

Primary Focus on Art and Design and Design Technology

Spring 2006



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Introduction

Welcome to the Naace Primary Focus on Art and Design and Design Technology.

It is hoped that these articles will prove an inspiration for teachers. Sincere thanks to all who contributed. The articles exemplify creative teaching and offer many ways of embedding ICT into the Art and Design Technology curricula.

As so many teachers now have access to interactive whiteboards, their teaching of subjects such as Art and Design Technology can be greatly enhanced by visiting the many wonderful websites available out there. Glynis Hart's article on NGfL websites should prove very useful in this respect.

I have thoroughly enjoyed reading and contributing articles for this publication and hope you will find them as enjoyable as I have.

Rosemary Gledhill

About the Editor:

Rosemary Gledhill is Art and Design, Design Technology and ICT Co-ordinator at Jessie Younghusband School, Chichester. She is a long standing Primary School teacher and has taught most primary ages and combinations. She is a member of the Naace Primary Working Group. Rosemary has also worked on the QCA ICT Scheme of work – contributing to the publication on alternative embedded tasks. She was instrumental in setting up and maintaining her school's website, which was won numerous awards. At the present time, she is also working in a consultancy role for West Sussex Schools Improvement Service, offering support and training to teachers on the use of interactive whiteboards.

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Guest Editor: Rosemary Gledhill

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Using ICT in Art and Design and Design and Technology to Develop Pupils' Creativity and Imagination

Caroline Atherton

Prior Learning

My Year 5 children had a range of skills, ranging from competent users of computers to those who had the ability, but not the confidence to be daring enough to experiment. The children had in previous years used two Art programs: Primary Paint and Dazzle Plus. Both had developed the children's skills in using paint programs and it was important that they realised the limitations of using such programs if they wanted to extend their skills further.

The children's prior experience in D & T was somewhat varied. It was therefore important for me as their class teacher to spend a lot of time on developing and extending their skills of these children before introducing them to new topics. As the planning had a cross curricular theme it was interesting to see where Art and Design would come in. It was important that the links were not tenuous. I adapted the long-term plans so that the children could revisit their work on 3 dimensional Art. This would be an area that would not be taught again in Year 6.

So with these ideas in mind the children needed a topic that could be taught easily enough for the graphics package work to be understood but also a topic that could extend further their skills in D & T and Art and Design through a creative and innovative approach.

The topic of the Aztecs had two requirements. For the ICT and D & T aspect the children would be asked to design and make their own temple grounds for a sacrificial ceremony, based upon the Mexican Temple, "Chichen-Itza," using an object based graphics package, in this case a Computer Aided Design program from Lessonmaker.

In Art and Design the children had been asked to make a mask for an Aztec warrior to wear at the temple where the sacrificial ceremony would take place. They had completed this work prior to undertaking the D & T part of the project.

Together these tasks would demonstrate the children's historical understanding about the Aztecs and extend the children's creative skills in ICT, D & T and Art and Design.

It was vital that the children had access to all the relevant resources needed to complete successfully this unit of work and it was, therefore, important that the children thoroughly planned their own resources needed to complete the tasks asked of them - an extremely important part of the Design process.

Learning Objectives

The children's topic for the Summer term was the Aztecs. This fitted in brilliantly with all three areas.

D & T Unit of work: Focus: Structures

ICT Unit of work: Graphic Modelling Unit 5A

Art Unit of Work/ Aspects of Art applied in Unit of work: Working in 3 Dimensions

The learning focus was based upon the D & T objectives and also objectives from the ICT QCA scheme of work 5A Graphical Modelling.

In D & T the children were going to extend their skills by

- showing their design ideas on paper,
- joining and cutting paper, card, wood and plastic in different ways
- learning how to use different finishing techniques.

In ICT the children were going to use an object based graphics package to produce and explore a graphical model. These together would extend the children's creative skills as they had a purpose to both of their subjects.

Stages of the Units of Work

Chichen Itza in Mexico dates back to the times of the Aztecs and the Mayas so the starting point for this topic would be to show the children this fabulous wonder.

In the first D & T session the children looked in detail at a range of temples from around the world not just at the temple from Mexico, They used their research skills on the Internet, using information books and any other secondary sources like CD- ROMs.

In the first ICT session the children identified reasons why Primary Paint would not be an ideal package to use. They learnt that a more suitable program was available- one where you could manipulate and move separate objects around the screen. Several skill based lessons using this package preceded the focused task.

Their first task was to move, rotate and resize graphic elements, This had been done in previous years with a paint package. The children learnt that, in this respect, the object based graphics package was not dissimilar to the paint program they were confident with. The children were shown how to change colours, resize and copy.

The next two sessions concentrated upon more challenging techniques. The children were shown how to use geometric tools to create objects that could be manipulated using the package. Their task was then to decide which tools would be best to draw their temple site.



The last two sessions focused on the children understanding how their temple and surroundings would look. After all, this would be their basis for their designs.

Some children found it hard to use the Computer Aided Design Program to produce their plan of the temple site, so existing Aztec maps of the site were provided as a guide for those who needed them.

More able children were asked to add other temples to their design so that they created a small world of temples, ritual places and sacrificial sites. This would extend their skills further as they had to fit on more elements to their plan. I did not think it appropriate to ask the children to work to scale as the actual grandness of the real Chichen Itza covers ten square miles.

Once the children had got to this stage I needed to bring in the Design and Technology elements. The children had theoretically a rough idea of what they wanted their temple sites to look like from their graphical models. They just needed to adapt these and show the resources and the quantities required.

After they had been reminded about the earlier work the children completed focussed practical tasks to enable them to make their models; for example, the children were shown how to combine and mix materials in order to create more useful properties, and they were shown how to use modrock with heavy duty card, monitoring how long the modrock was malleable.

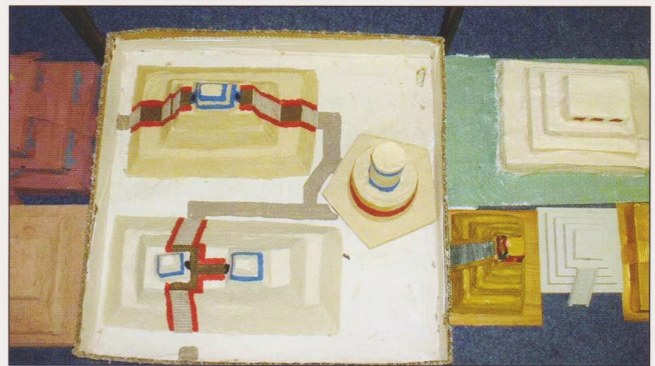


The children also investigated a range of materials which would then give them lots of ideas about fitness of purpose. There were also sessions to develop the children's cutting and manipulating skills. As the card was heavy duty card the

children had to be shown how to use craft knives safely.

They were then given their completed computer generated temple sites back to complete their design, modifying it and annotating it with resources that they were going to use. This would then be the basis for their Design and Make Assignment. It was important for the children to be made aware that they would be able to modify their original design once they started making their models.

Once their designs were finished, the children started making their temples. They began by cutting their desired shapes, joining materials as they went so that they could then modrock their base design. The children decided to use masking tape to join their materials together because they had discovered that masking tape would still adhere with the modrock when wet. The making stage took two sessions to complete with many of the children changing their designs because of problems that they had encountered in the process.



The final stage was for the children to evaluate their work; some children gave written evaluations others were tape recorded.

