Primary Focus on Geography

Spring 2005

Naace
Advancing education through ICT

Contents

indicates resources accompanying the article are available on the CD

Introduction

Welcome to the Naace Primary Focus on Geography.

It is hoped that this publication, the accompanying CD-ROM and the resources on the Naace website will prove a valuable resource. Sincere thanks to the many people who contributed to its success. If you want to take part you still have a chance, see the section on weather data below!

ABOUT THE EDITORS:

Angella Streluk is a long standing primary school teacher. She has taught most primary ages and combinations. She has a special interest in ICT and has incorporated ICT activities into her school's history and geography schemes. Angella enjoys sharing her ideas in publication in various forms. She has co-authored several books including a set of books on the weather.

Alan Rodgers is a freelance ICT consultant with many years of experience in primary teaching. He is a former ICT co-ordinator. He was involved with NOF and has written curriculum material for Hull University, BECTA and the DfES. Alan has co-authored several books including two on ICT in the primary school. He has a long standing personal interest in the weather.

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The range of articles included in this publication demonstrates the ease with which geography makes use of ICT. There are few areas of ICT which cannot be incorporated, without any need for contrivance, into this subject. Likewise there are few areas of geography which cannot benefit from some use of ICT. This has made the task of putting this publication together comparatively easy. A profusion of ideas from keen educationalists has blossomed into what will be a useful resource.

The accompanying CD-ROM is also a demonstration of the power of computing. Many people have shared resources in the form of geographical photographs and images. The ability to store images digitally was soon taken up by geographers. If its only purpose was to be as a presentation tool it would greatly enhance teaching and learning. It soon became obvious that there was potential for much more. The interactive nature of many elements of ICT can be exploited to give a meaningful stimulus to discussion and an opportunity for exploration. The speed and memory capacity of modern machines has now made the use of digital maps and pictures practical. Databases and spreadsheets can hold vast amounts of data and sort them in the click of a mouse. Above all as geography is ever-changing in so many respects and the ability to modify and update files is paramount. Updated maps on the internet and instant news are just two examples.

The interactive Weather Database on the Naace website gives everybody a chance to add to this geographical input. Incorporate it into the curriculum as part of geography, science or mathematics work. Register your school and input as much or as little as suits your schemes of work. Add links to your school website and let parents and governors know that the school is sending weather data round the world via the internet.

Although virtual geography will never take over from real experiences and practical application of skills, it can make preparing for those experiences much easier. It can also give chance to use the skills acquired in a variety of situations. Communication also becomes much easier, although we all know it needs to be carefully arranged and closely supervised. Email and forums are not only useful to the children they are also a source of contact and information for teachers.

Whilst the application of ICT in this publication is in the geography curriculum, and the target audience is Key Stages 1 and 2, there can be little doubt that the ideas can generally be transferred to other curriculum areas and key stages. History in particular will stand out, but certainly all of the foundation subjects will find elements that can be adapted. Links to the core subjects need not be pointed out as they are evident throughout.

Angella Streluk and Alan Rodgers

Floor Robots in Geography

Glynis Yates,
Amington Heath Community School

Use a floor robot to give hands on experience in navigating routes while having fun! The advantages of using floor robots in geography are many. Some are outlined in this article.

I've always enjoyed using a floor robot in teaching. Although QCA *Unit 2D: Routes: controlling a floor turtle* is intended for year 2 and QCA *Unit 1F: Understanding instructions and making things happen* does not include using an actual floor turtle, I've never been able to resist using it in whatever year group I teach. Before I used Pixie I used Roamer with KS2 children. Now I teach in KS1 I find that Pixie adds fun to many areas of the curriculum, none more than geography. If anybody is looking for this petite floor robot they know that the chances are it is in my room, and it's either on charge or being used. Even my Reception children enjoy using Pixie as part of *Knowledge and Understanding - ask questions about why things happen and how things work.*

My geography co-ordinator knows that I use Pixie for geography. It is excellent for teaching navigation round a map or a real location. The simple arrow keys for directions means that it is equally well suited to the four points of the compass as it is to the mathematical vocabulary of direction. The children soon pick up the fact that a clockwise turn from north takes us to east. Therefore when my geography co-coordinator got involved in the production of the Primary Strategy CD-ROMs, and a year one lesson included a lesson on navigating Pixie round a large map of the school I should have known that I would be involved. It was hoped that each lesson extract of the Primary Strategy CD-ROM would be supported by a video clip showing some relevant aspect of the lesson. When my school volunteered to be filmed for some of the clips I was also volunteered. Do look on the CD-ROM and see how my children take to the activity and how their geography learning is enhanced by the use of Pixie.

In the sections below I will try to encapsulate what makes using floor robots such an integral part of geography teaching and learning. My recent experience has been in Key Stage 1, but it will be clear that most points are equally relevant to Key Stage 2.

Why use a floor robot in geography?

The floor robot moves and can go on a real journey. Journeys have to be a significant part of geographical study. These journeys can either be around a representation of a place or can be around a real place. Imaginary places can include floor maps, roads layouts, farms, zoos or even *An Island Home*. Real places can be represented by the classroom, the corridors, the hall or the playground (as long as it is fairly smooth).

Geographical skills to be developed in these activities include:

- use of directional vocabulary (always include a compass rose in geographical work). Terms such as clockwise, anticlockwise, quarter turn, half turn also support the points of the compass. Use eight points of the compass to extend work.
- explore the relationship between the location of the robot and the direction it needs to face to go to another location. E.g. The playground was to the north of the classroom door. Now the floor robot has moved, the playground is to the west.
- sequencing locations in the correct order. Make this easier by travelling in a straight line or harder by including turns in the journey. Include references to starting and finishing locations.
- use of units to reinforce concepts of scale and distance (most likely lengths of the floor robot being used). Be sure to estimate first, try out the guess. Ask the children to then modify their estimate and try again.

Fitting in with geographical topics

- The floor robot can take on imaginary personalities and tasks. In my video clip it was a vehicle to carry children to the correct school gate at the end of school. It can have features fitted to it to make it fit in with stories (Red Riding Hood's cape and basket). It can be turned into a vehicle to link to transport aspects of geography.
- The maps and imaginary locations can fit in with both geography topics and geographical elements of other subjects (eg. Island home, St. Lucia, take Barnaby Bear round Europe, Fire of London.)

Cross curricular elements covered in geography applications

Literacy – provide a list of places to visit in order. Include pictures to help with the reading if appropriate

Maths – total the units travelled on a journey. It can include terms such as 'a quarter turn, a half turn.'

History – relate to a topic – travel round a map of a seaside resort in grandma's day.

Science - explore an imaginary habitat and see what living things can be observed.

Example Geographical Activities –

- Pixie on a map (could include Coll map, school map, local area map) – scale, direction, compass points, use of map symbols, personality – who is on the journey?
- Pixie round the classroom — scale, direction, compass points, start and finish points and stopping points of a journey
- Pixie navigates the toy farm yard - scale, direction, start and finish points and stopping points (e.g. to feed animals) of a journey
- Pixie delivers letters to a row of house (scale, sequence)
- Pixie could act out a story such as *Chicken Licken* and link with literacy. Visiting the parts of the story in the correct sequence is relevant both to geography and literacy.

Conclusion

Using floor robot gives a chance for practical activities. It is very visual but is a degree more difficult than actually walking the route themselves. It can be made to fit in with topics making it more meaningful. The links with ICT skills are natural but very helpful in covering objectives in an effective way. The emphasis on speaking and listening skills provides many opportunities to develop vocabulary, sequencing and to increase confidence. This is particularly the case in Key Stage 1, but it is clearly significant in Key Stage 2 as well although key Stage 2 might like to use a more sophisticated floor robot.

Earth from Space

This well presented site give access to pictures of the earth from space. There are few geography topics which would not benefit from using one of these images in an introduction to the topic. The images can be accessed in a variety of ways including a clickable world map which allows the user to zoom in gradually. Each image has a detailed description of what can be observed. The website is at

http://eol.jsc.nasa.gov/sseop/EFS/

References

Find the floor robot for you:

Swallow Systems (Pixie),
http://www.swallow.co.uk/

Valiant Technology (Roamer),
http://www.valiant-technology.com/products/roamer1.htm

Floor robot web links,
http://www.supporting-ict.co.uk/weblinks/floorrobots.htm

Primary Strategy: Learning and Teaching using ICT
See the lesson mentioned in paragraph three, page 2 on the video on the Year 1 Primary Strategy CD-ROM.
http://www.standards.dfes.gov.uk/primary/

Bringing a GPS to School

Whilst budgets may now allow for the school to own a GPS (Global Positioning System) It is unlikely that there is no teacher, keen on walking or sailing, who owns a GPS. Bringing this exciting resource into school can make for a fun lesson to bring home key points about location and direction.

At a simple level the coordinates of a location being studied can be put into the GPS' memory. It can then show the direction of this location in relation to the school grounds. This can then be discussed in relation to the compass points and the distance to get there as the crow flies.

The location of the school can be viewed at different scales. Zooming in or out will reveal more or less of the area around the school. My class took my GPS on a school trip. Beforehand I had added waypoints, using and OS Pathfinder map. These waypoints showed all the points of interest we were going to see, the lake, the boathouse, the mansion and the stables. It was great fun seeing our route plotted as we walked and getting the 'alarms' as we approached the waypoints.

Having first hand experience of a GPS helps to explain some of the geographical elements in everyday life. TV archaeology programs often refer to using a satellite to gain accurate positional data. Now they can see how this can be done.

Llandudno

Angharad Williams, Education Officer with the Royal Commission and the Ancient and Historical Monuments of Wales (RCAHMW).

The RCAHMW was established in 1908 to survey and record historical buildings and archaeological sites. It also curates the National Monuments Record of Wales, an archive and data-base that holds records about the effect of human activities on the environment. The archive contains over 250,000 aerial photographs, 30,000 Ordnance Survey maps and an extensive collection of drawings and historical photographs.
The following article shows how RCAHMW material can be used as a valuable resource for a locality study. Examples of the available materials are included on the accompanying CD-ROM. Unless otherwise stated materials on COFLEIN can be found at the RCAHMW's website at www.coflein.gov.uk

Curriculum References

QCA Unit 4: Going to the seaside

QCA Unit 13: A contrasting UK locality: Llandudno.

In particular it provides resources to assist teachers with the following objectives:

1. Where is Llandudno?
2. What do we expect Llandudno to be like?
3. Why is Llandudno like this?

This photo resource is designed to supplement, rather than replace, a field trip to the area.

Geography in the National Curriculum in Wales - Key Stage 2

1. Geographical Enquiry and Skills: 1, 2, 3, 7, 8, 9, 10
2. Places: (a contrasting locality in Wales) 1, 2, 3
3. Theme: (environmental change) 1, 2, 3, 4 , 5

Using the Resources

1. Where is Llandudno?
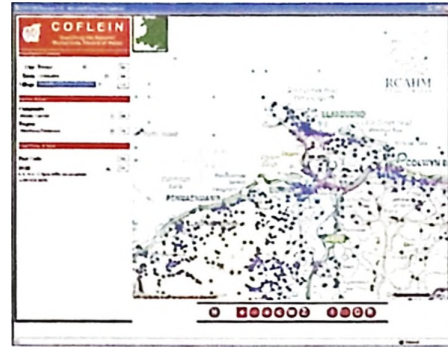
This excellent 'zoom in' map of Wales, with OS maps of different scales can be found on Coflein. Coflein will also present you with information about sites of archaeological or historical interest in Wales. (Map 1 on CD)
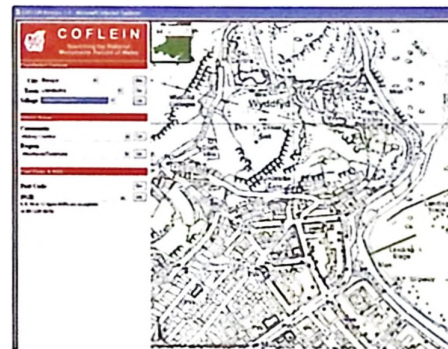
2. What do we expect Llandudno to be like?

For the second section of this unit it is recommended that children use secondary sources and are able to identify the main physical and human features of the area. Children can use the street maps on Coflein to identify or locate different features in order to label the aerial photographs of the town. (Map 2 on CD)

For example, can they locate the pier, railway station, Mostyn Street and Gloddaeth Avenue?

