider the following suggestion for some of them. We trialled these with colleagues and gave them a photocopied overhead transparency of a completed worksheet (for the wordsearches, the crosswords, etc) which they used as an overlay for each pupil's work. This made checking an easier task.

We have provided answers where relevant, but have not given instructions about awarding marks due to the varying natures of individual school's marking policies. The summary on page 62 indicates the level for each homework, ie either foundation or higher.

We hope that this pack will lighten your load as far as homeworks are concerned, we know that it has for us!

David Goddard and Chris Guy  
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Other titles in this series:

- *KS3 ICT Homework Pack 1: Year 7*
- *KS3 ICT Homework Pack 3: Year 9*

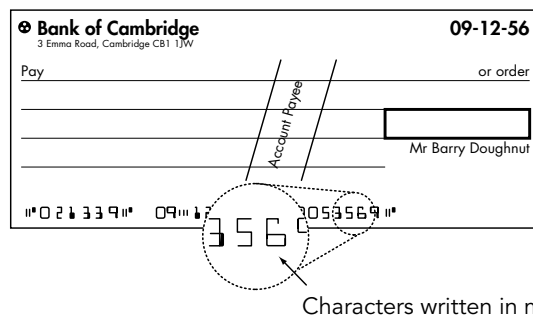
Other titles by the same authors:

- *KS3 ICT Activities Pack 1: Year 7*
- *KS3 ICT Activities Pack 2: Year 8*
- *KS3 ICT Activities Pack 3: Year 9*
- *Assessing KS3 ICT*
- *Supporting KS3 ICT*

## Input devices 6

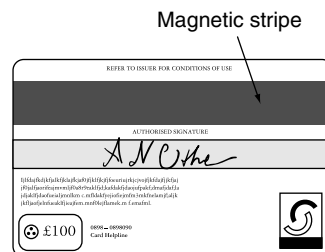
### Magnetic ink character recognition (MICR)

This method of inputting data into a computer is used on cheques. Most cheques are pre-printed with customer and bank details, using this ink. The main reasons for the use of magnetic ink are security and they can still be read if the number is scribbled over. They can also be read very quickly by machines – as many as 3000 cheques per minute! Details such as the date and the amount are added in magnetic ink later.



### Magnetic stripes

These are lengths of thin magnetic tape which are fixed to a plastic card. They are for use in ATMs (automatic teller machines – cashpoint machines), identity passes and store loyalty cards. The information on these stripes can be updated easily, for example, to prevent a stolen ID card from being allowed entry, or in the case of an ATM card, to imprint it with the date and time it was last used.



As an additional security device, many of these cards require the user to enter a PIN (personal identity number), usually using a small keypad.

