

ICT Policy [March 2003]

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What is ICT?

Information and Communication Technology is concerned with the handling of electronic information [which can consist of text, numbers images and sounds] and involves creating, collecting, holding, processing, presenting and communicating this information. Information can be manipulated with, for example, computers, video recorders, photocopiers, and tape recorders.

ICT capability refers to a child's ability to apply their knowledge and understanding of IT in a variety of contexts. ICT should be planned, delivered and assessed on a cross-curricular basis in appropriate contexts and as a tool to enhance and enrich the learning process.

Aims

Children should use ICT to:

- Communicate and handle information
- Explore, evaluate, design and develop models of real and imaginary situations
- Measure and control movement and physical variables [temperature, light...]
- Make informed judgements about ICT applications and their effect on individuals and society

In addition, teaching of IT should:

- Enable children to become familiar with ICT in many contexts
- Broaden children's understanding of the effects of the use of ICT
- Provide opportunities for them to decide when it is appropriate to use ICT
- Encourage the flexibility needed for children to adjust to and take advantage of future developments in ICT

Objectives

Children will be able to:

- Handle ICT equipment and software with confidence
- Use ICT to manipulate and communicate with writing, images and sounds to convey an effective message
- Store, retrieve and present information to enhance interpretation and analysis
- Recognise the role of ICT in control of equipment used in daily life
- Talk about their use of ICT and its use in real situations

Key Personnel

The Head – The overall responsibility for the use of ICT rests with the head. In consultation with staff the head should:

- Determine the ways ICT should support, enrich and extend the curriculum
- Decide the provision and allocation of resources
- Decide ways in which developments can be assessed and records maintained
- Ensure ICT is used in a way to achieve the aims and objectives of the school
- Ensure there is an ICT policy and identify an ICT coordinator

The ICT coordinator – The ICT coordinator should:

- Promote the integration of ICT within appropriate teaching and learning activities, develop and monitor the contributions of subjects to its cross-curricular use
 - Manage the provision and deployment of resources and give guidance on classroom organisation
 - Support and encourage colleagues and act a contact point between the school and support agencies
 - Provide limited technical expertise
 - Coordinate the evaluation and review of the ICT policy
- The coordinator is available to show staff how to use programs and how to set up programs and equipment, and to advise on alternative or extension activities, resources and assessment. **Subject coordinators and Key Stage managers should keep themselves informed of programs useful to their own curriculum areas and age groups.**

The class teacher – the teacher should:

- Plan appropriate ICT activities for their pupils
- Assist in the monitoring and recording of pupil progress in ICT

Assessment

The QCA Scheme of work identifies objectives that children should achieve for each unit that can be used as a basis for assessment.

Attached is a list of skills showing progression with respect to National Curriculum levels. Assessment should be carried out for the yearly report and an estimate of the child's National Curriculum level recorded in its individual record. It is intended that the criteria for the LEA's copper, bronze and silver IT certificates will be used to assess progress in ICT in key Stage 2. Checklists of the criteria are attached.

Health and Safety

The main danger is the danger from electricity. There is also the danger of tripping over leads and knocking monitors over. Computers should be positioned near sockets so that they and their leads are close to walls. Inform the IT coordinator of any faulty equipment and do not use. Remind children regularly about the dangers of electricity.

Grouping and Differentiation In ICT

Group size -If using adventure programs that involve discussion and problem-solving then possibly up to four children may be able to use a computer. In general two is the optimum. A major problem with using a single computer in class is the time taken to carry out simple tasks and the need for supervision. Whole-class introductions to a program are possible; supply 'crib sheets' with important instructions on them; use adult or child volunteers to help.

Group structure - pairing of able with weak children is often desirable to enable groups to work semi-independently.

Differentiation - it may be necessary to supervise weak children closely to give repeated explanation and more direction [instead of 'allowing' them to come up with their own ideas]. Template documents can enable weak readers or writers to manage. If children are working in small groups anyway, e.g. with a teacher's aide, children with special needs can successfully use simple reinforcement programs in maths or English. Many programs can be set at different ability levels, although check that the level has the appropriate tools available for the task.