Brief notes about Llandudno

Llandudno is a purpose-built seaside resort town developed by the Mostyn family from the late 1840s. It was fashionable for the Victorians to visit the seaside, especially during the summer, for some fresh sea air. Llandudno became a popular resort, with a promenade along its beautiful bay, a pier and a purpose-built town with shops and hotels. The town maintains much of its Victorian architecture. The arrival of the railway in 1858 ensured that Llandudno was easily accessible to the Victorian visitor. The Great Orme was also developed as a visitors' attraction. The Marine Parade around the base of the Great Orme was built, along with the gardens in the Happy Valley Park, a camera obscura and the Great Orme Tramway.

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Favourite Victorian seaside resort activities can still be enjoyed in Llandudno, e.g. walking along the pier, attending a show at the North Wales Theatre, even being entertained by a Punch & Judy show on the promenade or enjoying a donkey ride.

Llandudno Pier

Image ©Crown copyright: RCAHMW

The original pier, completed in 1858, suffered storm damage and was replaced in 1876. The surviving pier was designed by Charles Henry Driver for the architects Brunlees and McKerrow, and it was completed by September 15, 1876 by J. Dixon. Llandudno Pier is a Y-shaped pier and has a large polygonal pavilion with ornate roof and gables. The pier is 376m long and 18m wide at the pier head.

By today the pier houses a variety of amusements, colourful kiosks and an array of shops, cafes and bars.

Mostyn Street

The impressive Mostyn Street was one of the first streets of the new planned town to be built and was named after Thomas Edward Mostyn, the first Chairman of the Llandudno Improvement Commissioners. The Mostyn Estate is still active in the development and preservation of the town's Victorian heritage.

The Great Orme

- The Great Orme is a limestone headland, with the summit at 207m above sea level; it is renowned for its wildlife and history.
- Reach the summit by the Llandudno Tramway: the tramway was completed in 1902. By today it's the only cable-hauled, public road tramway in Britain.
- Ride to the top in the Cabin Lift cable car which was opened in 1969.
- The Marine Drive built in 1878, along the line of the Cust's Path, allowed visitors to travel around the Great Orme.
- The Visitor Centre provides information about the history and wildlife of the area, and the summit complex has something for everyone from shops to a Victorian Picture House.
- In 1986 'Ski Llandudno' opened its dry ski slope and toboggan run.
- The Great Orme is also full of history. Archaeological evidence shows that people have inhabited the Great Orme since Neolithic times.

- Remains of an Iron Age hillfort, Pen-y-Dinas hillfort, and the remains of 50 hut circles can be seen above Happy Valley Gardens. Investigate this using the maps on COFLEIN. (Map 4 on CD)
- Visitors can learn how rock is turned to metal at the smelting site of the Great Orme Copper Mine, and explore the passages thought to date from the Bronze Age.
- An historic building on the Great Orme is St Tudno church. The church is named after a sixth-century Celtic monk, Tudno, who founded his cell on the north-east of the Great Orme, overlooking the sea. Christians have worshipped at the site ever since. The present church building dates back to the twelfth-century but was enlarged in the fifteenth-century and restored in the nineteenth-century.

The Little Orme

It is said that during the 1580s in one of the Little Orme's caves, Ogof Rhiwledyn, the first book was printed in Wales - 'Y Drych Cristinogawl'.
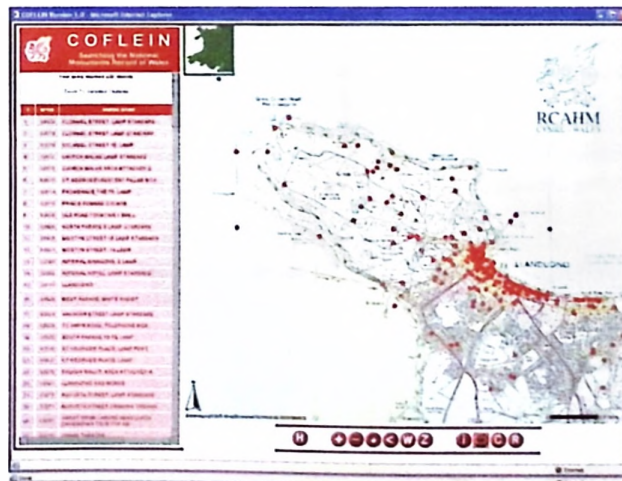
For historic information about, for example, buildings and archaeological sites see Coflein. (Map 5 on CD) Each dot represents a record about a building or site of archaeological or historical interest.

3. Why is Llandudno like this?

Image From the collections of the NMRW
© Howarth-Loomes Collection

In addition to the suggested activities noted in the QCA unit, further research work, using secondary resources and observation skills, can lead to discussions about the history of the town and how it developed as a seaside resort. Llandudno became very popular during the Victorian era, with its beautiful beaches, long promenade and fascinating Great Orme. The main reason for building the railway branch line to Llandudno, from the Chester to Holyhead line, was to encourage visitors to the seaside resort. Prior to the arrival of the train visitors would arrive at Llandudno by boats or steamers from ports such as Liverpool.

Compare the two aerial photographs on this page and list similarities and then differences. What are the main changes in the area during the 52 years between 1946 and 1998?

The QCA unit is based around a residential field trip to Llandudno because the school that devised it organises a regular school trip there. However, most of the teaching ideas could be applied to any locality. Similar resources to those included can be obtained from the RCAHMW.

For resources on other areas in Wales contact the National Monuments Record of Wales, at the Royal Commission on the Ancient and Historical Monuments of Wales. Website: www.rcahmw.gov.uk

Contact details:

NMRW, Plas Crug, Aberystwyth, Ceredigion, SY23 1NJ
Tel. 01970 621200
nmr.wales@rcahmw.gov.uk

Aerial Photographs can be used to study the development of Llandudno

107.3G.TUD.UK.33_5006
Aerial photograph from January 1946 ©Crown copyright: MOD

98-cs-210
Aerial photograph from 1998
©Crown copyright: RCAHMW

For aerial photographs of towns and villages in Wales visit Gathering the Jewels website:
www.gtj.org.uk/item.php?lang=en&id=27333&t=10

If you are searching for resources from Scotland contact the Royal Commission and the Ancient and Historical Monuments of Scotland:
www.rcahms.gov.uk

The National Monuments Record, the public archive of England, prepare educational resource packs that include aerial photographs:
www.english-heritage.org.uk

GIS use in Primary Schools

Rachel Bowles, Honorary Research Associate, University of Greenwich and Coordinator, Register of Research in Primary Geography

The most important knowledge to have about Geographical Information Systems (GIS) is that you are probably already using GIS products in everyday life such the location map of shops in a mall or town or a map downloaded from the internet in response to a postcode search. Moreover whenever you draw a map, for whatever purpose, you are an individual GIS. Find out more in this article.

What is GIS?

The most important knowledge to have about Geographical Information Systems (GIS) is that you are probably already using GIS products in everyday life such the location map of shops in a mall or town or a map downloaded from the internet in response to a postcode search. Moreover whenever you draw a map, for whatever purpose, you are an individual GIS. Take your sketch map to show a route to home, pub or another town. You use points to locate the beginning and the end of the journey and text to label the places at start and finish – and landmarks in between. The landmarks could be a church / garage / school / fantastic house – all of which are points. They are linked or lie besides roads, railways, rivers – which are lines, as are all topographical boundaries such as walls, hedges, fences. The lines in turn often enclose areas of land such as woods, fields, gardens, housing estates, parks – all irregular area features of the landscape, which for want of a better term in cartographical and GIS circles are known as polygons. (See Fig 1).
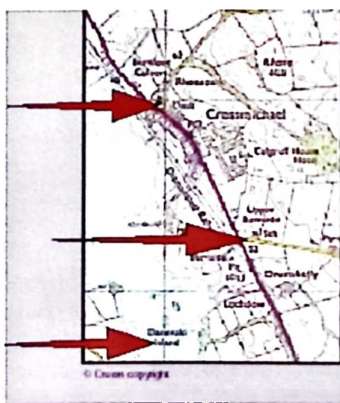

Fig 1 The parts of map information identified to enable digital storage in a computer system.
Source: http://www.ordnancesurvey.co.uk/oswebsite/education/schools/digitaldata/teachgis.pdf
The Teachers Guide to GIS, Ordnance Survey Education Team

Your sketch map contains all these elements. The Ordnance Survey and other printed maps show these elements in a sophisticated and precise fashion. The map features can be separated into layers of information e.g. roads and railways, boundaries, water, vegetation, buildings. In the past this was done by constant redrawing – very time consuming. With a computer separate, different maps, at different scales and with additional symbols can be drawn in a few minutes using not only the data of the original maps stored as points, lines, polygons and text, but also data drawn in from other data bases in figure or text form. In car map systems, emergency services, consumer distribution centres all benefit from this elaborate computer plotting of data.

School GIS maps

For any school GIS generated map there are four components -

1. the **computer hardware** – be it PC, laptop, Mac or tablet with associated scanners and printers

2. the **computer software** to perform calculations (such as distances) and allow the import of images (digital camera, scanned or CD-Rom); digital maps (from the internet or OS digital tiles) and aerial photographs (either from the internet or scanned) and analysis e.g. by using different layers of information

3. the **map data** e.g. from surveys and fieldwork; and

4. above all, **people** be it child or teacher, individually or in collaboration to make it all work.

All four elements are needed from the earliest age but are used very differently at each stage from Foundation through KS1 and KS2 to KS3. As with all other skills there is a progression and the progression can be very much concerned with the development of skills in numeracy, literacy and ICT as well as beginning to understand the world about us . The progression can be identified in several ways – through task or enquiry set, skills being developed, the type of software used and the final product.

Software for map making and developing spatial understanding

Exemplification of possible work can be seen in the example materials from Foundation Stage to Year 6 of the Primary National Strategy *Learning and Teaching using ICT* (Ref. DfES 0315 -2004G) These are found on CDROM 2 for each year, click Main menu, then Geography (the Globe) then the relevant lesson.

For Foundation stage click the relevant programme picture. In addition to developing ICT skills the sequence *Painting with a Tablet* develops using colour and image to represent real world features and 'landmarks' (art and geography). *Floor robot and Pirate map* starts the all important sequence of using a grid which develops later work with coordinates (mathematics and geography) whilst *Floor Robot and Distance* begins important spatial sequencing and problem solving thinking.

The activities described can be related to classroom and playground spaces laying foundations for symbol & position referencing (points) and understanding of distance (lines).

For Key Stage One and Lower Key Stage Two investigative tasks introduce children to the idea of looking at their local area, and focussing on distinctive features, land use and environmental quality. This allows for later development in smaller topics, such as making the area safer. *Our Street* concentrates upon understanding the variety of features that form part of their local area, for example in the nearby streets, developing vocabulary and sequencing for Year 1 and 2. Paint packages (e.g. *Dazzle* and *PaintSpa)* can be used with aerial photographs and maps from the internet (downloaded to a separate file and then copied) and additions for symbol, area and line made, similarly, with greater precision in *Textease*. This latter program is doubly useful when connected to the interactive whiteboard software *Easiteach Studio*. Much developmental work can be done on symbols, location of features, the need for conventional colours (green vegetation, blue for water, black for important buildings and bare rock, grey or pink for areas of building, white for agricultural land) and the ability to vary this basic information to show historical growth and land use. *Robotic Journeys* takes a programmable floor robot for a 'walk' along a delivery route (e.g. such as a postman). The route is described in terms of distance and what the robot will pass along the way. A programmable floor robot e.g. Pixie, Pip, Roamer, Turtle, allows children to think creatively about and to test solutions to spatial problems. See: http://www.valiant-technology.com/and http://www.swallow.co.uk/pixapps/pimentel/ideas.htm. When visiting a contrasting locality (e.g. a village or town centre), the programs can create a route guide to the main features. You may prefer to develop spatial understanding with fantasy scenarios such as the route that Little Red Hen takes, or similar stories.

The above activities continue to develop an understanding of symbol, line and the spatial distribution of area (polygon) through considering land use and problem solving of movement round an area. Interactive use between reality (aerial view) and 2D maps is possible with mapping packages with GIS facilities where map and photo, because of the points, lines and polygons, can be superimposed accurately. Up to this point GIS facility is in the software aiding simple interpretation and map making. The following stage allows more pupil control of GIS properties.