Conclusion

Children of all ages are now much more experienced with the use of ICT. It is important that all children are given time to develop their skills in this subject and an easy way of doing this is certainly to incorporate ICT into other subjects. Not only does this "kill two birds with one stone" but it also can if done correctly lighten the workload for teachers. It obviously also gives the children a greater understanding of both subjects.

Tips

- Get to know the CAD Program back to front - there is always one child that will find a new tool to use!
- Try not to underestimate the ability of even the weakest children when using new programs.
- Get the children involved in taking pictures of others completing Focused Practical tasks - this heightens their awareness of ICT.
- Always try to make the design brief relevant to the children- adapt QCA schemes of work.

Caroline Atherton is ICT & D&T Coordinator at Elworth Hall Primary School, Sandbach, Cheshire.

Stimulation through Simulation

Chris Hackett

“Earth is dying! . . . Help save our planet by building a rocket to explore the galaxy for new planets to colonise!”

This was the introduction to a Space Simulation Day designed to stimulate children’s creativity and imagination whilst developing problem solving and design technology skills. Northbrook Primary School in Leyland, Lancashire were considering how to raise the profile of ICT in the school through creative and innovative methods. They decided to call upon our team of consultants to design a day of exciting cross-curricular activities. Taking into account the themes identified in ‘Excellence and Enjoyment’ a day was planned to excite the children’s imagination and deliver the curriculum using the available resources in a flexible and inventive way. Pupils were to imagine that they were to be Space Cadets and their classroom had become Mission Control. Their task was to complete a series of simulated missions - design a rocket, launch it, explore new planets and record new life forms.

Organisation of Activities

The day began with an introduction to the task in hand through a multimedia presentation – images of the earth dying, rockets blasting off in the hope of finding new worlds and provocative images of new planets in deep space. One of the main aims was to develop children’s communication skills so children were grouped to enable collaboration on tasks.



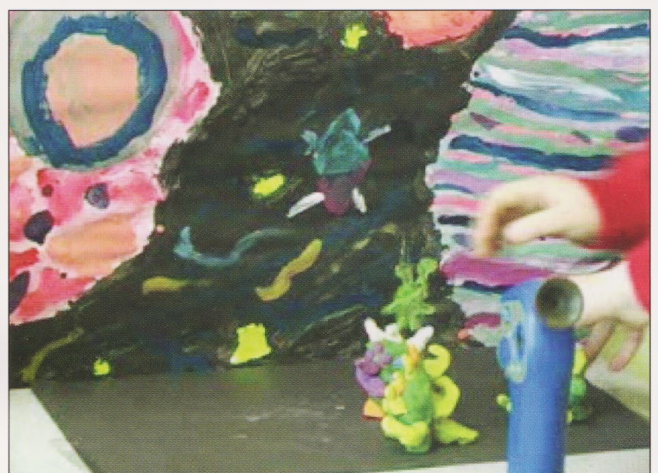
The first task for the Space Cadets was to design and make a working rocket. Children needed to consider issues such as aerodynamics, weight and stability. The rocket’s main body was a plastic bottle. Children had access to glue and card to add to the structure. Very quickly children were discussing shapes of nose cones, fins and of course a name and logo for their creation. Children were to test their rockets later in the day through pressurising the bottle with air and measuring the distance of the flight.

The next activity for pupils was, in the main, ICT-based using the school’s ‘Roamers’ as a Lunar Rover to explore an

imaginary planet surface set up in the school hall. Children used mathematical skills of estimation and measurement to programme this lunar robot to investigate various geographical features, take pictures and collect soil samples using the various commands on the Roamer.



The premise for the next activity was that the Lunar Rover had detected new life forms. The children were to use the onboard camera to record the aliens’ behaviour. For this activity the children used the ‘Digital Blue Digital Movie Creator’ and software to produce an animated sequence. Children had to first of all design a backdrop to their work - using bright paints on a black background various new imaginative worlds were created. Pupils then used plasticine to create their aliens producing various monsters with tentacles, antennae, enlarged limbs and bulging eyes! We were amazed at the variety of ideas the children generated.



Once designed the sets and models were brought to life through the use of the digital cameras using Stop Frame animation techniques. The software was so simple to use that it wasn’t long before the life forms were swaying, waving, talking and jibber-jabbering around their newly created world.

The day ended with children presenting their animations to other groups and evaluating each other’s work. The highlight and climax to the day was launching the rockets into space. The whole school were present to witness the

event and at the end of the essential '3... 2... 1... Blast Off' the rockets were launched skywards from a specially designed launch pad.

This was the ideal test of the children's design and an opportunity for the children to evaluate the effectiveness of their rocket. Some children concluded 'It was too heavy', or 'ours worked the best because I had the most pointed nose cone'. Whether it went 3 metres high or reached the edge of the stratosphere the children were left contented by the first successful foray into space!



Benefits to the School and Pupils.

Whilst not directly linking to the school's scheme of work at that moment in time the value of the activities was clear. The cross-curricular themed approach to the day meant that children were immersed in science, numeracy, ICT and language based activities as well as art and design. The stimulus for the day meant that children became absorbed in the tasks – design of their rocket being of the utmost importance, challenging them to ensure the best possible solution to the task. It also stimulated their creativity with a range of well-decorated rockets, paintings of planets and weird and wonderful aliens left behind in the school for display.

In order to complete the activities children worked collaboratively in groups. A great deal of teamwork was observed during the task with opinions put forward about the best rocket design and discussion on what an alien would look like! This team aspect of the activities meant that children could work to their strength: the more artistic children enjoying designing the sets and aliens, whilst technical minded children enjoyed designing rockets and using animation software; children with mathematical ability guided their group when programming the Roamer. The range and scope of activities meant that all children with different abilities and learning styles were included in the tasks.

The themed approach provided plenty of scope for follow-up work to develop children's knowledge and understanding in the area of Earth and Space. The Internet provides a wealth of simulation activities such as piloting a landing on Mars, space walks and virtual tours of the Solar System. There are opportunities, too, for creative art and design activities. For example, the children wanted to 'dress' the Roamer to look more like a Lunar Rover, they were also keen to develop a logo for their rocket. So from the initial stimulus of a Rocket

Simulation Day pupils were enthused and excited about the topic and teachers were left with endless ideas to develop the topic further.

Simulation Takes Off!

Following the success of the Rocket Simulation Day in Northbrook Primary school the day has been repeated in various schools and City Learning Centres across the Northwest. The activities have proved suitable for all ages with children from both Key Stage 1 and 2 taking part. Each time the creativity and inventiveness of children to produce an array of rocket designs and diversity of alien life forms never ceases to amaze.

The idea of developing a host of ICT based activities around a central simulated idea or theme to motivate and encourage creativity in art and design has proved a winning formula. In Merseyside the same concept has been successfully reproduced in a variety of Simulation Days in many primary schools. Each activity begins with a stimulating multimedia presentation followed by a series of cross-curricular activities incorporating art and design.

Earthquake Simulation Day

"An Earthquake has hit Liverpool ... Can you rescue the people of the city?"

The children were informed that an earthquake had damaged the Mersey Tunnel and that they needed to design and build a bridge over the River Mersey. Bridge building was simulated by giving children sheets of newspaper to investigate the strongest structures they could make. The challenge was to design a bridge that was 50 cm long and could support a weight of at least 1kg. Children worked in teams to solve the problem, which required careful planning and lots of discussion about which structures were the strongest. All the bridges were tested at the end of the day and the children had opportunities to evaluate their design in the areas of strength, use of materials and appearance. Roamers were used to be robots programmed to search for and repair the city's gas mains!