Computer Suite – each class has timetabled time in the computer suite. There are 15 computers available, with another 4 computers in the library area just outside. Depending on the activity, it may still be more useful to have children in pairs or threes for mutual support, and to minimise the number of computers that have to be supervised. There is space for children to carry out tasks away from the computers. Some time is available in the suite that is not timetabled, allowing classes to use it at other times as the opportunity arises – check with other teachers.

Types of IT activity

Communication

At Key Stage 1 children should generate and communicate their ideas using text, tables, pictures and sound (but not all together).

At Key Stage 2 there is more emphasis on combining forms of information and the idea of presentation for an audience.

Data handling

At Key Stage 1 children could enter, sort and classify information into a prepared database with but will need adult help. Searches should be simple, one variable, e.g. "all children with red hair".

At Key Stage 2 children should collect their information more independently and prepare it for entry into a database. They should understand the effects of incorrect entries, and towards the end of KS2 do more complex searches. They should be able to search databases, including encyclopedias and the Internet.

Control

At Key Stage 1 children should learn to give direct instructions, that is one instruction at a time. For the Roamer this means typing in F3, pressing GO, then typing in the next instruction, and so on. At Key Stage 2 children should start to program the Roamer or in Logo, that is give a list of instructions all at once.

At Key Stage 2 children should use IT equipment to monitor external events. These can be single events, e.g. setting off a pressure switch using Control-it, or continuous monitoring using the temperature and light sensors with Number Magic.

Control also includes use of other equipment e.g. tape recorders.

Modelling

Even word-processing and art programs are in part modelling programs in the sense that they enable a person to make non-permanent changes and see what happens.

At Key Stage 1 children should use these and adventure-type programs to satisfy the modelling aspect of IT

At Key Stage 2 as well as these children should use simulations. At present we have an adventure game about life in a forest which includes simulations of experiments.

Simulations of 'calculation' situations, for example shopping lists, can be modelled using spreadsheets, and simulations of using space, for example furniture in a room, can be investigated using drawing programs. Ask the ICT coordinator for advice.

Evaluating ICT and understanding its use in the Wider World

Children should be taught to critically compare the use of IT with other methods e.g.

Colour Magic versus pencil crayons, spreadsheet versus calculator etc. Teachers should use opportunities to discuss how ICT is used in the wider world.

Using ICT across the curriculum

Literacy

Speaking and Listening

The use of a computer can often encourage groups of children to work purposefully, particularly adventure programs where puzzles have to be solved. Children can learn to communicate their skills on the computer to other children. Some programs actually speak instructions [Ancient Egyptians, Romans...]

Reading

Most computer activities involve children reading – even if it is their own writing. Adventure and modelling programs [Patch, Ancient Egyptians...] often involve a lot of reading. My World can be used to match words and pictures. Information programs like Children's Encyclopedia can find 'keywords', useful for showing children how to skim and scan conventional books.

The reading abilities of children have to be remembered when choosing programs to use.

Writing

Children can write using word-processing programs. They will need direct teaching of some aspects of the keyboard – space bar, return, delete, shift, arrow keys [or mouse]. For all but the simplest pieces of work, the conventions of spaces after punctuation will need to be taught. Times to use the computers for writing could be:

Where a neat accurate piece of writing is needed – writing for display, letters to people outside school...- children can correct mistakes without having to begin again, printing is clear, misspelt words can be checked and corrected, and often grammar can also be checked and corrected. Talking First Word can 'speak' the writing so that children can tell if it makes sense.

Where writing might be best in a particular format – writing a front page of a newspaper, signs and labels for walls and books...- Children will need to be shown how to change the size and style of writing.

Where the creative process leads to frequent changes – writing poems in a group...

Writing on a computer can be slow because of the time needed to find letters on a keyboard [but practice improves speed] and children can get fed up.

Passages should be short. An alternative for longer pieces of writing is for an adult to type in from dictation or from a rough draft and have the child edit, change font etc.