Mapping packages with GIS functions

There is much to be said for using mapping packages with the GIS ability to import OS digital maps (1: 10,000; 1:25,000 and 1:50,000) both of your local area and a distant fieldwork area in addition to using the features available in the graphical software. This is your source of accurate blank field maps, as well as maps to be annotated and altered. The present day map can be changed to show the historic areas or the future development – the latter as futuristic as you wish, but with its roots in accurate geography of slope, roads and river.

Local Studies (SoftTeach) has been available since the late 1990's. Originally an application based upon paint application properties with additional pictorial and conventional OS keys there were set projects and the ability to make your own projects. Over the years it has become more sophisticated and easier to use. Today it is possible to bring in maps from internet sources, including OS data, and from LEA OS data sources and manipulate them at will. This makes it a suitable piece of software to take up from the earlier map capable software used in Foundation and KS1.

My School Aerial (Wildgoose) is based upon excellent aerial photography - much sharper than that downloadable from the internet. If you provide the OS digital data for the area round your school

This can be calibrated to provide the link between the aerial and surveyed information. There are pictorial and conventional keys but the application tends to be less flexible for all abilities and ages. Nonetheless it is supported by a wide range of other primary material.

A new mapping package, *Digital World GIS* was specifically trialled in SE schools via the Aladdin Project (http://www.ordnancesurvey.co.uk/oswebsite/education/schools/mappingnews/25/mnews25winter03.pdf) page 25. Illustrations of its capabilities show it is a worthwhile application to start with even KS1 children and applicable to cross curricular, though geographically inspired, topics. Similarly *InfoMapper* has been trialled on the regional Grids for Learning in the south west and the south. Both applications rely upon using Internet access and pre-installed OS digital imagery – i.e. both aerial and map digital data. Both are expensive – but as with *Local Studies* and *Our School* e-credits can, and should, be used.

Other applications which have GIS capabilities include AEGIS 3 and Arcview. This lacks the link with simple map drawing packages which, though useful as Upper Key Stage 2 GIS packages can be demanding of ICT knowledge and understanding.

See *Fig 2 Progression in using software for map making* on the CD-ROM.

Progression in using GIS for map making

In the same way that there is progression in the software for developing literacy and numeracy skills there is progression in graphicacy (map making) software. Figure 2 shows this progression through the way QCA units require mapping skills in order to collect and manipulate data. These units can be varied and extended through the additional information that becomes evident through using a GIS based package.

Figures 3 and 4 show screen shots using the mapping package *Digital World*
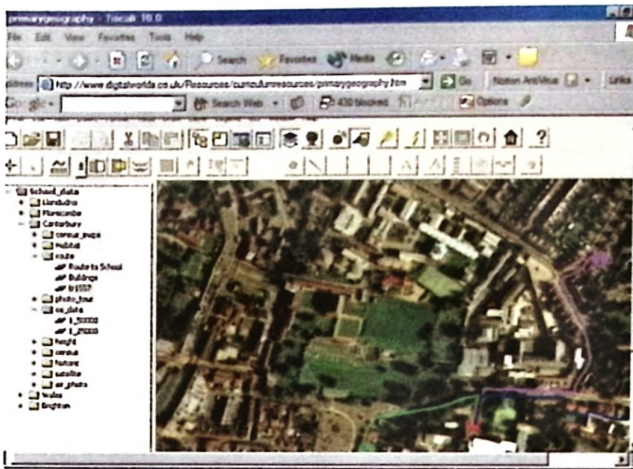
Figure 3   Plotting routes to school on the aerial photograph using predetermined symbols

http://www.digitalworlds.co.uk/
primary%20curriculum.htm

The routes about the school locality, from home to school, to the shops, friends, and play spaces and so on are easily accomplished with a GIS package and use the children's own geographical knowledge – often developing the locality knowledge of their teacher who, in all probability, lives in an adjacent locality. These foundations of spatially plotting local knowledge underlie the next areas of enquiry to be followed by older children and for which success is enhanced by accurate mapping – as in Fig 4, of data required to solve the issue of traffic problems. Further examples of increasingly sophisticated use – all by primary children are given in video clips on the Digital World web site
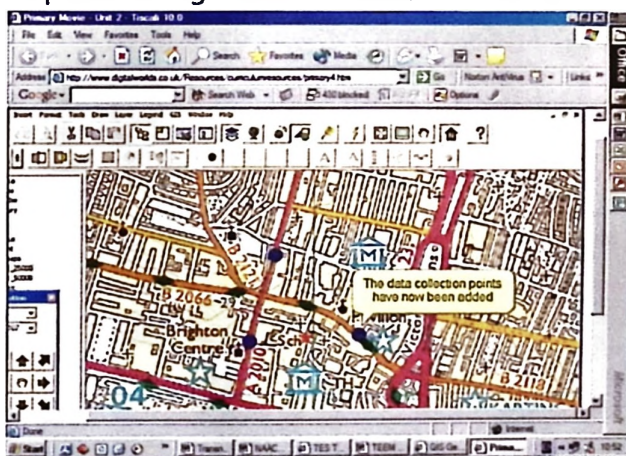
http://www.digitalworlds.co.uk/index.html

Fig.4   Plotting the survey points in relation to school

http://www.digitalworlds.co.uk/Resources/
curriculumresources/primary4.htm

These web pages in themselves show how mapping packages can be used successfully at key stage two. On Young Transnet

http://www.youngtransnet.org.uk/main/home.
htm

the data from surveys is producing collaboration between schools. Archived on this site is a news article showing how *'Map Maker Safe Routes'* allows you to draw and design routes on an digital map, and mark the dangerous spots in the area around your school and home as above.

Fig 5 *Mapping software for primary schools* available for purchase with e-credits and Fig 6 *Other suitable software* not available (currently) for purchase with e-credits or free (on the CD-ROM) show the current state of available software suitable for primary use. The current *Mapping News* (sent to all schools, free) always has up-to-date information on software and its suitability. Current and back issues of *Mapping News* can be seen electronically and downloaded at

http://www.ordnancesurvey.co.uk/oswebsite/
education/schools/mappingnews/.

There are also very helpful pages, even for the regular map user, at http://www.ordnancesurvey.co.uk/understandmaps and

http://www.ordnancesurvey.co.uk/oswebsite/
education/schools/digitaldata/index.html

An enthusiast has written about one package, *Map Memory* , which shows the way digital mapping is going for schools and everyday usage as well as business use (http://www.ordnancesurvey.co.uk/oswebsite/
education/schools/mappingnews/26/
sum2004mappingnews.pdf page 35 and elaborated upon it on his web site http://www.juicygeography.
co.uk/digitalmaps.htm). When one considers that a Global Positioning System (GPS) in-car, on boat and air plane and out on the fells is recognised as an essential piece of equipment, along with one's mobile telephone, getting to understand and use digital mapping in school is rather important.

Contact

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Using *Infomapper* in the classroom

Philip Griffin, ICT Coordinator, Radstock Primary School, Wokingham

Infomapper is a comparatively new tool available online. It is intended to facilitate the use of maps and aerial photographs which the school's Local Education Authority has the licence to supply. The Infomapper interface allows these resources to be used via an accessible interface. This article demonstrates how it has been used and explains its benefits.

Infomapper brings together two opportunities, one old, one new, which are open to schools. Local Authorities have long held the licence for Ordnance Survey maps which schools, as part of an LEA, have had access to. The second opportunity is the fast internet links which many schools now have which allow access to information held elsewhere. Infomapper puts together these two resources, providing quick access to different mapping bases over the internet.

Infomapper is, however, far more than a mapping tool. It provides a framework on which teachers and children can create learning resources through the creation of layers. It is in its ability to add layers of information to maps that *Infomapper* becomes an educational tool rather than a resource such as, for example, *Multimap*.

The layers created can be shared with other users of *Infomapper*, either locally or regionally. Teachers can create their own layers, to use with a specific topic, or the children can themselves take part in the creative process making their own layers. These can then be shared with other users of the system, either locally or regionally.

The best way to illustrate the power of the system is to recount how it worked in practice with a group of children.

Our topic was 'Connecting ourselves with the world' (QCA Geography Unit 18) and we hoped that the children, working in pairs, would produce a layer over a world map showing some of the key features of the country or region that they were describing. Although the children had previously had experience of writing web pages they had not used *Infomapper* before, and so the project was divided into two parts, initially learning about how to use *Infomapper* before the children were asked to work in their pairs on their project.

Preparing Infomapper

Before the children started using *Infomapper* it was necessary to ensure that our school was registered, that our web browser was up to date and various plug ins were activated. Despite warnings that restrictions on the computers had to be temporarily relaxed to enable this to take place, on our systems this proved not to be the case. The final preparation was to make log-ins for the children. Although it was recommended that each child should have their own log in, it was decided to create a log in for each computer. As a time saving measure, it is possible to import a list of users into *Infomapper* from the school management software.

Introducing Infomapper

As *Infomapper* is a web based resource, to enable easy access a link was created from our school website to *Infomapper*. The children duly managed to log in and were then invited to explore the first map, after being shown how to zoom closer and how to type in postcodes to find a particular location. Being able to type in a postcode and find their own house, really motivated the children (every adult that I've shown *Infomapper* to has also naturally visited their own home first!). *Infomapper* automatically starts with Ordnance Survey 1:50 000 maps and so the children could not see much detail of their homes.

Fig 1 Using Infomapper Photo by Chris Davison

10
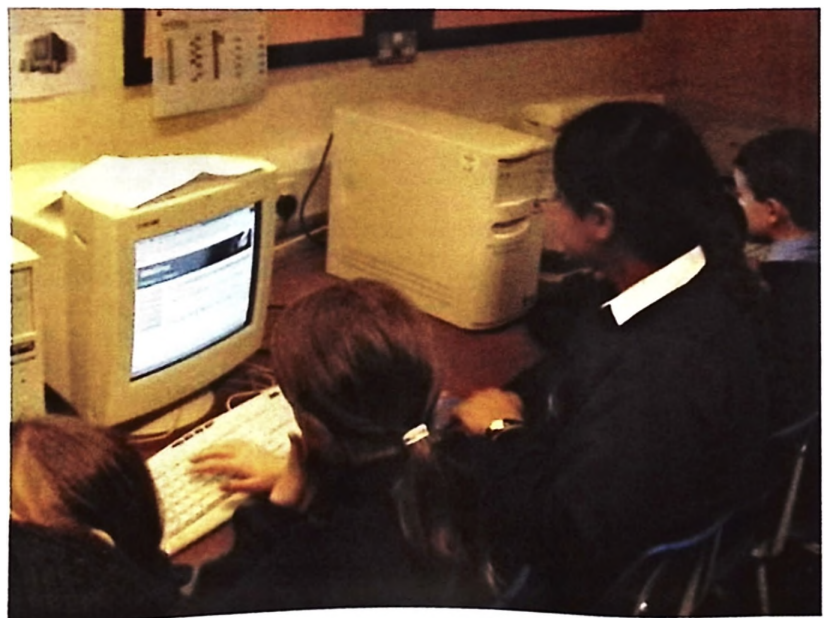
The next stage was to show how the map could be changed to one of the others available. In our case, the children could choose from 1:10 000 maps or Ordnance Survey street maps. The additional level of detail immediately interested the children, and this was further increased when they realised that there were aerial photographs of their houses as well. Although these were only 2m aerial photography, where each pixel on the map represents 2m on the ground, it was still possible to see details such as cars on drives or in the school car park- it was definitely not the beginning or end of the school day when our particular aerial photograph was taken!