The artistic element to this day was that children had to imagine they were part of a television news crew and they were to record the earthquake through the development of an animated sequence using the Digital Video Cameras. Children began by drawing sets (including a very accurate skyline of Liverpool) and making various models such as trees and houses to be destroyed by the Earthquake.



Coastguard Simulation Day

“The Mersey Ferry is sinking . . . You are a member of the Junior Coastguard for the day how will you rescue the passengers?”

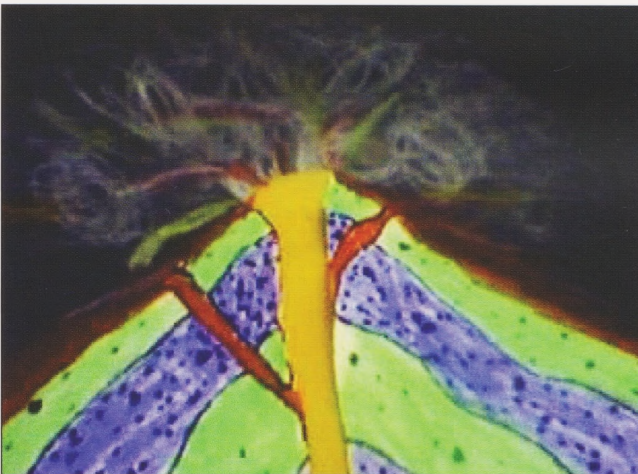
Children were given the task of designing a life raft from empty camera film cases, lollipop sticks and elastic bands. The raft needed to carry a minimum of 500g and float for as long as possible. The most exciting part of the day was testing their designs seeing whether their passengers would be rescued or thrown out of their raft into the murky waters of the Mersey. Roamers were used to plot a route to the stranded passengers and drop them off at various emergency locations along the river bank!

Volcano Simulation Day

“You are part of an international emergency team charged with studying and rescuing people from the volcanoes of the world!”

This Simulation Day began with children learning about volcanoes and making a model volcano from newspaper, foil and paints. An eruption was simulated using vinegar and bicarbonate of soda; then the emergency team swung into action using the Roamers to simulate the rescue of people from the fiery mountain.

A different approach was taken to the ICT based animation activity with a method known as ‘smudge and click’ to create the animated sequence. Groups had to draw a volcano and using chalks and crayons show how an eruption develops by adding marks to represent ash, lava and rock. The sequence was built up by smudging the chalk and extending lava flows using the crayons.



Incorporating into the Curriculum

The many different simulation days that have been completed in schools have proved to be an exciting and motivational stimulus for the development of creativity in art and innovation in design. The introduction of a problem or task in the context of a fun and enjoyable day of themed activities has enabled pupils to express their ideas more readily and stimulate their imaginations. The outcome of the day has been a design or model that has been planned, designed and evaluated for a specific purpose. Children

have been given the opportunity to express their creativity through the medium of paint, crayons, chalks and clay through the production of animated sequences. Although many of the activities may be considered by some to be ‘one offs’ and may not have a place in the QCA schemes of work, I believe that this type of project-based learning has massive potential in the primary school.

If ‘Excellence and Enjoyment’ tells us that we should take more ownership of the curriculum, to shape it, to make it our own, then could we not incorporate this type of simulation activity into our curriculum? There are many opportunities to take aspects of these days and embed them into current schemes of work, for example pupils could build ‘Shelters’ instead of a bridges in the Earthquake simulation to link closely with the Y6 QCA scheme of work. The ability to shape this type of activity to fit the curriculum was proved more recently when we were approached to develop a Healthy Eating Day. This was to fit in with the Y6 curriculum and was also a current topical issue in the Merseyside area. The activities developed included: design a healthy snack, develop and design a character model and set to be used in a healthy eating advertisement and various other ICT activities such as an interactive healthy eating quiz.

Even if these activities do not ‘fit’ into the current curriculum the value of stimulating a creative and enquiring mind through simulation of a real life problem cannot be underestimated. This activity provides a real context for children’s designs and a means to excite their imagination for artistic activities.

Stimulation through Simulation

National Curriculum	Scottish 5-14 Guidelines	Strand	Scottish Level
Key Stage 1 (5-7)	Expressive Arts	Creating and Designing	Level A-B
	Technology	Needs and how they are met; Resources and how they are managed; Processes and how they are applied.	
	ICT	Controlling and Modelling	Level A-B
Key Stage 2 (7-11)	Expressive Arts	Creating and Designing	Level C-D
	Technology	Needs and how they are met; Resources and how they are managed; Processes and how they are applied.	Level C-D
	ICT	Controlling and Modelling	Level C-D

Chris Hackett, MGL

Direct2U Activities – Becta

Becta produces ideas activities using ICT across the curriculum. These can be found at <http://forum.ngfl.gov.uk/direct2u> They can be downloaded directly from the site or teachers can register and receive activities and ideas for their chosen subjects and year groups.

You can register at : www/ictadvice.org.uk/subscribe

How do I download the documents?

If you are using Internet Explorer, right-click on the document link and choose Save Target As...

If you are using Netscape Navigator or Mozilla Firefox, right click on the document link and choose Save Link As...

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The following Art and Design and Design Technology activities have been reproduced from the Becta site -

Design and Technology Year 1: Playgrounds

Introduction

Here children are introduced to looking at the way things work. Digital photographs taken on a visit to a playground are used as a stimulus for discussion.

What will the children learn?

The children will learn to consider the effectiveness of a range of playground equipment.

What prior experience do the children need?

Children would benefit from having used construction kits to construct models and assembled and joined framework structures such as straws

Equipment

- Digital camera
- Projector, large screen or interactive whiteboard to enable all to see your presentation.

The Lesson

This lesson would ideally be carried out in two parts.

The first part would be a trip to see a range of playground equipment together with a discussion about the equipment and perhaps drawing it. Whilst at the playground, take a series of digital photographs of the equipment. Download these onto your computer and copy and paste these into a presentation programme.

The second part will be back at school, using the photographs, to discuss the equipment and to relate the way it works to its intended use. The discussions can include:

Why do we have playgrounds?

Why is it fun to visit playgrounds?

Do we need special equipment to play with?

Was the play equipment good and if so why?

Name the different parts of the equipment.

What materials have been used and why have these been chosen?

How do you think the parts have been joined together?

Why are we using ICT?

The use of presentation equipment to provide large photos of the play equipment allows the teacher to demonstrate a full consideration of the issues, to use relevant vocabulary and to give good answers to the questions. It also allows for calm reflection after an exciting trip outdoors!

References

QCA Schemes of Work ICT Unit 1E Representing Information Graphically: Pictograms: Unit 1B Using A Word Bank

<http://www.standards.dfes.gov.uk/schemes2/it/?view=get>

QCA Schemes of Work Design and Technology KS1 Unit 1B Playgrounds Structures

<http://www.standards.dfes.gov.uk/schemes2/designtech/?view=get>

5-14 National Guidelines for the Curriculum in Scotland: Environmental Studies - Technology, Processes and how they are applied, Level A

<http://www.ltscotland.org.uk/5to14/guidelines/index.asp>

Where do we go next?

The children could carry out a survey of their favourite items of playground equipment.

The children could add notes about the equipment onto a word processor page that has a photo of one of the pieces of equipment already on it or write about the equipment alongside their own drawings.