Numeracy

Shape and Space

Both the Roamer and Logo can be used to reinforce concepts of angle and shape. Roamer can be used over both key stages. Logo needs basic knowledge of the keyboard and for use away from support is suitable for Key Stage 2. Both can cover angle from the idea of right and left up to degrees. Roamer normally moves in ruler-lengths [30cm] but can be pre-programmed to move in different 'steps' – useful for practice in estimating length. Activities can include drawing shapes, negotiating mazes, and delivering messages. Children need to be taught basic instructions. For logo there is a student workbook that children can follow provided they can read well. Both the roamer and logo are suitable for group work.

There can be a development from giving single instructions to the roamer or the turtle to giving a sequence of instructions. Children can practise giving each other sequences of instructions to test their 'programs' before using the equipment.

There is a program that tests children's understanding of angle among the Maths Programs collection.

Number

Mental arithmetic skills can be practised using e.g. Numbermunch and Heinemann Maths. The maths Programs collection has opportunities for mental calculation at a range of levels.

Data handling

Using programs like Number Magic and Information Workshop children can sort information and draw graphs from sets of data they have collected. Depending on the program, children may need to be shown how to select by highlighting. Starting graph is a quick way of drawing bar graphs.

Computer data handling can be useful when:

Graphs have difficult scales or need to be neat – for display... - usually programs remind children to choose axis labels and titles. Sometimes scales would otherwise be difficult for some children. Using computers can give children a quality graph, which reminds them how scales work.

Data needs to be sorted in different ways – for example where more than one attribute had been collected, like a class's height and weight, the data can be sorted by weight then by height without tedious rewriting, and groups can be picked out quickly.

Data is collected over a period or there is a lot of information – new records can be inserted easily, graphs can be displayed before all the information is available, say for a plant-growing experiment.

Using data-handling programs usually needs a data template to be pre-prepared. Teachers should ask for help in how to use programs.

Investigation skills

There are some adventure programs which encourage experiment and investigation, for example, Crystal Rainforest [a logo based adventure]. They require children to solve mathematical puzzles to achieve a goal – rescue the princess, free the children... They encourage collaboration. There are computer versions of card and other games. These often involve logical thinking and are also useful in discussing 'How does the computer decide what to do?'

Science

Investigation

Computers can show the results of experiments - see maths, data-handling. Let's Investigate –Science is an adventure based around a wood, which requires children to carry out simulated experiments and draw conclusions from the results. It is suitable for upper Key Stage 2. Experiments can be monitored using temperature and light sensors

Children using CD rom based encyclopedias or the Internet can obtain information on many aspects of science

Plants and Animals

Surf into Science has information on animals, plants and growth for KS1.

Forces and Energy

The Control-It box for the BBC computer contains various switches, which can be used away from the computer to demonstrate how they work. Lights and switches can be incorporated in models and controlled by computer using the box.

Programming is similar to logo.

Earth in Space

There is an excellent video in the Children's Encyclopedia that shows the movements of the earth, sun and moon. There is a simulation called Hplanet in Shared Work that enables children to see the effect of the Earth's tilt on summer and winter daylength.

Technology

Designing

Art and drawing programs can be used:

To make a sketch of a product to be made. This can be useful if the product is basically made of straight lines and rectangles – teach how to use the line and rectangle tools.

To produce a decoration or logo to be applied to a product – for example a cereal packet to hold home-made muesli, a flag, a sail...The advantage of using the computer is that the decoration can be drawn and then stretched or shrunk to any precise size before printing, alterations are easy without having to start again, and more than one copy can be printed.

Making

Printed articles such as books and newspapers can be 'made' on the computer. Animations and slideshows can be made using Powerpoint and compared for example with flick books. Animations are suitable for children from Year 3 upwards.

Disassembly

Encyclopedias have pictures and animations to show the workings of common objects – engines, telephones, levers...

Control

See science above. Various ideas for Lego models controlled by Control-It are in a folder in the teachers' resource room. They are more suitable for demonstration and modification than being built by most children.