With *Infomapper*, however, it is possible to take this process one stage further. Two maps (or aerial photographs) can be displayed at the same time. These can be displayed in a variety of ways, side by side, on top of each other etc, allowing different features on the maps to be compared.
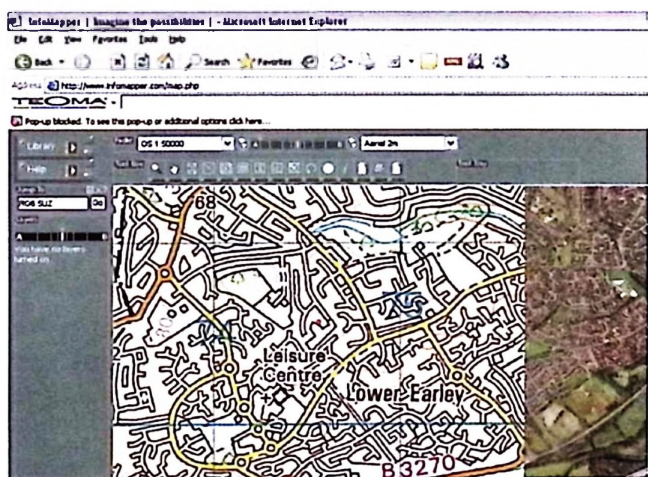
This example shows *Infomapper* with an 1:50 000 map and 2m aerial photo displayed continuously - the M4 runs from the map to the aerial photo. A small red dot indicates the exact position of the postcode in the 'Jump to' box.
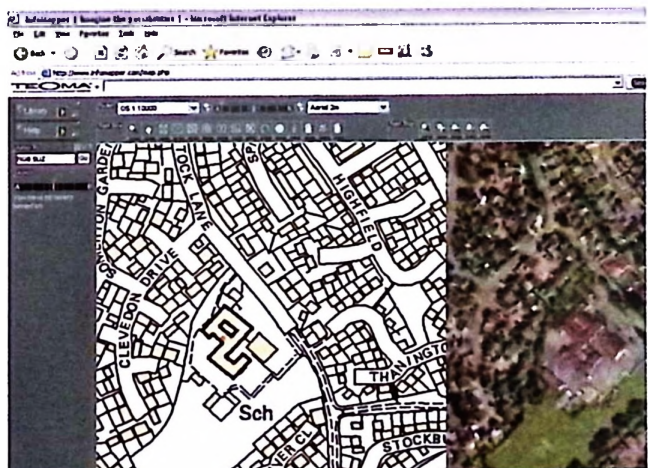

This example shows how a 1:10 000 map and aerial photograph of the same area can be displayed side by side.

The different methods of using map and aerial photograph together can be used in different situations. The children were also fascinated by displaying a map over an aerial photograph, and then using the slider control to gradually fade out the map and fade up the aerial photo, before reversing the process.

Making layers

By now the children were familiar with the basic tools of *Infomapper*, and were happy to change between different maps and the other resources. They soon realised that they could not display a world map and an Ordnance Survey map on top of each other as the scales were different.

Creating a layer can really be thought of as a three stage process: making the resources, making the layer, and adding the resources to the layer. *Infomapper* is flexible enough to enable the same resource to be used on several layers which is a powerful way of working. However, some of the children found this quite difficult to understand. Each of these processes is completed through a wizard that guides children through the process.

Making the resource is the most complicated stage of the three as there are far more options. First a short description is created, and then the opportunity is given to link to various other resources. These can be links to other web pages; to pictures; or to a web page. Within *Infomapper* a basic web page editor is provided, enabling pictures and other information to be added. The children found the editor easy to use, as most of the tools were familiar from other programs. As part of the learning process, each pair was asked to create at least three web pages based on our locality. Many chose their homes, which was the time for a discussion on how you should never add such personal details to a website. Since we were only practising at this stage, children did add details of their own houses, some even emailing from their home email to the schools email address digital photos of their houses.

Once all the children had created some resources, we then went through how to make layers, a much simpler process. Various choices are possible to individualise each layer, for instance by choosing a particular symbol to mark a hot spot.

Finally, the time had come to add the resources to the layer. By clicking on the appropriate button, and then on the location on the map where the hotspot was required, a link could then be made to a resource.

The project

Having spent about four sessions learning how to use the facilities available within *Infomapper*, it was now time for the children to start creating their own projects. Having chosen their subject country or region, they began to find out more about it using the web. Information was copied and edited, before being added to *Infomapper* webpages. Time was running short, due to problems with the computer suite. Some groups managed to create several pages on their chosen country, but editing and improving these became difficult due to the shortage of time. We now have plans to introduce *Infomapper* in earlier years, so that the children

are already experienced in how to use the software before conducting a major project where they are responsible not only for creating the pages but also the initial research.

Sharing work

None of our project work was complete enough to go to the final stage- publishing. When a layer is completed it is possible for it to be published for others to see. It can be published for just your school, or to all other *Infomapper* users. When a new layer is published, a comprehensive indexing system is used to link it to areas of the curriculum. This database can be searched, enabling searches to be made under different curriculum categories. Details of recent layers are also brought to users attention when they first log on.

Teacher-created resources

Infomapper can be used for a wide variety of curriculum areas - it is a framework which any teacher can use to create an information bank or an activity for their class. For instance, a layer can be created for a history project such as 'What were the effects of Tudor expansion'. One of the suggested activities in the QCA unit involves the circumnavigation of Sir Francis Drake. So here, a layer has been created with his probable route and six hotspots detailing the incidents that happened at various points. This can be used as an information resource, with children clicking on the hotspot and finding out what happened at a particular place. Or, taking the project further, one of the hotspots is linked to an account of his voyage. The children are asked to read this account, find the places mentioned using the Gazetteer, and then add their own hotspots detailing what happened at the different locations *The Golden Hind* reached.

Conclusion

Infomapper is a valuable aid for geography as it gives teachers quick access to high quality maps electronically, invaluable for class sessions using an interactive whiteboard. It is, however, far more than a mapping aid, enabling the creation of learning resources linked to a particular objective. *Infomapper* also allows teachers to share the resources that they have created, and gather new ideas by looking at the work of others. At its most creative, it is an opportunity for children to explore and annotate their own and other environments.

Contact

InfoMapper, WebBased Limited, Tamar Science Park, Plymouth, PL6 8BX

W: http://www.webbased.co.uk

E: infomapper@webbased.co.uk

This screenshot shows an example of a world map layer of Drake's Circumnavigation. The question marks all lead to more information about what happened at different points in his voyage. The question mark below 'What to do' leads to an account of his voyage containing dates and places for the children to find using the gazetteer and then add information in their own personal layer.

Fig 4   A World Map showing Drake's Circumnavigation
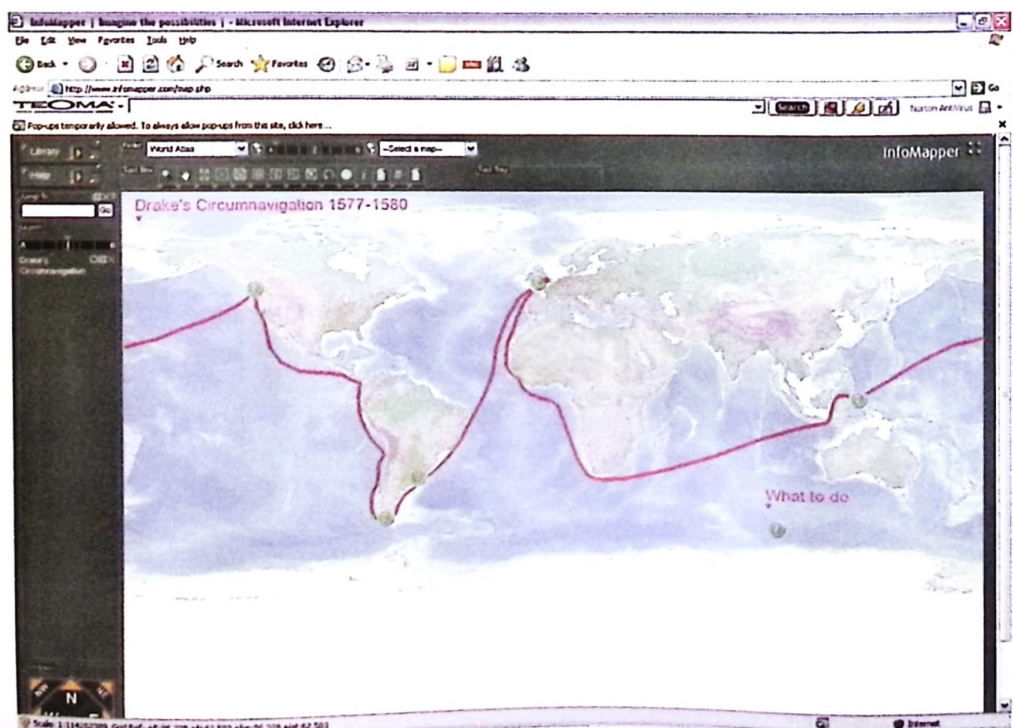
A context for using mapping skills within the classroom

Rhona Dick, Independent and member of the Naace Primary Working Group and PPC (Publications, Publicity and Communications) sub-committee.

It is not always easy to find a real context for using mapping skills. Children are familiar with their own locality and you wouldn't want to let them loose to test their map reading skills in unfamiliar surroundings. This case study demonstrates how my Year 6 class used mapping skills in an (almost) real life context within the safety of the classroom.

Previous learning

Children were familiar with OS symbols.

They knew at least 8 points of the compass.

They understood what contour lines display.

They understood the idea of scale in maps.

Curriculum References

NC Geography KS2 Geography and enquiry skills; 1a, 1e, 2a, 2b, 2c, 2d, 2f

NC Geography KS2 Knowledge and understanding of places; 3a, 3b, 3d

NC Geography KS2 Knowledge and understanding of patterns and processes; 4a, 4b

NC Geography KS2 Knowledge and understanding of environmental change and sustainable development; 5b

NC Geography KS2 Breadth of study; 6a, 6d, 7b (part)

QCA **Unit 15:** The mountain environment

This activity could equally well be adapted for other locality studies or a river study

Scotland

5-14 Guidelines Environmental Studies People and Place:

Using maps

Lesson 1: Using atlases and larger scale maps

I selected an area around Ballater in Aberdeenshire, with which I was very familiar, but was unknown to any of the children. We began by using atlases and looking at the whole area between about 56.5° and 57.5° N and 2° and 4°W. What could the children tell me about the landscape and transport? How did the former impact on the latter, or perhaps vice versa? Similarly we looked at population distribution.

Using the Landranger series of maps numbers 37 and 44 we zoomed in on the area between Crathie to the West and Aboyne to the East, following the A93. We looked at the major landscape features; mountains, rivers and forests, then the pattern of contours, identifying the steepest slopes. We identified changes in landscape as mountains gave way to flatter land the nearer the coast we looked. Subsequently we focused in on the village of Ballater itself, and using an Explorer map number 388 with a scale of 1:25 000 the children were asked to say what facilities there were in the village and the immediate surroundings. These included a mountain rescue post, a camping and caravan park, cycle hire, picnic sites, tourist information and various hotels. From this the children were able to suggest that tourism might be an important source of income in the area.

At this point I explained what their task was to be. The class was going to use ICT to produce a guidebook for tourists to the area.

I had brought in a selection of guidebooks to other places. Children looked through these and identified the sort of information provided. We discussed the sorts of information that could be elicited from maps (landscape, historical features, buildings of interest, transport routes etc. and what information we would not be able to extract (types of shops, opening hours of shops places of interest and details of these.)

Children would work in pairs and study a small section of the maps of the locality. This enabled me to differentiate the task by assigning sections of the map appropriately. Each pair would write a description of a short tour. Pupils who found this sort of task difficult would be assigned a fairly simple section of a map, with clearly defined features. Able pupils would be given more challenging sections to use. The information to be included should where possible include possible modes of transport, the features of the landscape and the major points of interest with references to distances if possible. We decided upon a common format for each section of the guide.

Lessons 2 and 3: Using Get-a-Map

Using the Get-a-Map section of the Ordnance Survey site

http://www.ordnancesurvey.co.uk/oswebsite/getamap/

I had located the map for Ballater, zoomed in to largest scale and saved sections of the map for each pair of pupils to use.

I demonstrated to the class where the maps had come from and asked the children to find and open their maps. Those who preferred to do so were allowed to print their maps. They opened their word processors and set to work with enthusiasm on their guidebooks. They were encouraged to give a descriptive heading to their document. Children reviewed and revised their work regularly; drafts were printed out and pinned, anonymously, to the wall. During the plenary others were encouraged to read these, and make constructive comments. In the third lesson children were asked to incorporate sections of the map into their writing; these were to be annotated appropriately.

In the plenary session of this lesson we discussed the effectiveness of the work. Children were asked to comment on how their guide books compared with those they had seen. They said that theirs were not so good because they didn't have pictures. Some brighter children said that theirs couldn't be so good because they hadn't seen what they were describing.

Lesson 4: The pictures

This last lesson was used to create a polished final document.

I brought in several pictures of the area and gave each group one or two, asking them to identify the location of the picture on the map. This required them to look at various features, in the example below there is a small wood behind a building on the lochside, and several small burns (streams) can also be seen.

Fig 1   Glas-allt-Shiel, Loch Muick

Some also managed to suggest where the photographer had been standing to take the photograph. In the example below the photograph was taken from the other side of the loch, almost exactly opposite the building.