Differentiating the activity

Differentiation will largely be by outcome: through the quality of answers to the questions asked. Some children will benefit from more support during the discussions.

Reflecting on their work

Ask the children how good they think the different pieces of equipment are and why they think that. What materials are well suited to a particular type of equipment?

Art and design Year 1: Feel this!

Introduction

In this lesson, which is best undertaken in groups, children will use ICT to explore the visual elements of different textures, looking at similarities and differences.

This activity also provides teachers with the opportunity to develop children's vocabulary. Children could be challenged to make the longest list of words and phrases that describe their fabric.

Ask the children to bring in a piece of fabric that has an interesting "feel".

What will the children learn?

The children will learn that the tactile elements of textured fabrics and that these may be constructed differently.

What prior experience do the children need?

Children should be familiar with using everyday language to describe things. They should be able to make comparisons.

Equipment

A selection of textiles with interesting textures

A means of enlarging and capturing images electronically. You could use a computer microscope or a scanner that allows enlargement.

An Interactive Whiteboard or projector would be useful.

The Lesson

Working in groups, ask the children to describe the piece of fabric they have brought in, or one they have chosen from the class collection, in particular focusing on the texture and feel. Make lists of the words children use to describe their fabric, encourage them to be inventive! If possible pass the fabric round so that all the children in the group can share the experience, and contribute words. List the words used.

If you are using the computer microscope put each piece of fabric under the microscope; it may be best to hold it in place with the slide clip. Choose between top-lit and bottom-lit depending upon the translucency of the fabric and help the children to adjust the magnification until a clear image is obtained. Capture a picture of this and save it under a name that will not divulge what it is.

As you capture each image talk with the children about the way the fabric is displayed under the microscope – does it look different? In what ways? Is the fabric thick or thin? Focus on the weave, is it loose/open or tight? Is the fabric smooth or rough? Are there any other words the children want to use to describe it?

If you are using a scanner make sure you only select a very small section of the fabric; scanning is very memory-hungry

especially if you enlarge by 1000%.

When each group has had the opportunity to look at and capture an image of their fabric use your whiteboard to create some lists of children's words and phrases that describe the fabrics.

Either in a plenary session or in another lesson display two or three of the pictures and ask children if they can select and drag the sets of words to the appropriate fabrics. Repeat with different pictures and sets of words.

Print out the lists of words and pictures of the enlarged images and ask children to match them to the original fabrics.

Create a class display.

Why are we using ICT?

A microscope linked to a computer and used in association with a whiteboard enables every child to see an enlargement of the textural surface of the fabrics. These can be saved electronically and used in subsequent lessons.

Pictures can be manipulated, for example by displaying/printing them in black and white so that children can focus on the texture rather than the colours.

References

QCA Schemes of Work ICT: Unit 1C - The information around us and Unit 1D Labelling and classifying

<http://www.standards.dfes.gov.uk/schemes2/it/?view=get>

QCA Schemes of Work Art and design: Unit 1B - Investigating materials

<http://www.standards.dfes.gov.uk/schemes2/art/?view=get>

National Curriculum Programme of study: art and design Key stage 1: Exploring and developing ideas 1a; Knowledge and understanding 4a

<http://www.nc.uk.net/index.html>

5-14 National Guidelines for the Curriculum in Scotland: Expressive Arts: Using Materials, Techniques, Skills and Media - Using visual elements; Expressing Feelings, ideas, thoughts and Solutions - Creating and designing Level A

ICT, Using the technology; Searching and researching Level A/B

<http://www.ltscotland.org.uk/5to14/guidelines/index.asp>

Where do we go next?

Print out selections of the textures and ask children to cut or tear out shapes that can be combined to make a collage.

Children could be asked to combine their textures:

Sequentially, for example, smooth to rough,

To create a picture of an animal or another natural feature and discuss with the children why texture is particularly

appropriate for natural features

To create a visual pattern similar to *The Snail* by Matisse.

Explore the texture of natural objects using a microscope.

Differentiating the activity

Target children with specific fabrics and sets of words to suit their abilities.

Reflecting on their work

Children should be encouraged to understand that technology enables them to see the structure and investigate the texture of the fabric more clearly. Any picture they make using printed images will have no texture at all, only a 2D representation of it, but they will not have to cut into perhaps, precious fabrics to make their pictures. Encourage the children to discuss these advantages and disadvantages.

Art and design Year 2: “A special existence in time” Andy Goldsworthy

Introduction

Andy Goldsworthy “builds elaborate installation pieces out of Mother Nature’s flotsam and jetsam in its own natural habitat (open fields, seashores, riverbanks). A finished work can last for as long as a few days or as short as a minute before a light breeze or an eddying tide picks it apart like carrion” David Fear in the San Francisco Bay Guardian.

In this activity children will look at the work of Andy Goldsworthy and use it as a model for their own artwork using natural features that they then photograph. It will take more than one session to complete.

What will the children learn?

They will learn to explore ideas for designs and to record from first hand experience.

They will learn to review and comment on their work and the work of others.

The children will learn that art can be transient.

What prior experience do the children need?

Children should have looked at the work of different artists who have portrayed nature in different ways and have expressed their opinions about the work.

They should have collected and used different materials in an art context.

They should have used a digital camera with help if necessary.

They should have used a simple paint package.

Equipment

• An Interactive Whiteboard or projector would be useful for

whole class teaching

• Digital camera

• Word processors.

The lesson

Show the children some examples of the work of Andy Goldsworthy. You can find some at:

<http://www.roland-collection.com/rolandcollection/section/36/605.htm>

Talk to the children about the materials he has used and how the work has been created.

Ask the children to give their opinions of the pictures. Which do they like best? Why do they like them? Is there anything that they don’t like? Why?

Ask the children if they think the sculptures will last forever. Can they explain? Do they think that matters? Why/why not? Encourage the children to make a link between the transience of the original work and the photograph the artist has taken. Encourage the children to realise that most of the sculptures have been created outside and that the artist has not removed the natural material from its original location. This is an important conservation point, and fundamental to the artist’s philosophy.

Explain to the children that they are going to make some sculptures like Andy Goldsworthy. Where do they think would be a good place to collect materials?

Ensure that the children realise that they can only collect dead, dying or inorganic materials, and that they should be careful not to damage anything in the environment or any of the found materials.

Encourage them to examine the materials carefully from several angles first and consider how they might be incorporated into a piece of work, rather than just collecting everything.

Take the digital camera with you when you go out, as there may be features or materials that cannot be collected but that could provide a stimulus in this or later work.

When you return to the classroom sort and display the materials.

Ensure that the children understand that their sculpture will be temporary and that other groups will subsequently be able to use the same materials. Explain that you will take digital photographs to provide a permanent record.

Children should work in pairs or small groups to create their artwork. Encourage the children to look at the piece from several viewpoints.

When the children are satisfied with their finished work take several digital photos from different angles. Ask the children to think of a title for their sculpture. They should use a word processor to create a label for the photographs. Ask them to include some more information about the sculpture. Print this and the photographs and create a gallery of

photographs of the sculptures.

Leave the sculptures on display for at least half a day before allowing other groups to use the materials.

Finally tell the children that you are going to return the materials to the location where they were found.

Why are we using ICT?

Taking digital photographs means that children have a permanent record of their work even though the original does not last. Word processing labels and other information replicates displays you might find in museums and art galleries.