History

There are adventure programs for the topics of Romans, Egyptians, and Cabot. They require some reading but their use is intuitive so that they do not need a lot of adult support. They cover many aspects of everyday life. There is a set of worksheets for each program. Pictures of objects in the programs can be printed off for children's research but there is no search facility. Encyclopedia CD-ROMs and the Internet have pictures and writing on history topics, although often the writing is suitable only for the older children. Children need to be taught how to search for keywords.

Geography

Children can use the Internet to find information about almost any aspect. Streetmaps and OS maps of the local area are available on line. The Roamer can be used to reinforce direction skills.

Encyclopedias have pictures, videos and writing on features such as volcanoes, famous buildings, rivers...

Music

The Musical Instruments CD-ROM contains information on hundreds of musical instruments with pictures and sounds. It is easy to use for Key Stage 2 children.

MusicExplorer lets children make up tunes using simplified notation. Suitable for Year 1 upward. Sound recorder lets children record music on the computer, and computers will play CDs and music files.

Art

Children can use Colour Magic to draw and print pictures. It provides clip art for pasting into pictures. Children might use painting programs when:

The picture is going to be manipulated – pictures can be resized, printed more than once, designs can be made into wallpaper patterns or reflected and rotated...Pictures can be incorporated into posters or other writing.

They are exploring the program as a new medium for painting – computer pictures have their own colour and brush qualities teachers might use the computer for displaying children's work:

Putting pictures into a slideshow:

Powerpoint can be used to put children's pictures into a slideshow. Drawings up to A4 can be scanned and added to a slideshow. Paintings can be found on the Internet and used to show children different styles of painting.

Assessment in IT - Progression in IT skills

Word Processing and DTP

Level 1	use a mouse to add/move text in a word bank e.g. in My world
Level 2	use a word bank and add own writing
Level 3	use cursor to edit/add rather than delete/retype centre and underline text, change font size recall and print saved work use highlighting tools to style text use Tab to put work into columns or indent text
Level 4	use spell checker cut and paste to organise text cut and paste to combine text/graphs/images
Level 5	change the format of a document to match a particular audience
Level 6	use the ruler to alter margins, tab positions, other indents use the menus to create and customise tables mix various sorts of information in one document

Surveys and Spreadsheets

Level 2	use a prepared database or spreadsheet, add values and print use a prepared database or spreadsheet, collect data, add text and values
Level 3	prepared database or spreadsheet, collect data, add text and values, graph and print enter values in a mathematical spreadsheet template understand the purpose of cells select groups of cells
Level 4	create a simple formula e.g. total a row
Level 5	change the format of a number use the four rules of number in a formula enter values to affect predetermined outcome e.g. to make a total over 100
Level 6	use a wider range of mathematical functions

CD-ROM

Level 2	select options and browse a CD-ROM
Level 3	look for specific information and talk about how the information was found print specific information

Monitoring and Measuring

Level 4	load software to plot temperature, sensor already connected connect a sensor and monitor change in value connect two sensors to monitor changes in value
Level 5	after plotting, copy graph into a word processor
Level 6	understand how sensors monitor and measure physical quantities

Roamer and Logo type Applications

Level 1	be able to use forward, backward, hoot
Level 2	be able to use forward, backward, turn to follow path
Level 3	program moves sequence a series of instructions to draw shapes discuss other control mechanisms
Level 4	use repeat to draw shapes
Level 5	build a procedure to draw a shape or plan

save the procedure and reuse it

Control

Level 3 load software and switch on a light in sequence using on/wait/off

Level 4 write a predetermined routine rather than direct instructions e.g. use REPEAT

Level 5 add another device and sequence them

Data Handling

Level 2/3 enter text/values into a prepared database
print the information

Level 3 find an item by name
ask questions of a single field in a database [e.g. red hair?] or within CD-ROM encyclopedia [e.g. Tutankhamen?]