Pairs took it in turns to scan their picture(s) into the computer, save them and then import them into their document providing suitable captions.

After the lesson I amalgamated all the different files and printed out the book for display in the classroom alongside the maps.

Lesson 5: Contours

One thing that became evident was that some of the children found it difficult to visualise the contours of the land from the map. To many of them all mountains took the shape of an inverted V, and a mountain range resembled an early handwriting pattern drawn with a shaky hand! In an effort to help children better interpret the contours of the land they made 3D representations. The area provides quite a range to choose from, and I selected, enlarged and saved sections of maps showing different ones, from simple hills for example Craigendarroch and Lary Hill to complex glaciated landscapes such as Lochnagar.

The children printed two copies of these and went over the 50m contour lines in black felt tip to make them clearer. One was kept for reference. The children carefully cut out the shapes from the second as a series of concentric hoops. These were stuck onto card for strength and cut out again.

To separate the levels they used cm lengths of jelutong from the technology store, (unit cubes from base 10 equipment work just as well) which they stuck to the underside of each layer. Children carefully positioned section upon section until they had built up a 3D representation of their hill.

A 3D representation of Morven.

These models were displayed around the room and the other children were given copies of the maps showing the contours and asked to find the matching model.

In discussion at the end of this lesson children were able to explain, without necessarily using the correct geographical terms, what features they had used to help them match models to maps.

What learning took place?

All children were able to interpret a range of symbols on an ordnance survey map, and to make use of eight compass points to describe direction.

All children were able to create 3D representations of contour lines.

Most children were able to match a 3D representation to a map showing the contour lines

Most children were able to identify a place on a map from a picture showing distinctive features.

Some children were also able to use scale in map to calculate distances.

All children used a variety of media to produce a presentation using ICT

Conclusion

This was without doubt a most successful topic. The children engaged with the work, and used their previously learnt mapping skills to good effect.

Resources

Atlases

OS Landranger maps 37 and 44
OS Explorer map 388
http://www.ordnancesurvey.co.uk/oswebsite/getamap/
Maps can be used free of charge for educational purposes, but do make sure you check the terms and conditions carefully.

String and rulers for measuring distance

Calculators for scaling up.

Computers

Word processors

Scanner

Printer (preferably colour)
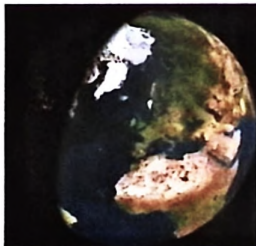
Internet connection

Felt tip pens

Card

Scissors

1cm lengths of jelutong or unit cubes from Base 10 equipment

Glue

Earth View

http://www.fourmilab.ch/cgi-bin/uncgi/Earth

View from 151022300 km above 51°18'N 8°37'W

Click in image to pan or here to zoom in.

Satellite data provided by The Living Earth* Inc./Earth Imaging
© 1996, All Rights Reserved.

This is an interactive website which can be used to explain difficult concepts in a practical way. It can demonstrate the significance of point of view as to what is seen. There are several options which include viewing a map view or earth view. The user can select to view from the sun, moon or dark side. Change the view from now to a selected time and date. One can set longitude or latitude or simply click to centre or zoom. Remember to click 'update' after selections.

Pupils could create a series of images at different times and animate to show the rotation of the earth.

Interactive Whiteboards and Geography

The keen geographer may be tempted to think that Interactive Whiteboards were made especially for teaching this subject. There are so many reasons why they lend themselves to teaching geography. Most of these hinge on the ability to promote discussion, a key feature in most educational tasks. The word interactive has always been crucial to geography. In the example illustrated the user chooses a place to investigate and then compare the map with the photograph of the location. Hyperlinks are placed on each letter.

A few advantages of the IWB are listed below:

- Looking at images is made easier and there is the added advantage of being able to annotate them without spoiling them. Add to this the use of 'spotlight' and 'reveal' tools and the advantages are obvious.

- Maps can be reproduced so that everybody can see them at once and discuss the aspects relevant to the lesson.

Main Man Page

Choose a place to investigate. Click on the letter.

- Multimedia brings places and topics to life and is easy to share with an IWB

- Hyperlinking maps and images to provide an interactive exploratory activity brings exploration to the classroom.

- Many pages can be used, either pre-prepared or as a result of discussion, you need not cramp things onto one page.

- CD-ROMs and interactive activities on websites can be shared easily.

- Sometimes a huge bank of resources is provided with the IWB software. These can include maps and photographs as well as activities prepared for particular topics.
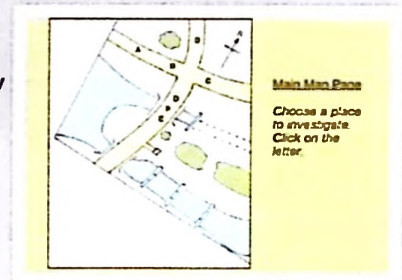
See the list of websites on the CD-ROM for sites which will benefit from being used with an IWB.

More than meets the eye - Using the Photograph Resources

Angella Streluk, Geography Coordinator,
Amington Heath Community School

On the CD-ROM accompanying this publication there is a large photograph collection. These images have been donated by members and non-members with the aim of giving teachers a resource to use in geography lessons. They can be used for educational purposes in a non-profit-making context. These notes may help to get a little more out of the resource.

Finding the right photographs

There are over 700 photographs in the resource! Finding the ones you want to use will be the first task. There are two key methods which could be applied. The files are sorted into folders for each country represented. You can use a paint package to browse the photographs, country by country. This can also be done in the operating system by viewing the folders in 'thumbnails' mode. Depending on the number of photographs and the number of countries likely to be relevant in your topic this may be more or les useful as a strategy. If you wanted to look at the Coll pictures this will be the best strategy.

Alternatively, on the CD-ROM is an *MS Excel* file which indexes the photographs. This file can be sorted or searched to locate suitable images. Load up the file into *MS Excel*. Use 'edit' and then 'find' to enter key words to locate pictures which relate to your topic. Scrolling down the entries will give an idea of the terms used. You may wish to search for 'mountains'. When you see the word come up you can note down the file name from the first column. Alternatively you could add a key word into the 'Sorting Marker' column and then use 'data' and 'sort' to sort that column, putting all you labelled entries together for printing out. I searched for transport photographs and used 'ctrl C' to paste in the word 'transport'. When I sorted them by the 'Sorting Marker' column my selected entries were all put together so that I could find them. I chose 'Where' as the second field for sorting so that I could see which country folder I would find the photographs in.

Also included on the CD-ROM are some short videos, several to support work on Coll, and a few other which may be suitable for use in other geography topics. There is also a super PowerPoint presentation of one person's mages from a trip round the world.

Preparing the Photographs

Depending on what you want to use the photographs for, you may wish to crop or resize the images. If several images are going into one document or being hyperlinked onto a map you can resize the images using a paint package. To exclude certain aspects the images can be cropped. If a small part of an image means it cannot be used consider using a more advanced tool such as the *clone tool* of a paint package to digitally remove it. Blurring a section (the number plates on the vehicles of the Coll images have been blurred for privacy) can also be a solution. Mark the section then use the *blur* effect to only affect that selection. Use the *Help* menu of your paint package to find out how to use these tools.

Using Photographs

This section gives a few ideas and tips for using photographs in geography teaching and learning. The ideas are not new but may have developed with the advance in software and hardware.

To display the photographs as they are, use a paint package and browser, pop them onto pages in *PowerPoint* or use a slideshow program such as *PhotoJam*. *Windows XP* can display the photographs in a folder as a slide show. The advantages of the latter two are that they can be saved in a pre-prepared order and that the photographs come up ready screen-sized. They can also be made to scroll through the images automatically to engage pupils as they come into the room.

To display the photographs bit by bit in order to encourage predictions and promote discussion on specifics in the photographs the photograph can be partially blocked off. If using an Interactive Whiteboard use the *reveal* or *spotlight* functions. Work out in advance which direction of *reveal* will produce the desired effect. If using spotlight work out which parts to show first. The best images to use are those which give clues but are no too easy to understand when the whole image is not visible. See the Coll example below. One could ask:

> '*Where is this taken?*'
> '*What do you think is on the other side of the garden wall?*'

Remember to give plenty of time for thought and suggestions.

If an Interactive Whiteboard is not available mount edited pictures like those in Fig1 onto three pages of a *PowerPoint* presentation, thus revealing the image bit by bit.
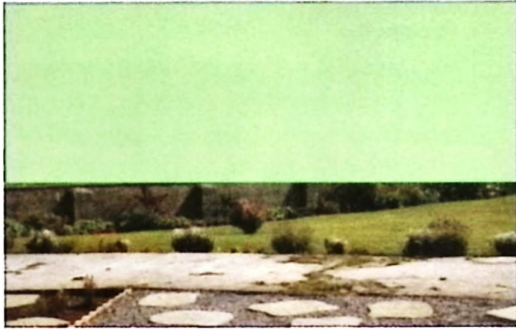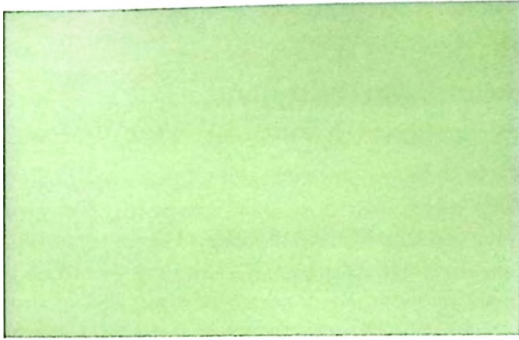
Fig 1. Using an interactive whiteboard to gradually reveal a photograph

You could even slide a block of colour out of the way bit by bit. The important part is the questioning and the resulting discussion. Ask for reasons for their answers.

'What in the photograph tells you that?'

Display whole photographs with room for annotations around them. Naturally this need not be digital. It could be done using an IWB, a digital projector and a program such as Microsoft Publisher or a large printout of a photograph and a Whiteboard with marker or flipchart. This activity can be used for class, group or individual work. It can also be differentiated by selecting a photograph of more or less difficulty and choosing whether or not to provide vocabulary.

Images can also be annotated using colour coding. Either using an interactive whiteboard or software with a digital projector photographs can be shaded using a highlighter pen tool. This could categorise land use, mark elements to do with transport, highlight river and water features etc. Aerial and oblique photographs are particularly suitable for this.

Two photographs can be compared alongside each other. This will be relevant in most locality studies where the distant region is being compared to the school's locality. Remember to identify similarities as much as differences. Also point out that just because something is not in a photograph it does not mean that it doesn't exist. A photograph can also be displayed next to a map of the

same area. Links can then be made between the symbols and the real thing. (See the *A Few Weblinks for Geography* document for websites to get maps from.)

Photographs can be used with hyperlinks (hotspots) in two ways. A map can be hyperlinked to bring up photographs, as in the case of the Coll resource. This enables children to make predictions about the meaning of the map and then try them out.

'This hyperlink is near the sea, what could it be?'

Photographs can also be hyperlinked. They can bring up writing, vocabulary, symbols, close-up images or video clips and sounds.

Photographs can be used to create activities, digital or otherwise. Snap, matching and memory games can be incorporated into topics. If produced digitally they can make excellent warm-up activities for the start of a lesson. They can also be used as a mini assessment at the end of a lesson.

Last but by no means least, make images available to the children for use in their own construction of reports. Multimedia documents will be enhanced by the inclusion of relevant images. Teach them how to navigate through folders to find the images they want. They may even be able to use the index to locate their own images. Seeing the images you give them could be a good way of encouraging to donate and collect images themselves. When they go on holiday they can research before they go what sights would make good geographical resources for sharing.

Building up your own resources

With the increasing affordability and ease of use of digital cameras obtaining good quality photographs has become much easier. There are also many sites which provide images for educational use. The Naace Primary website has several sets of excellent images which can be used in geographical topics. Look at the websites in the *A Few Weblinks for Geography* document to sta rt you off. Encourage children and their families to share holiday photographs with the school to build up a bank of useful images. Sort them into sensible categories which will mean they can be found and used. Build them into resources that are saved to be used regularly.

Conclusion

Many thanks to everybody who donated photographs. I hope you agree that they are a worthwhile resource for teaching of geography. Should you build them into resources you are proud of we would love to hear about it via the Naace Newsletter. You may even wish to share them using the *Teacher's Resource Exchange* at http://tre.ngfl.gov.uk/.