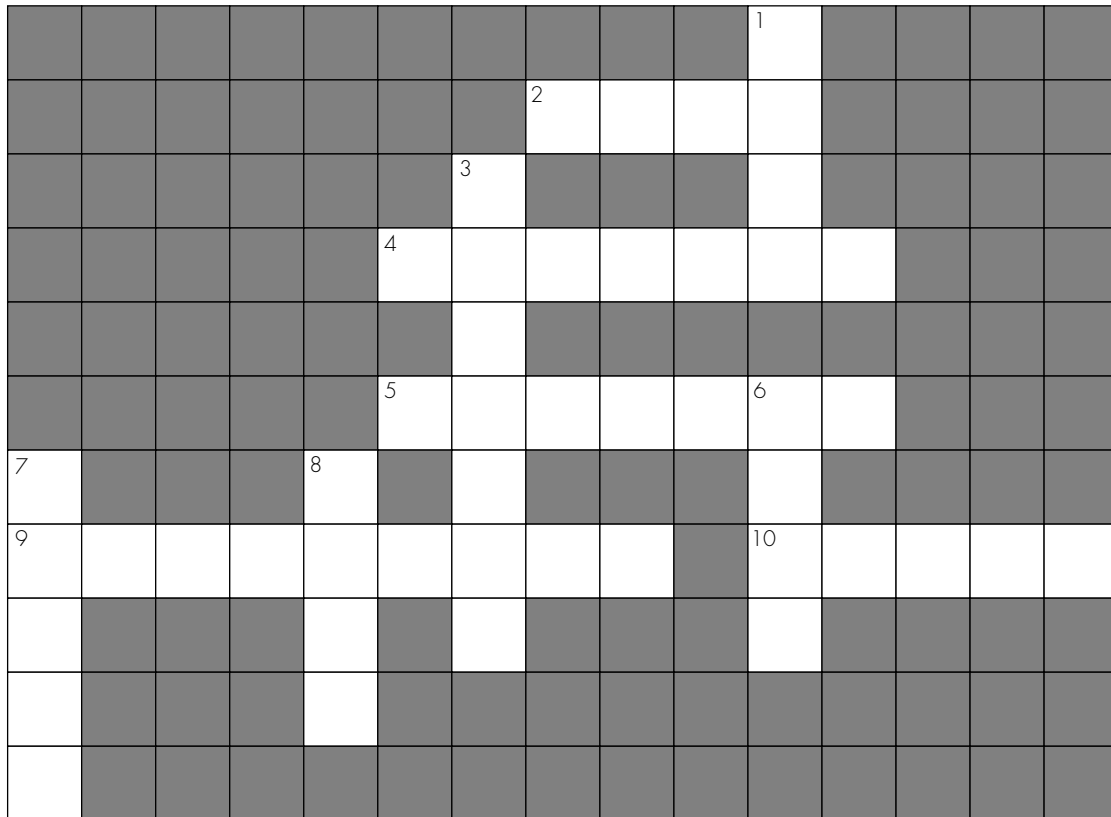
### Voice

Computers are now able to use voice accurately as an input. There are uses such as recognition of users and word processors which will convert the user's spoken words into text. This is very useful for people who cannot use keyboards easily, such as poor readers, disabled users or people who are unable to keyboard with confidence. The computer needs to be trained to recognise the user's speech patterns. Input is by a microphone and uses a sound card.

### Task

Write a short story about how one or more of these devices are used by someone to act as a security device. How might they help to defeat criminals?

## Spreadsheet crossword



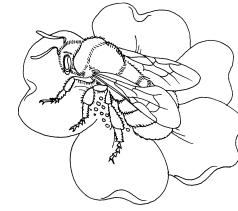
### Across

- 2 When you have finished you should do this.
- 4 To make the spreadsheet do some maths you need one.
- 5 Spreadsheets often contain a lot of these.
- 9 Every box on the spreadsheet can be identified by this.
- 10 If the space is not big enough, you would change this.

### Down

- 1 One of the boxes on the spreadsheet is called.
- 3 These go up and down the spreadsheet.
- 6 These go across the spreadsheet.
- 7 A spreadsheet can make one of these quickly.
- 8 You start the spreadsheet with an empty one of these.

## A club database



Spifton Beekeepers have set up a database to store information about their members. Here is the database they have set up:

Title	Surname	Forename	Add1	Add2	Postcode	Status	Type	Cost
Mr P	Edwards	Peter	297 Bromsgrove Road	Spifton	SP12 9JW	PAID	Jun. Member	£7.00
Mr A	Harter	Adrian	6 Tree Road	Spifton	SP10 3RJ	PAID	F. mem	£15.00
Mr J	Hardson	John	38 Hungary Ave	Spifton	SP1 3JW	PAID	FULL	£15.00
Mr S	Jefferies	Steve	11 Vicarage Road	Spifton	SP3 5TW	UNPAID	FULL	£15.00
Mr N	Donald	Neil	12 West Rd	Spifton	SP2 9AW	PAID	JUNIOR	£7.00
Mr J	Jones	John	3 South Road	Spifton	SP13 9HW	PAID	FULL	£15.00
Mr A	Baker	Adam	7 Court Road	Spifton	SP32 9WS	UNPAID	J. mem	£7.00
Mrs S	Bishop	Susan	1 Sand Road	Spifton	SP14 9PL	PAID	Member Full	£15.00
Mr M	Prichard	Martin	4 Grange Rd	Spifton	SP12 9FR	PAID	FULL	£15.00
Mrs B	Silver	Rebecca	15 Hearne Drive	Spifton	SP12 3RE	PAID	FULL	£15.00

The database is used for several things. The treasurer uses it to send reminders to members when their subscription is due for payment. John, the secretary, uses it to contact members and send them the newsletter every month.