Level 4 ask two questions of prepared database/CD-ROM [e.g. boys and red hair? or Tutankhamen or Nefertiti?]
copy information from CD-ROM to word processor
sort data into order

Level 5 produce a graph from a prepared database
collect, enter and check data in a data base, repeat simple sorts and searches
check data for plausibility

Adventures and Simulations

Level 1 use number and language software confidently

Level 2 use adventure games with no particular rules to identify, giving instructions to move through the program

Level 3 explore adventures with specific routes or rules to follow

Level 4 use a simulation and identify any pattern or rules, testing hypotheses and making predictions

Level 5 use a simulation and change its variables to affect the results

Level 6 use a model or simulation and vary the rules to change the outcome

Hardware

Computer Network

The school has a computer network supplied by RM. The server is in the deputy head's room, and there are hubs in the deputy head's room [for Block B] and the art storeroom for block A. There is a separate but linked server for the school administration.

Each classroom, including the music room, has a computer and printer connected to the RM network. There is a computer suite in Block A with 15 computers and printers, and there are further 4 computers with a printer in the KS2 library area. The nursery have one network computer and one stand-alone Window Box computer. The Kid's Club computers are also on the RM network.

Other hardware

Non-network computers - Three BBC computers with Control-It boxes are in the computer suite. Two stand-alone PCs are also in use in classrooms. For administration, the head and deputy have laptop computers.

Scanners - There are scanners in the computer suite and the library for staff and pupil use. The office staff also have a scanner.

Digital camera - There is a digital camera for staff and pupil use.

Headphones – there are headphones for each network computer.

Sensors – there are temperature and light sensors for each network computer.

Microscope – there is a low power microscope available to be connected to network computers.

Programs [March 2003]

These programs are available on the children's desktop:

Communicating

Talking First Word – word-processing with four levels of difficulty. You can include clip art, pictures, tables and graphs in documents. You can make one-page banners using word art. You can add a variety of shapes. There is a spellchecker and a grammar checker. You can have the computer read your writing.

Talking Textease – a similar package with more desktop publishing features.

Publisher – an easy-to use desktop publisher package for designing pages, cards, banners, etc. text, pictures, clipart, sounds can be added to pages.

Illuminatus – a rather complicated program for creating multimedia presentations

Powerpoint – an easy-to-use program for creating slideshows and multimedia presentations.

Colour Magic – paint program with four levels of difficulty. Includes 'fun' tools, clip art.

Music Explorer – program for writing music with four levels of difficulty.

Smart Alex – a program for exploring language. 'Talk' to Alex.

Handling Information

Number magic – a spreadsheet with four levels of difficulty.

Starting graph - a simple program for drawing graphs, pictograms

Pick a Picture - a very simple database program.

First Workshop – a database program suitable for KS1.

Information Workshop – a more grown up database for KS2.

Decision tree – a branching database.

Control and Modelling

Roamerworld -- a computer version of Roamer

MSW Logo – Logo programming

Robolab – a program for programming lego models.

Other programs

My World – a writing and text-matching program for KS1

Sound recorder – the windows program for recording and playing sound.

Oxford Children's Encyclopedia - an encyclopedia suitable for KS2.

The Romans – adventure program set in Roman times

Dorling Kindersleys Dictionary [needs cd]

Literacy World/Writers World [needs cds] – activities for Y3 and Y4 that tie in with the literacy scheme.

Maths programs – a collection of maths activities, some suitable for all ages

Ultimate Human Body [needs cd] – encyclopedia about the human body.

Alberts House [needs cd] – an adventure game – explore the house, find Albert. Good for logical thinking, directions, discussion, suitable for Y3 up.

Baileys Book House [needs cd] – KS1 reading activities

Being a Scientist – adventure program. Explore a wood, solve puzzles. KS2.

Bounce – maths investigation - simulation of bouncing 'billiard' balls. Upper KS2.

Cabot – adventure set in Tudor times. Set sail with Cabot. Upper KS2.

Duck Game – Y4 simulation. Design a straight flying duck by changing body parts.

Henry – KS1 adventure. Explore a farm, solve puzzles.

Maths Skills [needs cd] – maths practice, KS2 Sat based.

Musical Instruments – encyclopedia of musical instruments.

My First Incredible Amazing Dictionary – animated dictionary with puzzles.

Strawberry garden – steer robot gardener. KS1.

Surf into Science – nature study adventure for KS1.