The photographs and videos are copyright of the people credited in the Excel file and to be used for educational non-profit making purposes only.

Geography and ICT: an antidote to 'flat and ordinary'?

Des Bowden and Pam Copeland
Newman College of Higher Education

'Throughout a child's time in primary school too much of the teaching in geography, history, art and design, music, physical education and religious education remained **flat and ordinary'**
David Bell, Head of Ofsted reported in Daily Telegraph 5 Feb 2004.

Primary teachers will be up in arms about this statement. They will point to exciting and challenging lessons in which they have encouraged children to be creative through fieldwork, practical activity and geographical enquiry. They will demonstrate how they have used the thinking skills to help structure their lessons, and how the children have learnt through geographical investigations about the local area and farther afield. The success of Barnaby Bear, the locality packs such as Tocuaro (GA), Santa Lucia (GA) and Chembakoli (Actionaid) highlight the idea that geography at its best can be stimulating, mind broadening and the very essence of experiential learning.

However it has to be recognised that most people who teach geography at primary level are not geography specialists and that many are not excited by the subject. This tendency is likely to continue with the decline in geography at ITT institutions (GA Teacher Education Working Group 2004). Further, the subject is marginalised in some school timetables to ¾ hour per week, or not covered every term. Children often have to end geography before their learning (or work) is complete, because of the time constraints on the primary timetable. The focus on literacy, numeracy and possibly science, leads to less emphasis on a range of foundation subjects including geography and has had the effect of 'forcing' the straight jacket of the three part lesson onto the foundation subjects.

In short, geography in primary schools is faced with the following challenges:

- Shortage of meaningful subject time appropriate for the creative task in hand
- Lack of subject expertise
- Competition from other subjects
- Poor appreciation of its value

DfES Documents give teachers the freedom, flexibility and encouragement to:

- take a fresh look at the timetable, the curriculum and the organisation
- develop the school's own identity
- use the Early Years Areas of Learning and Programmes of Study as outlines for what is to be taught
- make learning vivid and real: enjoying and challenging
- use plans that work for individual teachers, not plan alone and not start from scratch
- regard Foundation Stage document and QCA Schemes of Work as reference tools which schools may ignore, engage, adapt and pick and choose
- be innovative in timetabling
- be innovative and creative in their teaching

Fig 1.   Summary of DfES thinking on Curriculum innovation from recent documents

The Geography QCA units go someway to providing guidance as to what can be achieved, but progress is often hindered by the compartmentalised timetable. One of the cures for this may lie in the area of combining subjects, to maximise time and learning purposefully. The ICT units can be seen as a graduated set of skills not directly related to other work in the primary curriculum; for example, why produce birthday cards (ICT QCA unit 3a Combining text and graphics), when the same ICT skills could be used to produce a flier for an estate agent selling houses in the school's locality? This would be appropriate if the focus of the geography work was QCA Unit 6 (year 3) Investigating our Local Area. Teachers only need to be encouraged to use some creative thought to plan the age-related skills to meet the requirements of the topic they are doing.

The ICT curriculum may be summarised as:

- A set of graduated skills
- Abstract activities not necessarily related to rest of primary curriculum topics
- Lack of purposefulness, often just skills practice

However there are solutions to these problems provided teachers are prepared to think and plan imaginatively.

Recent official publications, notably *Designing and timetabling the primary curriculum* (QCA, 2002), *Excellence and Enjoyment: a strategy for primary schools* (DfES 2003), *Primary National Strategy: Learning and Teaching using ICT* (DfES 2004) and *Effective Use of ICT in Subject Teaching (Primary)* (Becta 2004) provide teachers with the opportunity and encouragement to think creatively about how they deliver the National Curriculum (summary in fig 1). No longer do the primary subjects need to be taught in isolation. Primary

children do not necessarily learn best in a subject led curriculum, their learning is naturally more holistic. Teachers know this, but have been forced into subject straightjackets by their perceptions of the demands of both the National Curriculum and indeed Ofsted.

If geography and ICT lessons could be combined, that is integrating elements of learning from the Geography QCA units with the ICT QCA units for the same age and level, then this allows, particularly in schools with more flexible timetable arrangements, for 1½ to 2 hours to be set aside for the integrated geography and ICT activities. This cross-curricular approach fits in well with the policy of making most of flexibility in the curriculum.

"The national curriculum is specified as separate subjects but schools are not required to teach the subjects separately... Each school is free to decide how the curriculum is organised and taught." (QCA 2002 p.11). Not only does it follow the current climate of opinion, which is increasingly concerned with linking subjects meaningfully, but also makes the learning for the pupils more exciting, creative and relevant. The DfES encourages schools to make their own decisions about how long to spend on each subject, teachers need to be reminded that the QCA guidance is not statutory and schools are not required to teach subjects discretely (DfES 2003). This should not be seen as a rush to return to the 'driftwood and drapes' topic approach of the 1970s and 1980s which was unstructured and difficult to assess both for achievement and particularly for progress. But more of a movement away from the 'secondary' style of primary timetables towards structured integrated work which is assessable, stimulating and hopefully more relevant to the learning style of younger children (fig 2).
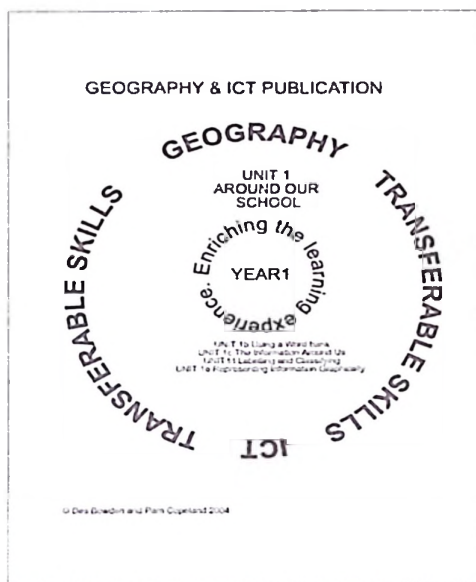

GEOGRAPHY & ICT PUBLICATION

Fig 2   Schematic integration of ICT with Geography QCA Unit 1 Around our School with relevant parts of the ICT QCA Unit 1.

A new publication, *Technically Geography*, has been designed to overcome these challenges for both geography and ICT. The idea is to give the geography a sense of purpose and modernity and to give the ICT a context and a real use so that its value can be understood in the context of a real issue.

The detailed lesson/session plans can be used by teachers with any level of geographical knowledge and provides opportunity to experiment and experience ICT. True the expert geographers will probably adapt like mad but others will find help and support in the structured lesson plans. *Technically Geography* for Yr1/2 is based on the geography QCA units (units 1, 4, 5 and 22) and their respective key questions, but matched to learning objectives in the ICT QCA units appropriate for age and content. The sessions are based on enquiry and investigation, with fieldwork and groupwork being actively encouraged alongside the relevant use of ICT. Some sessions with involve role play and the imaginative use of school visitors.

Technically Geography does not cover all the QCA questions through Geography and ICT, and teachers will still have to plan for parts of the units with separate geography and ICT lessons. But where appropriate the two subjects are integrated to enhance learning, excellence and enjoyment in both.

One of the principles of teaching and learning (DfES 2003) encourages teachers to *"make learning vivid and real: develop understanding through enquiry, creativity, e-learning and group problem solving" (DfES 2003 p.29).* The series of *Technically Geography* aims to do this. Each volume contains 20 structured lesson plans which identify the purpose, key QCA questions and resources needed. Each lesson suggests extension ICT activities which may stretch the more able or allow better equipped schools to develop their ICT capabilities.

The thinking behind *Technically Geography,* and various other recently published media, enables all teachers to move from the 'flat and ordinary' to the dizzy heights of excitement and extraordinary learning and teaching.

References

1. DfES 2003 *Excellence and Enjoyment: A strategy for primary schools* DfES Publications (ref DfES/0377/2003)

2. QCA 2002 *Designing and timetabling the primary curriculum* QCA London

3. *Primary National Strategy: Learning and Teaching using ICT* (DfES 2004)

4. GA Teacher Education Working Group (2004) *The state of primary geography in ITE* Primary Geographer No.53 January 2004

5. Des Bowden and Pam Copeland (2004) *Technically Geography: Lessons combining geography and ICT for Y1/2* Geographical Association, Sheffield

6. Des Bowden and Pam Copeland (2004) *Technically Geography: Lessons combining geography and ICT for Y3/4* Geographical Association, Sheffield

7. Alan Rodgers and Angella Streluk (2002) *Primary ICT Handbook, Geography,* Nelson Thornes

8. Becta 2004 *Effective Use of ICT in Subject Teaching (Primary)* Becta Ref: 15146

This article first appeared in Primary Geographer in 2004, © *Geographical Association (www.geography.org.uk).*

Visit the Isle of Coll

Alan Rodgers and Angella Streluk
Alan Rodgers is a freelance ICT consultant and Angella Streluk a primary school teacher. They have written a number of geography books for primary school children, and have edited this publication.

On the CD-ROM are a selection of resources intended to be used with the QCA Geography 'Island Home' unit or Scotland - 5-14 Guidelines Environmental Studies – People and place. Level B/C – The physical environment and the human environment. Despite one intrepid explorer having a broken leg the authors managed the many miles to Coll and back. It is hoped that these resources will enable KS1 teachers to teach the unit in a more meaningful way. The resources may also be useful for KS2 pupils to revisit the topic in the light of their learning since KS1. The nature of the island may mean that there are resources to support work on coastal features or aspects of geology.

The resources

Coll photographs

These photographs were taken by the authors in August 2004. They were selected to support the QCA unit of work. A selection of these photographs could be printed and laminated for use away from the computer. Extra information on the photographs and about the island is included in the *Photograph Index*.

Vocabulary can be included at the side of the photograph to make an information place mat!

You may wish to print out photographs and put them onto a large wall map of the Isle of Coll. They can also be used to help the children paint their own versions of key features to go on the wall map.

The photographs and videos are copyright of the authors and to be used for non-profit making purposes only.

Coll Videos

These are supplied in two formats, small and large. The videos can easily be built into a *PowerPoint* presentation.

Hyperlinked maps

These have been produced to fit in with sections of the QCA unit. The map is greatly simplified but has the geographical features such as compass rose and scale to make it appropriate. Although they are generally based on accurate information some items may have been relocated to produce a better resource (so don't use them on a visit to the island!) Turn the sound on ready for the surprise video in each presentation.

- *Coll – PowerPoint 2002* presentation, *PowerPoint* Show and *PowerPoint* web page. The presentation can be edited to fit your needs. The show enables a single click to set the show going. This is good for the children if they are going to explore the island independently. Should you not have access to PowerPoint you can use the web page version. Two maps, the whole island and the village, have been hyperlinked to bring up photographs and information.
- *CollTransport* – As above but only showing links which relate to transport. Try to think of those in the local area which do not appear on Coll. Are they not on Coll or is there simply not a photograph of one included? Discuss.

- *Coll Jobs* - As above but only showing links which relate to the jobs on Coll. Compare these in discussion to those n the local area. Some will be similar others will be different.

Coll Weblinks

This is a list of weblinks for information, images and activities to support the making of resources and teaching.

Other useful resources

- Although the main resource suggested is *Katie Morag and the two grandmothers* by Mairi Hedderwick her other books also have something to offer to the island study. See a list on the *Kids at random house website*
- *Discover Coll*, leaflet produced by Scottish Natural Heritage
- *Coll and Tiree*, Explorer 372, Ordnance Survey map
- *The Coll magazine,* a yearly publication available from most island outlets
- *The Oban Times,* this newspaper gives a feel for life in the highlands and gives news from the various isles.
- *Kids at random house website*

  http://www.kidsatrandomhouse.co.uk

  Katie Morag resources, Search for 'Morag' to find the right page. There are lots of ideas here including printable photocopiable pages to support the books. These are well worth looking at.

Notes to support the resources
Unit 3, An island home, Year 2

Before using the resources get to know the photographs and where the links you consider most useful are. Check that the files run on the computer you are going to use. If the children are going to use them independently save the files where they can access them. Modify the text to suit your needs. Prepare specific questions for each unit depending on how this locality contrasts with that familiar to the children.

Where is Struay and what is it like?