References

QCA Schemes of Work ICT 1C - The information around us: 2A Writing stories: communicating information using text

<http://www.standards.dfes.gov.uk/schemes2/it/?view=get>

QCA Schemes of Work Art and design 2B - Mother Nature, designer

<http://www.standards.dfes.gov.uk/schemes2/art/?view=get>

National Curriculum Programme of study: art and design Key stage 1: Exploring and developing ideas 1a, 1b: Investigating and making art, craft and design 2a, 2c; Evaluating and developing work 3a: Knowledge and understanding 4a, 4c 4a <http://www.nc.uk.net/index.html>

5-14 National Guidelines for the Curriculum in Scotland: Expressive Arts

5-14, Using Materials, Techniques, Skills and Media – Using visual elements; Expressing Feelings, ideas, thoughts and Solutions – Creating and designing Level B

ICT, Creating and presenting; Using the technology, Level B

<http://www.itscotland.org.uk/5to14/guidelines/index.asp>

Where do we go next?

Look at the pictures Black Rock and Red Pool. In both cases one feature has been enhanced before the picture was taken, here using natural materials. Let the children choose one part of their photograph to enhance using a paint package. Encourage them to choose a colour that would occur naturally in the landscape, and just one small part of the picture to enhance.

Differentiating the activity

Some children will need help to evaluate and improve their work.

Reflecting on their work

Help the children to understand that their artwork, like that of Goldsworthy is not permanent, and that the materials should be returned to their original location. Encourage the children to understand the differences between their original 3D piece of artwork and photographs and the advantages and disadvantages of each.

National Grid for Learning - Resources for Art and Design

Glenys Hart

One of the key features of the Internet is the opportunity it provides to see what like-minded people are doing. Around the country art teachers, advisers, consultants and art experts have been producing ideas, activities and resources and placing them in the National Grid for Learning. Each Regional Broadband Consortium (RBC) has developed its own grid, where the work is more locally focussed. This article examines a sample of the resources available, selected to demonstrate as varied a range as possible. Most importantly, teachers do not need a technological background to use the multi-media features like Flash and video streaming. They only need to know how to search the web and click. To aid your exploration the grids are arranged in alphabetical order.

1. Birmingham

<http://www.bgfl.org/bgfl/index.cfm?s=1&m=231&p=165,index>

Firstly, an example of local resources is the electronic collection of Pre-Raphaelite paintings on display at Birmingham Museum and Art Gallery. The images have been provided by kind permission of BM&AG who also holds the copyright. Clicking on a thumbnail opens the selected image. Clicking on the painting opens a much larger, detailed version for closer examination.

The paintings can be used for a number of curricular activities such as Art & Design (studying the work of artists), History (the Victorians), Citizenship (analysing morals), Literacy (as a stimulus for extended writing).

Another resource is **Exploring Perspective** using Flash in a set of interactive scenes where pupils can play with differing perspectives and see the effects of size and scale and print the pictures. They can also explore how some famous artists have used perspective to give their paintings more realism.

2. CLEO (Cumbria and Lancashire RBC)

CLEO <http://www.artisancamnorth.org.uk>.

Artisancam is an example of creativity online and is a wonderful resource on ceramics and other crafts provided by CLEO. As well as videos of the artist in the workshop explaining and demonstrating techniques, it includes an online demonstration of making coil pots and a Flash activity to simulate the painting of ceramics. Excellent for use in the classroom with a multimedia projector.

3. East Midlands Broadband Consortium offer the following ideas

East Midlands Grid for Learning

http://web.e2bn.net/curriculum/art_design.htm

Illustrating Art Skills' is a series of 12 Quicktime movies illustrating a variety of drawing and painting techniques, from basic principles of perspective, through brush and paint effects, to experimenting with abstract art. **Kurt Schwitters: 'Flight'** enables pupils to reassemble a collage by an influential 20th Century artist and **Cut n' Stick** is a collage making tool, suitable for KS1 and KS2.

4. Essex Grid for Learning

<http://www.e-gfl.org/e-gfl/primary/ks2/frameset.htm>

This grid provides information about art and design activities and learning activities as shown on the web page. Essex Life is an example of the use video streaming drawing on archive film from the East Anglian Film Archive and new video material produced by Essex schools.

5. Kent Grid for Learning

<http://www.kented.org.uk/ngfl/subjects/art/index.htm>

This is an excellent site, particularly the first link, which identifies resources that relate directly to QCA scheme of work and ICT provision in programmes of study for art. **If you only visit one site this should be the one.**

Don't miss the sections about finger painting on the interactive white boards and altering digital photographs of children.

Links include:

Arts Alive

This site from QCA has been developed as part of the promotion of creativity in the curriculum, giving background information to the website. There are case studies and guidance for arts teachers and subject leaders. It gives contextual background information to the website, findings from research into the arts.

Scheme of work for art and design key stages 1-2

This scheme shows how the art and design programme of study for key stages 1 and 2 can be translated into manageable units of work.

Scheme of work for art and design key stage 3

This scheme shows how the art and design programme of study for key stage 3 can be translated into manageable units of work.

National Curriculum in Action

This website uses pupils' work to show what the national curriculum in art and design looks like in practice.

Thoughts on Art and ICT. A thought provoking page arguing that when 'working in the style of' children should be taught to think like the artists they are emulating rather than simply copying their techniques and styles. A set of guidelines for teachers is provided to help.

Art and ICT. A brilliant site featuring inspirational ideas for using ICT to create artwork.

6. Powys

Provides an extremely useful list of Welsh resources (also available in English)

<http://itteam.powys.gov.uk/linkster/linkster.php?CID=13&>

Link/Description
Art Gallery of the NMGW - Welcome to The National Gallery, part of the National Museums & Galleries of Wales. We are home to the Welsh national collection of fine and applied art.
Art Web Museum - You may want to start exploring a tiny subset of the collections first: try out the medieval art exhibit. However, most artworks are exhibited in the Famous Paintings section.
Artcyclopedia - The Artcyclopedia is primarily an index to where paintings, sculptures and other great works of fine art can be viewed online, at hundreds of art museum sites and image archives worldwide.
Artists Living and Working in Wales - This is a pilot project to make available a selection of contemporary artists, craft persons and designers living/working in Wales.
Junior Art Detective - A selection of modern art with questions that will encourage pupils to compare ideas, methods and approaches.
National Library of Wales Art Database - The database covers the Library's holdings of art works, mainly of Welsh interest, with fine examples of landscape, portraiture and genre pictures. Digitised examples of over 4000 works are provided.
Religious Renaissance Paintings
The Art Print Collection - A interesting collection of art works - they look good on the interactive whiteboard!
The artists Primary Project - Ideas and Resources to support a Primary Project about artists using the Internet.
Turner Online - Turner Online is an introduction to the art of one of the most celebrated British artists: Joseph Mallord William Turner (1775-1851).
Welsh paintings - The site is filled with interesting and rich paintings reflecting the character of the land and the people who work and live on it.

7. Learning and Teaching Scotland

<http://www.ltscotland.org.uk/5to14/illustrations/>.

The site provides a range of royalty-free clipart for use in schools. These include Kelts, Picts, Vikings, Egyptians and dinosaurs. Teachers can print off colour or black and white images to incorporate into various classroom projects.

8. Northern Grid for learning

<http://www.northerngrid.org/ngflwebsite/sculpture/Index.htm>

These web pages offer the experience of 'Exploring Public Art Through ICT' which is an interactive map of public sculptures in the North East of England, giving walk-rounds of sculptures and including details of their size, construction and date of installation.