Swan lake – interactive exploration of the ballet.

Map detectives [needs cd] – adventure based on mapwork. KS2.

Through My Window – science based adventure for KS1.

Trudy's Time and Place house [needs cd] – maths activities for KS1

Village life in India [needs cd] – information about this.

World Explorer – world map based adventure for KS1.

World reference Atlas – interactive atlas for KS2.

Other programs are available on cd in the staffroom. Installation instructions are included – ask for help.

Schemes of Work

The scheme is based on the QCA Scheme of Work. This covers the Year 1 to 6. Suitable science content in the Foundation years is suggested on the attached sheet.

For both Key Stages, the Scheme of Work follows a two year cycle:

Class	First Year	Second year
R	See Foundation Year document advice	See Foundation Year document advice
1	Year 1 QCA Scheme	Year 2 QCA Scheme
1/2	Year 1 QCA Scheme	Year 2 QCA Scheme
2	Year 1 QCA Scheme	Year 2 QCA Scheme
3	Year 3 QCA Scheme	Year 4 QCA Scheme
3/4	Year 3 QCA Scheme	Year 4 QCA Scheme
4	Year 3 QCA Scheme	Year 4 QCA Scheme
5	Year 5 QCA Scheme	Year 6 QCA Scheme
5/6	Year 5 QCA Scheme	Year 6 QCA Scheme
6	Year 5 QCA Scheme	Year 6 QCA Scheme

Many of the units are available on the network with ready made activity templates by clicking on Sample Launcher in the Resources folder.

There are many activities with printed instruction sheets to support QCA for KS2 – ask the coordinator

Using the Network

Pupil user names and passwords

Pupils can log on to the computers using their own names. They should use their first initial and their last name without a gap, e.g. abaldwin, kbutler, ajafari....

Some children have to type in more because they have identical initials and surnames to other children. For example:

Rachel and Rebekka Dowson - use rdownson and rebdowson

Children log on with their username.

No child has a password. They **must** leave the password line blank.

After they finish, they logoff.

The advantages of children using their username:

Their work will automatically be saved in their own 'My Work' folder, even if they do not go to 'Save as'.

Their work is less likely to be tampered with by another child - they will only see their own saved work.

You can find their work easily by logging on with their username - you won't have to guess what they called their work!

The 'default' usernames [junior1, junior2... and infant1, infant2...] are available.

Use them when:

You want to demonstrate how to use a program - the desktop will be the same.

You are not saving work e.g. when using a cd-rom.

Children are too young to log on – save any work with their name, and ask to have it copied into their My Work folder.

Please inform the coordinator if a username does not work.

Teacher user names and passwords

Teachers can log on to the computers using their own names. Use your first initial and your last name without a gap, e.g. rjames, klewis, hwright....

Your 'default' password is **password** but you can change it easily:

Log on as normal using your name and **password**.

When the computer has finished loading the programs, click on **network** in the bottom right of the screen (next to **logoff**).

Choose **Change password**. Type in the old password - that's **password** - then choose a new password for yourself.

Your computer 'desktop' has all the programs on it in the folders. You can change how your desktop looks and the computer will remember your changes. For example:

You can move the icons you use a lot out of the folders

You can leave folders open so you can see their contents

You can delete some icons or folders and use the start menu for those programs instead.

The 'My work' folder is private to you. Only you can see the work you save there. So you can safely use the computer for letters, reports etc.

All staff can see the 'shared work' folder. So you could put notes to other staff in there.

You can use your username and password on any of the computers and you will see your desktop with your work on it.

Inform the co-ordinator if any usernames or passwords do not work. If you forget your password, it can be reset to the 'default' password.

ICT Skills for Life

This LEA scheme allows children to earn certificates by achieving different levels. It enables teachers to keep a simple record of children's progress. Children have 'passports' where skills achieved are 'ticked off'. There is also a class checklist for teachers to use if they wish. The scheme does cover KS1 as well as KS2, but KS1 teachers may wish to use their own assessment methods.

[school policy has scans of copper, bronze, silver requirements and pupil record]