Use maps, atlases and the *Coll Digital* website http://www.colldigital.co.uk/isleofcoll.php to locate the Isle of Coll. Point out the locations of the school on a map of the British Isles and then gradually zoom in to the Isle of Coll itself.
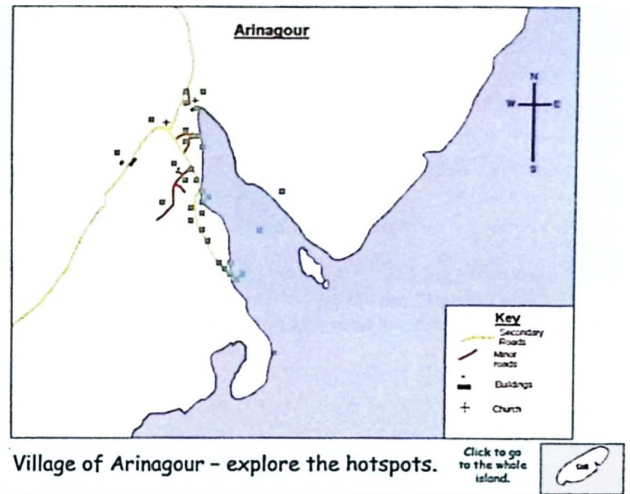

Village of Arinagour – explore the hotspots.

Fig 3. The hyperlinked map of the village on Coll

Fig 2. Two of the shops on Coll

Explore the hyperlinked maps. There are two maps, one of the whole island and one of the village. Use the small map icons to switch between the two and to return to the map after discussing the photograph. Be sure to let the children play a part in clicking and deciding where to click. Make a list of the words to describe the photographs, writing them in columns for 'human' and 'physical'. If using an Interactive Whiteboard use a page ready prepared for recording this. Encourage discussion to help the children sort out the difference between human and physical characteristics of an environment.

- Who put these rocks here?
- What are these fences used for?

Transport on the Isle of Coll

Like many people, this island cat walks on Coll.
How else can people get around and to Coll?
Find out by investigating the map.

What type of transport is used to get to and around Struay.

Look at the map of Coll. Ask the children what the blue colour round the island means. An excellent island picture can be found in 'Katie Morag's Island' in *The Big Katie Morag Storybook*. This shows what is under the sea round the island, including the fact that an island is like a mountain sticking out of the sea. The next page shows a map of Struay, with clear similarities to the Coll map.

- How do people cross water?
- What vehicles do they use?
- How do people get to Coll?

Investigate further on the PowerPoint hyperlinked island map itself. Locate pictures of different forms of transport.

- Why are these suited to the island?
- Are there many of them? Why? Why not?
- Which forms of transport do we use which are not on Coll or are less common there?

Who lives on Struay and what work do they do?

As a result of reading the Mairi Hedderwick books, discuss what jobs there might be on the Isle of Coll. Investigate the map and discuss how buildings and objects can also give us ideas of what jobs people do on Coll. Use the PowerPoint presentation. Either use the map or simply click through the slides and discuss them.

- Who will work at the medical practice?
- What is the fishing boat used for? Who uses it?
- What happens to the letters once they are put into the postbox?

It is interesting to note that in real life on Coll, people often have more than one job in order to earn a living. Also opening hours and hours of work are geared towards island life, with businesses such as the Pottery opening when the ferry is in, and therefore when customers are likely to be about. This is the same for the fuel station.

How is Struay similar to and different from our own locality?

The printed out photographs of Coll may help to make this task more practical. Select some items that appear in both localities and some that are only on Coll. Likewise include some aspects of the home locality that cannot be found on Coll.

- Does Coll have a railway station?
- Can we travel by ferry?
- How many shops have we got near the school?
- Where is the secondary school?
- How many traffic lights and pedestrian crossings are in each location?

In fact children on Coll have to go to the mainland and stay in a hostel when they reach secondary school age.

What do I like and dislike about Struay? Would I like to live there?

A slide show made from some of the photographs may prompt discussion on this topic. Include a mixture of local photographs and photographs of Coll. A folder of photographs can easily be displayed as a slide show using Windows XP.

- Does this make you think of something you like or dislike? Why?
- What does this show?
- Can this be seen in both places or just one?

Using Photographs and videos

More ideas for using the photographs can be found in the article "More than Meets the Eye" on this topic, on page 16 in this publication.

Interactive Weather

Alan Rodgers
ICT Educational Consultant

This article mainly focuses on the Naace website Weather Project at http://mikematson. co.uk/weather/ and various opportunities for sharing basic school weather data collected by children. Many thanks go to Mike Matson for the construction of a web resource that will allow schools to share their own data and data entered by other schools.

The study of the weather with children is an exciting and rewarding activity. It offers children an insight into the many wonders of the natural world and an opportunity to investigate real data for themselves. The links with science and maths gives it triple value in the curriculum.

Any location study will be improved on by enquiring about the type of weather that is found there and comparing it to your own and other locations. Similarly comparisons between seasons will give an indication of climate.

The topic of the weather is especially enhanced by using ICT. It can be a powerful means for pupils to collect, record, analyse and compare a great deal of material. With such a mass of data, ICT is the perfect tool to generate meaningful information from analysis. The data also offers a means for experimental manipulation of raw data by analysis and presentations.

The Naace Weather Project

This is a facility whereby schools can register and enter their own weather data to be shared with the rest of the world. Alternatively they can view other school's weather data online or download it for analysis.

Shown below is a screen shot of the presentation of a school's data. All the usual features are there such as the location of the weather station and the type of weather data.

Having selected a school, the data entered so far is displayed. This can then be exported, manipulated and graphed. The data fields can be seen below, including the units of measurement. For those wishing to enter data, guidance on these measurements and the instruments suitable for use in schools can be seen at

http://www.amingtonheath.staffs.sch.uk/ hints.htm

This website also gives guidance setting up a weather station and on the difficult task of cloud identification.

Simple graphs can be accessed of the temperatures, air pressure, rainfall, humidity, wind direction, wind strength cloud cover and cloud type. Using this facility gives children entering data a chance to error check their data collection and entry. Any obviously unlikely data will stand out when graphed. The way the maximum, minimum and current temperatures are graphed together also assists in checking data. If the maximum line crosses the minimum line it is obvious that an error has been made. Likewise the current temperature can only be within the maximum and minimum lines or the same as one of them. The example shows how the temperatures are graphed.
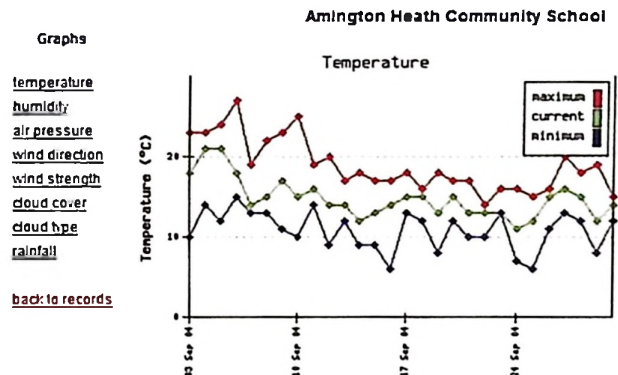
To join the project send an e-mail to
alanrodgers@cirrus.me.uk
and you will receive further instructions, a user name and a password. Anyone can look at the data and see what kind of weather other schools are enjoying. You can also download a school's data in csv format to load into a spreadsheet program. On the CD-Rom is an Excel file (*autograph*) into which the data can be pasted. This automatically graphs the data in a useful way to aid interpretation.

It is hoped that many schools from around the world will enter data either regularly or for the period of a particular project or topic. If the weather monitors are well trained they can become quite dedicated and happy to continue with the responsibility for the whole year. They then only need occasional monitoring and regular encouragement. If they do well there are regular projects they can take part in and they can be rewarded by whatever motivational system the school has. The chance to use special digital apparatus has also proved to be a good motivation. One school's monitors were highly motivated by the opportunity to use a digital wind strength-measuring device.

There are a great many weather web sites, some of which provide weather data. See the file *A few Weblinks for Geography* on the CD-ROM for some of these. They can also help with ideas for weather measuring apparatus, digital and non-digital, advice, satellite images and weather clipart. Webcams, although they have to be used with great care, are a good way to see both the weather elsewhere but also can be used for work on seasons and time zones. There are also regular weather activities that children can take part in.

The CD-ROM has nineteen years of basic weather data collected from a site in Tamworth, South Staffordshire. The data is in the form of MS Excel files. Please see the Readme files on the CD-ROM for a full explanation of the files. Empty MS Excel sheets of various degrees of difficulty are on the disk which users are free to modify and use. Some sheets are a simple form of the more complex files, which are available. A lot of the features on the data chart have graphs, which are generated from the data. There are many educational opportunities that can be exploited to show how to look at data from many points of view, such as noting if the minimum temperature should always stay below the maximum temperature. The data was collected at 9.00 GMT on a weekday. The data is filed by months for easy comparison.

In brief the main weather data features that are collected are

- Date   The day in the month
- Max. T.   highest temperature for the last 24 hours.
- Min. T.   lowest temperature for the last 24 hours.
- Dry T.   dry temperature.
- Wet T.   wet temperature.
- Hum.   humidity calculated from the dry and wet temperatures.
- Press.   air pressure reading in mB.
- Wind D.   wind direction.
- Wind St   wind strength as measured on the Beaufort Scale.
- Cl.am.   amount of cloud cover, measured in Octas.
- Cl.Ty.   main types of cloud.
- Rain   amount of rain collected in a rain gauge for the past 24 hours. This is measured in mm. (T = total rainfall)
- Snow   height of snow, measured in cm.

This data is usually uploaded to a web site at

http://www.amingtonheath.staffs.sch.uk/data6.htm

It is good to know that the data you put so much effort into is reasonably good quality. Collecting weather data can be a very expensive activity if you buy the most expensive equipment available. However, for a modest outlay, some quite respectable equipment can be brought and set up where it will not be disturbed. Basic kit would be:

- A thermometer, preferable that has a clear Celsius scale marked on it
- A Six's maximum and minimum thermometer
- A hygrometer
- A Stevenson Screen, painted white and not mounted on a wall but on a stout post at 1.2 metres above the ground. Its main purpose is to allow the cold and warmth to penetrate whilst preventing direct sunshine, wind or rain. This is done by having angled slats around the sides, and a double roof. The door should face north.
- A barometer (this is usually indoors.)
- A rain gauge
- A wind vane

If the money were available then the weather watcher would benefit from buying some more complex equipment, which will collect more accurate meteorological data. Some digital equipment can collect masses of data that can be easily imported into spreadsheet programs, thus rendering the data to close scrutiny through the use the many features such as graphs, automatic averaging, maximum's finding, etc.. Some devices can be mounted on the roof such as the Weather Reporter but smaller items that will fit in the pocket such as the Kestrel series of environmental monitoring devices. Wireless weather data collectors are now also readily available. Despite the attraction in using digital instruments for weather data collection it must be remembered that more traditional instruments also have their place and that children will benefit from learning how to use them. Also any weather data, however it is collected, can be entered into a spreadsheet.

It is clear that ICT has become part of the study of weather in many ways. From collecting weather data to observing conditions to analysing the data and much more. I have always been a keen advocate of weather studies and often meet ex-pupils who are gown up but still remember with pleasure the fun they had collecting weather data.

Links

http://www.advisory-unit.org.uk/w_report.html for the Weather Reporter
http://www.r-p-r.com/ for Kestrel environment monitors

http://www.philipharris.co.uk/ for ideas on weather instruments

Where in the World is Barnaby Bear?

Yvette Blake, St Philip (Westbrook) Cof E Aided Primary School, Warrington.

Many Key Stage One teachers will be familiar with this QCA unit for geography. It features a small teddy bear called Barnaby, who enjoys travelling and sharing his adventures with the children through the postcards, letters, emails, diary entries and even artefacts that he sends to them. Find out about his adventures at a one keen primary school.

Curriculum References

Geography QCA Unit 5. Where in the world is Barnaby Bear?

Geography QCA Unit 1. Around our school - the local area

Both from

http://www.standards.dfes.gov.uk/schemes2/geography/?view=get

These ideas can also be used to support other locality studies.

At St Philip's we have been very fortunate as Barnaby has visited our school on two occasions - both times spending the summer term with us so that we could help him learn about our locality. The first time he travelled from Dublin, arriving at school through the post – which was an exciting if somewhat nerve wracking experience! The diary of this adventure can be found on our school website. At that time a friend of his, Paddington Bear, was also visiting this country and was busy posting his diary on the MAPE website. The children really enjoyed comparing the adventures of both bears, especially as Paddington travelled all over Britain from Cornwall to Scotland, visiting children in many different schools.