### Questions

1 Peter would like to use the database to contact members by telephone. Would the existing database be able to help him?

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2 How could he change the database to be of use to him?

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3 Next week the club is organising an event for junior members. Peter has been trying to print out a list of junior members for the event, but every time he tries the list is not complete. Some people who he knows are junior members are missing from the printout. To make the list, John gave the database this query command: FIND TYPE = "JUNIOR". Look at the database. Why has his search failed to give Peter the answer he wanted?

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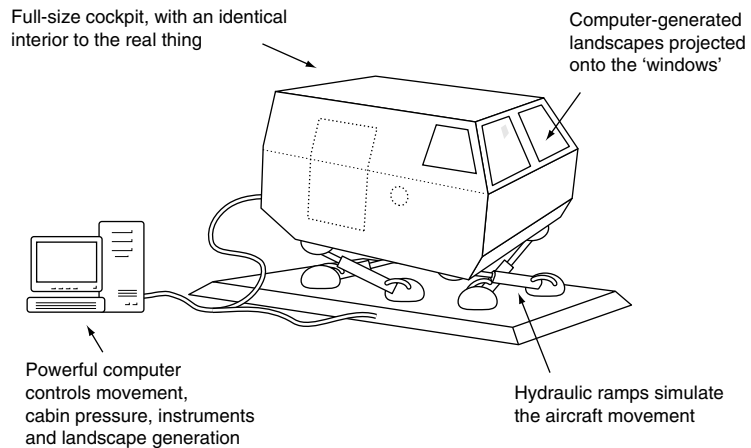
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## Virtual reality and simulation

Virtual reality (VR) is becoming an increasingly important part of Information and Communication Technology. VR puts the user in a place where he or she is not, but it is realistic enough for the user to behave as if they were in that place.

Simulations are a use of computers which enable computer users to put ideas to the test, without the nasty repercussions which could happen.

Pilots are trained using simulators. They sit in a life-sized cockpit (see right), and use the same controls which are to be found on a particular aircraft. There is



scenery which is projected around the cockpit, so that it would seem to be real – in effect, the pilot can be anywhere in the world, and can be presented with any situation that the aircraft may encounter. The simulator responds in a similar way to a real aircraft: if the pilot banks left, the simulator tilts to the left. If the pilot pushes forward on the joy-stick, the simulator will pitch nose down, and so on. Even very realistic vibrations can be duplicated, so that the pilot can safely experience these.

Aircraft simulators are so realistic these days that pilots can actually be fully trained to fly without leaving the ground. To use a real aircraft for this could be disastrous, as crashes prove to be very expensive both in terms of life and equipment. The pilots of spacecraft, such as the Shuttle, are also trained using simulators.

Another use for VR is in the world of medicine. Doctors can wear special helmets and gloves which produce the sensations of touch, in order to learn new routines like operations. They can see, hear and feel everything they would in a real operation, and can practise as much as they like without any risk to a patient. Often, simulators are used for situations which would be dangerous, such as inside the workings of nuclear power stations, or for deep sea operations, as in the oil industry.

Fire fighters use simulations to see how a fire would spread inside a new design of building. They can then make recommendations as to improvements for fire safety.

VR is also entering the games market where people can feel as though they can pick items up and touch things, using helmets and gloves.

### Task

Over the page, design a scene that you think would be exciting in a VR game. Remember to include items for people to touch and pick up.