9. South West Grid for Learning features

<http://www.virtualartroom.com/>

The Virtual Art Room "These resources have been developed for art and design teachers to help embed ICT and new digital media into teaching and learning at key stages 3 and 4". The website covers image manipulation, animations, interactive exercises, art presentations, whiteboard activities, digital video, project ideas and lots more.

10. Worcester Digital Palette Art for Art teachers

http://www.digitalpalette.org.uk/flash/digipal_intro.swf

This is a particularly visually attractive site aiming to inspire, encourage and support teachers who are experimenting

with the use of computers in Art and Design. The examples demonstrate ways in which other teachers have used information and communication technology and provide a platform from which to promote discussion and the further exchange of ideas.

It is suggested that 'Art and ICT should be used in a complementary way - with traditional techniques going hand in hand with the use of 'new' technology. The computer is no more than another creative tool and should not dictate nor constrain what can be achieved.'



Lesley Blount of Holy Family, Slough using Digital Palette

11. Yorkshire and Humberside Grid for Learning features

<http://tife.org.uk/yhgfl/bestwebsites.htm#art>

The Roland Collection KS3 The Roland Collection is the work of 230 film makers from 25 different countries and consists of more than 640 films and videos on art available for institutional and individual use. The site provides free viewing of 450 complete films on-line.

San Francisco Museum of Modern Art offers its first broadband online feature. **Art as Experiment**, which is an in-depth exploration of fifteen works from the Anderson Collection which features streaming audio and video clips, a zoom function that allows users to inspect artworks in detail, and animated navigation tools. The features work best with fast access connections and powerful computers.

3D Music and Art KS3 an innovative interactive performance environment in which pupils can explore music in a unique virtual space. 3D music and 3D art work are uniquely linked together. A must for motivating some learners.

Tip of the Iceberg

Every week the **grids for learning** develop and improve. Once you have used the impressive range of resources discussed above, explore the many other inspirational resources that are available through the **National Grid for Learning**.

Other inspirational ideas -

The following work can be found on the website created by Sir Robert Hitcham's Primary School, College Road, Framlingham, Suffolk.

http://www.hitchams.suffolk.sch.uk/ict_art/index.htm

Some of the lovely ideas include:

Black and White Portraits

Pupils produced some black and white portraits from coloured digital photos. Photographs were taken, split into RGB channels (Red, Green & Blue) to produce three different black and white photographs and then softened using noise and blurring.

Fractals

My favourite is an activity carried out with year 5 pupils was based on the silver fractals (particularly Silver Blast found at:

www.fractaldomains.com/ronda/ethel/ronda.shtml

The children copied the 'fractal style' using a structured drawing program called Serif Draw Plus with a number of preset spiral shapes and the freehand pencil tool. Some of the shapes had transparency effects added, so that the shape underneath could be seen. If images were overlapping, attention was made to layering, making sure the objects were positioned in the correct order on the page.

Dali Landscapes

Another amazing activity using Serif ImpactPlus 3D software and a Surrealist theme was designing Dali type landscapes. Starting with a background image, children generated rocks using the deform tool, create a sense of perspective using the distance tool, and play with distorting real objects, in imitation of the 'Dali clocks'. The results were spectacular.

Gaudi Imitations

Children look at Gaudi, and explore the forms of his buildings. Then Paint Shop Pro 8's new feature Mesh Warp gives the desired effect. By copying and pasting pictures of diverse houses they build a city. Children start at the top with smaller houses, and work their way down the screen with bigger houses to give a further sense of perspective.

Glenys Hart
School Improvement Adviser with responsibility for ICT
Slough LEA

Art without Mess - Is it of value ?

Kathryn Broadhurst

Can ICT be used with children in the Early Years for Art and design activities? My initial reaction was "Of course not"!

As a teacher of Infant children, Art always involved cutting and sticking, paint, glue, water...Mess!

As a Headteacher, I had little time for the brave ICT coordinator who first introduced the idea of ICT for Art activities. Surely children learn more effectively by "doing". Art by computer? Never!

Then it was that I first used "Revelation Art", a challenging Art package from Logotron. Having always been the weakest student in the Art class during my schooldays, I was surprised that I could now succeed in Art with this program. I could create a masterpiece, use different media, correct my work, and all with the aid of my PC. I remained unconvinced that children would benefit from the use of ICT for Art activities until I taught a "Revelation Art" lesson with a class of Year 1 children. That was indeed a revelation to me. I gradually realised the potential of the computer to encourage children to experiment and to express themselves through their art. They were captivated by the emergence of their picture on the screen. It was easy to refine and improve work, so children were able to achieve their best.



Kudlip's train

As Tablet PCs were introduced into school, using the power of this technology to enhance learning opportunities in Art and Design was part of our development work with "Gifted and Talented" pupils. It didn't stop there. Once one child had mastered the art of drawing a picture onto the Tablet PC screen using a digitiser pen, everyone wanted a go! The experience was similar to writing on an old-fashioned slate, but much more visual.



Children mixed colours, selected different artistic effects and explored a variety of textures and lines, all with the stroke of an electronic pen. ICT skills developed quickly, preparing children for the onset of interactive whiteboards. But was there any quality learning in Art? Maybe not as much as in conventional art lessons but in the hands of an enthusiastic teacher the foundations can be laid for future excitement and experimentation.

Out came the Tablet PC again, but this time for the design of an ARTs Studio. The digitiser pen was used to create space for model making, sculpture, pictures and collage. The Studio was built and is now in constant use. This can be seen on the school website (see further details below).



Children are learning, perhaps for the first time, how to express their feelings through Art. They are experiencing the joy of practising those techniques they first discovered through ICT and "Revelation Art". Children have the use of an interactive whiteboard, viewed by one six year old as "the biggest Tablet PC" he had ever seen. They create, using concrete materials, the works of art that first appeared on the screen of a computer. They make a wonderful mess...



Sabaa

I think I've changed my mind about using ICT in the Early Years for Art and Design. It is of value. For me, it has put Art back into the overcrowded curriculum and has ensured that it will never be elbowed out again. Now we can teach Literacy and Numeracy through Art and Design, we can develop Art through ICT. We seem to be able to achieve some of our dreams...and we can make a mess!

Kathryn Broadhurst
Headteacher - Green Lane Infant School in Leicester

If you would like to look at the completed ARTs Studio, see www.greenlane.leicester.sch.uk, burst the pink balloon and look in my Diary in the Briefcase.

Children's work about "A Trip to Leicester City Football Club" shows them working on the Tablet PC.

The Uniqueness of Me

Lynne Watson

In the Worthing area schools are organised into First Schools - ages four to eight, Middle Schools - ages eight to thirteen, and High Schools - ages thirteen to sixteen. At our small First School, the Year Three children are, then, in their last year before they move on to one of two much larger Middle Schools which are fed into by several other First Schools in the area.