This project offers the children many opportunities to learn and use a range geographical terms and identify different geographical features both human and physical, to compare locations, and use maps and plans together with developing themes such as travel and weather. The combination of using his travels abroad with a visit to the children's locality enabled us to use both first hand and secondary sources. For example each child wrote a letter to Barnaby asking him to stay for the night. However, Barnaby required very good directions and even a map to the child's house in order to ensure a safe arrival. They also children invited Barnaby on many exciting excursions, including visits to Liverpool, Manchester, Southport, London and even holidays in Cornwall and Spain. Wherever he travelled Barnaby took with him a rucksack containing a notebook, pencil case and disposable camera to help him record what he did and saw.

In school the children used the digital camera extensively and we found that this helped both in sequencing his recounts and also in constructing simple maps and plans of the places he visited.

Setting the scene for Barnaby's arrival was as important as his visit to the school. It encouraged a level of dialogue and questioning, usually via email, with Barnaby wanting to know things such as what clothes to pack, how and where to travel. This sent the children searching through atlases to plan his journey send him a passport, organize his visit etc. They also wanted to know what he liked to eat and what his interests were! On his second visit Barnaby sent us extracts from his travels in America where he had been accompanying my daughter on a trek from New York to Los Angeles. Examples of her photographs and diary extracts have been included on the CD. I supplemented these with maps from the internet and postcards from the different places. These have not been included because of copyright issues, however it is easy to add further pictures from additional sources. I encouraged the children to think about what they already knew about America and what they learned about the country from the pictures that Barnaby sent. His visit to Disney Land was very popular and we were particularly impressed with the contrast between the cities and the countryside.

For our purposes the pictures were divided into four groups (arriving at different times), were shown as a slide show and were later used in a Textease picture gallery for the children to select and use in either a sorting, labeling, caption writing or descriptive writing activity. Teachers altered Barnaby's diary to include their own particular teaching points, for example as we were linking our exploration of Westbrook to science work on habitats, Barnaby mentioned the animals he saw in America whenever possible. The scope of the project was limited only by our imaginations as Barnaby developed into quite a character. Not surprisingly his favourite food turned out to be chocolate birthday cake!

Please note *Barnaby Bear* is a registered trademark of the *Geographical Association*.

Resources:

For Barnaby's adventures in Warrington visit our school website,
www.stphilipwestbrook.ik.org
select children's work, infants and then Barnaby's visit.

For Paddington's adventures visit the Naace website at
www.naace.org
Click on 'Curriculum Resources' follow the links and select 'Archive', from the Primary menu, then have a look at the Paddington Bear Project

For further Barnaby resources which include several small and big books and the Barnaby puppet contact the Geographical Association,
www.geography.org.uk

Visit the shop to see the Barnaby Bear resources. See also
www.barnabybear.co.uk

Route Planner:
Using A Web-based Resource to Develop Knowledge and Understanding of Places

Geoff Davies
ICT Co-ordinator, Grange Primary School

This article describes an activity used with a Y4 class when studying a contrasting locality. The school is located in a suburb of Swansea. The locality used as a comparison is the rural and coastal village of Oxwich, located some 10 miles to the west of the school on the Gower Peninsula. The activity gave the opportunity to develop the children's geographical skills and knowledge whilst developing their use of ICT. As well as the use of the Internet, the activity integrated other ICT applications into the work, including a spreadsheet and wordprocessing/desktop-publishing package.

Geography develops knowledge and understanding of places and environments throughout the world. Progression in the primary geography curriculum sees pupils develop an understanding and knowledge of places, initially through the study of their immediate environment (often the school), developing through the study of their locality and a contrasting locality in the UK by early KS2, and usually culminating in the study of a less economically developed country at the end of KS2. In response, commercially produced resources have been developed around such places as St Lucia and Llandudno.

Yet teachers' choices of places to study should not be constrained by popular choice or the availability of such commercially-produced resources. The Internet provides ready access to a wide range of information in the form of images, numerical data and text. This information can be utilised by teachers to support the study of their own choice of places. Provided that curriculum requirements are met, the availability of such information enables teachers to customise a study and tailor it to the interest and ability of their pupils and to any required learning outcomes.

Described below is an activity which I have used with my Y4 class when studying a contrasting locality. My school is located in a suburb of Swansea. The locality we made a comparison with is the rural and coastal village of Oxwich, located some 10 miles to the west of the school on the Gower Peninsula. (Photographs of Oxwich are available on the CD-ROM) The activity gave me the opportunity to develop the children's geographical skills and knowledge whilst developing their use of ICT. As well as the use of the Internet,

the activity enabled me to integrate other ICT applications into the work, including a spreadsheet and wordprocessing/desktop-publishing package.

NB: The activity referred to in this section is available on the accompanying CD-ROM. If you do not have Softease products installed on your computer, TeViewer is available at:

http://www.softease.com/pc.htm

1. Route Planner:

The activity required the children to produce a matrix to indicate relative distances between the locations we were studying. I began by showing the children an example of one I had prepared for an earlier project: (see fig 1)

fig 1 A matrix showing distances between locations

We discussed the way the information was organised. By working through a set of comprehension questions with the class, I was able to determine how well the children understood the data in the matrix. In order to answer the questions the children had to refer to the matrix and make the necessary calculations. I also showed the children the 'Route Planner' which would act as a 'ready reckoner' and allow them to calculate or check the respective distances. I had prepared this earlier using a spreadsheet: (see fig 2) Older children could prepare their own version applying the correct formulae.

Route Planner

fig 2 'Ready reckoner' prepared using a spreadsheet

I asked the children if they knew how I had worked out the various distances shown on the matrix. One girl suggested that I had measured the distances using a map of the area. I acknowledged that a map could have given me this information but admitted that I hadn't used one. When I asked for further suggestions one boy mentioned that I might have used the Internet. Asking him to expand on this, he told the class how his father had gone on to the Internet a few days previously to plan their family's forthcoming journey to France. I confirmed that this was the method I had used to calculate the distances and we moved on to the next part of the activity.

I explained to the class that they were now going to make their own matrix to indicate the relative distances of our school and the villages on the Gower Peninsula. We were going to use Textease 2000, Textease Spreadsheet and an application on the Internet called 'Route Planner' which the boy's father had used to obtain a route from Swansea to the south of France. The children were going to work in pairs at the computer and I reminded them of their obligations

under the school's Acceptable Use Policy. I then set about showing the children how to access and use this web-based resource:

(One of a number of its type available, I chose to use the route planner provided on the *AA's* website which I had bookmarked for ease of access and to minimise the risk of the children entering inappropriate sites:

http://www.theaa.com/travelwatch/planner_main.jsp

Using an interactive whiteboard, I demonstrated to the whole class the process they would have to follow in order to carry out the task. First of all, I explained how they would have to enter details of the journey's starting and finishing points on the first page of the 'route planner'. This information could be entered either as a place name or as a postcode. I made a postcode directory available for the children's use: (see fig 3).

fig 3 *A directory in Route Planner for finding a route by entering appropriate postcode.*
Image: Automobile Association Developments Ltd 2004 LIC037/04 Crown Copyright. All rights reserved. Licence number 399221

Once they had entered the necessary details they would have to confirm that the information was correct. The stage of the process threw up an important issue during the demonstration. As the destination name was shared by a number of places around the UK, we were asked subsequently to confirm exactly where our destination was. A button on the page allowed us to call up a map for confirmation of this: (see fig 4)

fig 4 *Checking the destination on the map*
Image: Automobile Association Developments Ltd 2004 LIC037/04 Crown Copyright. All rights reserved. Licence number 399221

Once the children were satisfied that they had the correct destination, they would be asked to confirm their choice and in the next window the distance and travelling time to the destination would be revealed. (see fig 5)

fig 5 *Distance and travelling time on Route Planner*

Once the mechanics of the process had been explained, it was time to organise the class. The children were going to undertake four geography activities over a four-week period. I divided the 24 children into 4 groups of 6 and allocated each group one of the four tasks. The group given the route planner task were allocated three computers and subdivided into pairs. I explained to this group that I wanted them to model the presentation of their information on the matrix I had shown them previously. I provided them with an OS map of the area, a postcode directory, a list of the villages in question and the URL of a website from which they could obtain a map of the area to drop into their presentation. (An example of one of the group's work is contained on the accompanying CD-ROM. It has been left it in its unedited form to show what was genuinely achieved by two Y4 children with limited teacher intervention.)

Extension Activities:

- Older children could use a spreadsheet to create their own "ready-reckoner"
- The data could be incorporated into a spreadsheet to calculate such information as total distances, max/min distances and average distances.
- As the route planner provides a journey time as well as distance, a spreadsheet could be used to calculate speed
- The router planner can also provide a description of the journey in text form. This could be used to develop the use of instructional text and directional language. The children could plan routes around their school, taking appropriate measurements and giving instructions for the various stages of the journey. They could even calculate walking times and speed. e.g. How far is it from Mr Jones' classroom to the dining-room. Give someone written directions for this journey.
- Children could use the scale on a map to calculate distances and make comparisons with their results and the distances provided by the on-line route planner.
- Children could devise a set of comprehension questions based on the data collected.
- Schools could share the matrix and exchange sets of questions and answers based on the data.

Geoff Davies, ICT Co-ordinator
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On the CD-Rom

The CD-ROM that accompanies this publication contains a wealth of resources to accompany the artlcles.

Barnaby Bear
Folders of pictures used in the Barnaby bear topic described in the article 'Where in the World is Barnaby Bear'.

An itinery of Barnaby's trips as described in the article.

CD Version Articles
A few Weblinks for Geography – This document contains many websites useful in the teaching of geography. They are sorted into rough categories for ease of use.

GIS use in Primary Schools with tables, includes the tables mentioned in the printed version.

Llandudno CD-ROM version with images lists, more images and history links.

Interactive Weather Files
Weather data, in Excel format, for Tamworth Staffordshire. Files are sorted into folders for each month of the year. Each folder contains several years of data.
Excel files
Activities

Photographs
Folders of photographs in jpg format. Images are sorted into folders for each country represented. Within some folders are some sub-folders containing sets of images from a particular location. One folder is included for weather images.

Photograph index in Excel format, with image credits.

Folder, JT World Trip, containing a PowerPoint presentation of one person's round-the-world trip. The folder includes notes explaining who created it and where it came from. The presentation contains some super images.

Route Planner
Grange School Locality – This folder contains examples of materials used to explore the school area. This was then used to help contrast the locality further afield which was used for our study.

Route Planner 1 - a folder of examples of the children's own work as mentioned in the article. This is in Textease format. A viewer can be downloaded from the Internet if needed.

Gower matrix - a file which was created by two children in the class and referred to in the article.

Videos
Coll videos – Folder containing a small number of videos which can help to make an activity more interactive. These are saved in two formats, small and large.

Other videos – These are a few other videos which may support various topics.

Visit the Isle of Coll
Coll – A PowerPoint presentation with two hyperlinked maps. The whole Isle of Coll and the map of Arinagour have hyperlinks to take the user to pictures and text.
Coll Jobs – This is a slightly different version intended to be used to help investigate what jobs people do on Coll. The text is a result of a visit to the island and helps give an insight into island life.
Coll Transport – This version is intended to help investigate transport on Coll.
Ferry Coll – this video clip needs to be in the same folder as the PowerPoint presentations so that the video on one of the pages can run.
(Many images of Coll are included in the Photographs folder. They are in their own folder in the Scotland Folder.)

Web Links for Geography

On the CD-ROM you will find a document with hyperlinked web links. These web links may provide useful material to support geography teaching. Be aware both of copyright issues and of the care needed in supervising children's access to the Internet.

Categories include
- Sources for geographical images
- Sources for maps and satellite images
- General geographical sites
- Websites for information on countries
- Sites to support QCA units
- Early years
- Weather Websites
- Environmental Data Websites
- Webcams
- Online Games and Activities

For more ideas on using the internet in geography see the BECTA booklet *'Using Web-Resources in Primary Geography'*. Copies can be obtained from BECTA, Tel. 024 7647 6885. This BECTA pamphlet is available online via the Becta website.

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Primary Focus is published three times a year by Naace in Spring, Summer and Autumn terms.

Naace is the key professional association for everyone concerned with advancing education through the appropriate use of ICT.

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Printed by:
Hawthornes, Palm Street New Basford, Nottingham, NG7 7HT

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