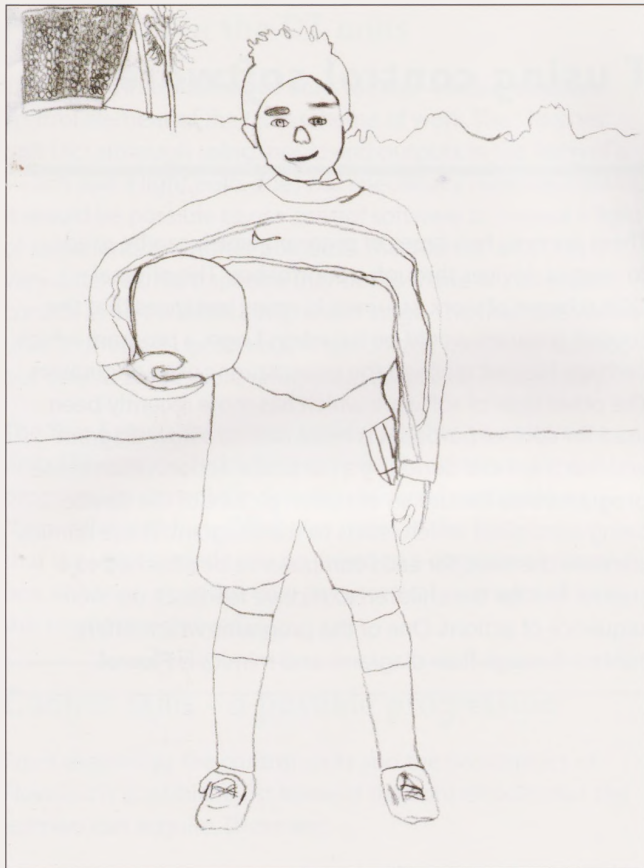
In preparation for the transition we spend some time working on the PHSE theme of "The Uniqueness of Me". We show the children portraits where the subject of the painting has chosen how to be perceived by the clothes that they wear and the artefacts that they choose to have in the painting with them. Examples of portraits we have used include George and Francis Villiers by Anthony van Dyke, Edward VI as a child by Hans Holbein and Elizabeth I by Marcus Gheeraets the Younger. This year we also looked at the 'Marquis de Seignelay and Two of Her Sons' as part of the National Gallery's "Take One Picture" project.

The children examine the portraits in small groups and describe the person in the picture, say what they think the person's job or role is, and say why they think that from the clues in the picture. After looking at portraits, we invite the children to bring clothes and artefacts to school and to choose how they would like to pose for a portrait.

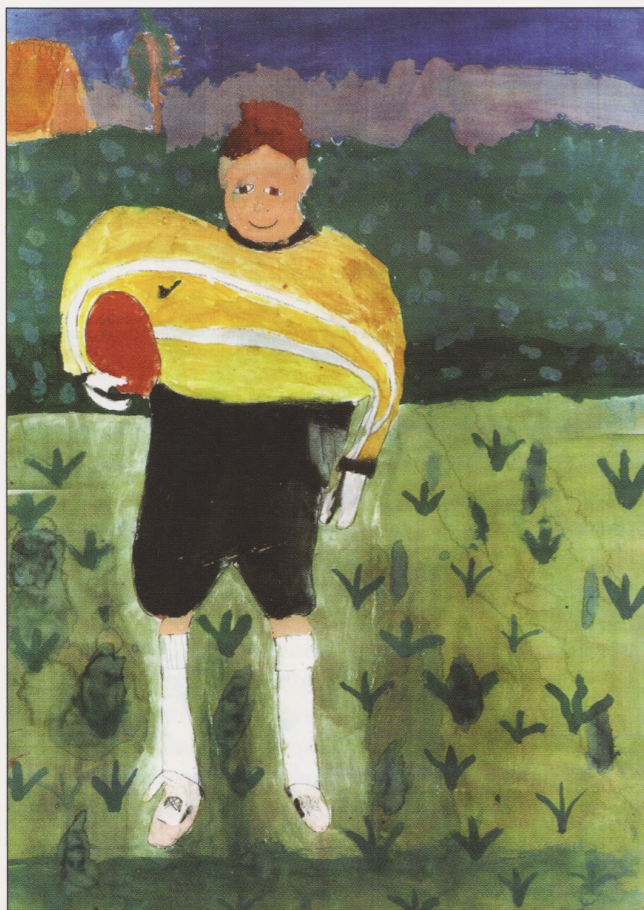
We use a digital camera to initially capture the pose and to give the children instant feedback about how their portrait is going to look. The photograph is then cropped and printed on an A4 page. Many children of this age find it difficult to draw what they actually see, especially if part of their body is obscured by their pose. They "know" they have two arms and want to include them both in their picture even if their body is turned to the side and cannot actually be seen.

We help the children to find the contours of their picture by asking them to trace the photograph and then to draw their portrait by looking at both the photograph and the tracing. An additional way to show the children the contours of their picture is by using an "edges" filter in image manipulation software such as Adobe Photoshop Elements.





The photograph is then used to match the colours the children need to mix to complete their portrait. In particular it helps them fill the whole picture with colour rather than paint a strip of sky at the top and a strip of grass at the bottom.



The resulting portraits are generally well-proportioned, realistic and accurate, not to mention extremely satisfying for the children to produce.



Lynne Watson is ICT Co-ordinator at Hawthorns First School, West Sussex

Integrating Control

Linking elements of DT and ICT using control software

Philip Griffin

Introduction

One of the most important areas where DT and ICT can be integrated is in the teaching of control technology. From Year 4 upwards there is an expectation that children will learn how to use a control program to create sequences of instructions to control different devices. There is thus an expectation in the DT scheme of work that ICT will be used, and vice versa. Rarely for the QCA scheme of work, this is an area of conflict between the DT and ICT elements, with the build up of skills inconsistent between the two subjects and the different units within DT. Some adjustments need to be made to present a consistent approach to the teaching of skills of control technology so that children from Year 4 to 6 gain a better understanding of this aspect of ICT.

There are now two types of program which can be used to control devices through a control box. The original QCA scheme of work assumed in many instances that the control program would be based on **Logo**, a program which perhaps has not reached the expectations of its originators. The other type of software which has more recently been used for control purposes is more akin to a flow diagram with each symbol denoting a particular action. Often these programs also feature an onscreen picture of the device being controlled which reacts to the program. These mimics alleviate the need for each computer to be attached to a control box for the children to receive feedback on their sequence of actions. One of the programs which offers control through flow diagrams and mimics is **Flowol**.

The QCA scheme of work

In Years 4, 5 and 6 there are three different ICT units which involve controlling mechanisms. The electrical control section of DT is scheduled to be taught twice in the same period, once in Year 4 and once in Year 6, although through the use of optional units there are five different alternatives.

Year	DT Units	ICT Units	Control Skills
4	4c Torches		Monitoring of 1 input Control of 1 output
	4e Lighting it up		
	4d Alarms		Monitoring of 2 inputs Control of 1 output
		4e Modelling effects on screen	Control of multiple outputs.
5		5e Controlling Devices	Control of multiple outputs and a motor
6	6c Fairground		Monitoring of 1 input and control of a motor
	6d Controllable Vehicles		
		6c: Control and monitoring - What happens when...?	Monitoring of multiple inputs and control of multiple outputs.

Progression in the ICT units

As shown in the table above, there are three ICT units in years 4 to 6 that deal with Control. The first of these, 4e, is based on Logo. The unit can be adapted so that it is more appropriate to use with a control program such as Flowol. Key ideas, such as "that the screen turtle can be given commands to produce a specific shape on screen" refer to the idea that commands typed into the computer effect what actions the computer takes. It could easily be replaced by a similar key idea "that the mimic can be given commands to produce a specific action on screen" which would be more suitable for a control program. Our school does use Unit 4e in its entirety, but it is taught at Year 3 rather than Year 4, allowing the adaptation of the unit for control in Year 4.

Unit 5e, Controlling Devices, as written, is the first unit which deals with computer control. The devices it mentions

controlling are simple lights and a single traffic light and an advertising display. The unit is written in a way that suggests logo without any specific mention of the program to be used and is easily adapted to either logo or flowchart based programs. The emphasis is on simple devices that can be controlled with no inputs or switches controlling them.

The final unit, 6c, does deal with such matters. From the beginning, input devices are mentioned and examples are given of logo procedures which would monitor inputs and control outputs. Different input devices are indicated such as a pressure pad. The eventual project is to make a house alarm system with various different systems such as light sensors for floodlights and magnetic switches to show when a door has been opened.

Progression in the DT units

There are three alternative units for Year 4 in the electrical control element of the QCA scheme of work. The "Torches" unit (4c) although using inputs and outputs in the form of a switch and a light bulb, does not specifically mention control. It would be possible to use control software to control a light of some kind, but rather pointless. The "Alarms" unit (4d) is very different. Here specific mention is made of computer control as an essential assignment stage. The final alternative unit, "Lighting it up" (4e) again specifically mentions control, but only as an possible rather than as an essential activity.

The Year 6 electrical control activity also has two alternate units. "Fairground Rides" (6c) specifically mentions control programs to control the ride the children have made. "Controllable Vehicles" (6d) also states in the introduction that the vehicle made can be linked to a computer control box, although does not give any practical examples of how this might be achieved.

Although these units give a good progression of most DT skills, the progression in terms of control is less clear. Two of the Year 4 units require only that an input should be monitored and used to turn on and off an output. However if an Alarm is accurately modelled, two inputs will need to be monitored, as the alarm needs to be switched on and then activated before sounding. This requires a "AND" procedure which the younger children find difficult to understand and links more clearly with the ICT unit 6c "Control and monitoring - What happens when...?"

The Year 6 DT units are more consistent, both requiring the control of motors. Motors are more complex than ordinary switches, as they have three states (off, forwards, backwards) as opposed to the two states of a switch. Motors are also capable of running at different speeds, a further complication.

Control skills - a possible progression

From examining the control units and the possibilities of Flowol, it is possible to list some of the control skills that the learners can acquire. These are:

- Controlling outputs: switching devices on and off.
- Delay: causing the procedure to wait for a specified time before the next command.
- Editing procedures and finding improvements
- Monitoring inputs: These are in the form of a question in a decision box- Is input 1 on (or off). From the answer to this question two outcomes are possible.
- Looped procedures where once the last instruction has been completed, the procedure returns to the beginning and repeats continually.
- Parallel processing: where several procedures start at the same time. This is characterized by several start and stop symbols.
- AND operations (conjunctions) If this is the case and this is the case then a particular event occurs.
- Sub-procedures: Here the main procedure is split into several small sections which are called at the appropriate point. This allows one small part of a larger whole to be perfected before moving on to the next step. Sub procedures can also be repeated a number of times.
- Motors: which can be off, rotating clockwise or anticlockwise and can also be run at different speeds.
- Counting how many times a particular activity has occurred and then undertaking some action once this has happened.

A progression of units

DT and ICT control progression

Year	DT Unit	ICT Unit
4	4e Lighting it up*	5e Controlling Devices part
5	4d Alarms*	5e Controlling Devices part
6	6c Fairground	6c: Control and monitoring - What happens when...?

** only one of these two DT units to be undertaken*

This is just one possible way in which the different control elements can be linked. If all the DT units suggested below were undertaken then there would be an overemphasis on the electrical control element of DT. If the Alarms unit were taught in Year 5, one possibility would be moving the mechanical control unit (Moving Toys) from Year 5 to Year 4: this is possible and in my experience Year 4 have successfully completed this unit.

Teaching the units

Teaching the control units can be divided into three activities- teaching the DT, the ICT and then giving the learners time to connect their own DT work to the control box. As most schools only have one control box, it takes a considerable time for each child or group of children to try out their own constructions with their own procedures. For this reason the taught work is best in the first half of the term, leaving plenty of time in the second half of the term for the children to work on their own procedures.

When the learners are using the program and mimics, it is probably best to connect the control box to one of the computers so that the learners become familiar with its use before trying to use it for their own construction. A number of models of the mimicked items, such as traffic lights and a lighthouse are needed for this. Some of these are commercially available whilst some might have to be home made.

Learners of different abilities will naturally reach different levels in this as in all areas of the curriculum. More able children will be able to proceed further and create more complex solutions to mimics. In the suggestions below not all children will understand all of the concepts, which will have to be reviewed the following year.

If there is sufficient time the children could evaluate their design and their procedures using a word processor. Photographs of their finished design, a written evaluation, a screenshot of their procedure can be combined. An explanation of their procedure is particularly valuable in ascertaining the level the children have reached in creating their sequence of instructions.

Year 4

In the DT element of this unit the children have to design a light. Some examples of different kinds of light can be modelled using the control box and mimics available in Flowol. Mimics that link with this unit include the pedestrian crossing, lighthouse, police car, fire engine and traffic lights. If the children then decided to make any of these lights the appropriate mimics could then easily be used to create a sequence of instructions for the mimic.

The ICT skills would use the same mimics with the addition perhaps of a few more of the simpler ones, such as the robot.

Mimic	Skills
Zebra Crossing	Use of start, output, delay and stop.
Lighthouse	Inputs and decision boxes Editing procedures Slowing procedures so that each stage can be analysed.
Police Car Fire Engine	Parallel processing to make different outputs work. Multiple inputs
Traffic Lights (single set)	Sequencing

Year 5

The Alarms unit asks the teacher to discuss different examples of alarm systems and introduces the idea of feedback. This can be demonstrated through some of the Flowol mimics. The finished alarm should also be connected to the control box and an appropriate procedure be written

which uses an "AND" statement: If the alarm is switched on and someone touches the pressure pad then the alarm will sound. This is quite possible in Flowol by using two decision boxes connected to each other.

Mimic	Skills
Police Car or Fire Engine	Recap of last year's work
Traffic Lights	Introduce the idea of sub procedures, one for lights going red, one for lights going green. Extend to both sets of traffic lights in the correct order using a main procedure and a set of four sub procedures.
House Alarm	And operations to make the alarm work- If the alarm is switched on and the pressure pad is pressed then the alarm sounds.

Year 6

The Fairground ride unit involves the children in choosing and creating a fairground ride such as a merry-go-round or big wheel. With the difficulties involved in visiting a fair for most schools making this option difficult, photographs and videos, in particular, are an important part of the introduction to the topic. The focus on pulleys is also difficult to demonstrate to children, as for safety reasons most pulleys

are well hidden by protective casings, so video of them moving is also very useful. Most of the control programs, such as Flowol, can demonstrate on/off actions very well, but have much more difficulty showing movement. The children therefore have to begin to work at a non-concrete level.

Mimic	Skills
Kitchen	Recap of last year's work. And operations
Pelican Crossing	Combining inputs and sub procedures
Level Crossing	
Auto Home	
Fairground Ride	Writing procedure for Fairground Ride, which uses a motor to speed up, slow down, and if a big wheel, rotate short distances to allow riders to get in and out of gondolas.

Merry-go-rounds and Big Wheels

As a Year 6 teacher, my class tackled Fairground Rides last spring term. The children had already spent half a term with Flowol in both Years 4 and 5. In the half term allocated to Flowol in Year 6, the children spent lessons on five mimics, the ones suggested above plus the bridge light mimic. To link more easily to the parallel DT project, the children worked in the same pairs for both activities.

All the children successfully used inputs and controlled outputs. Using the kitchen mimic, the children used parallel processing and the more able children also used AND procedures to enable outputs to occur in a particular set of circumstances.

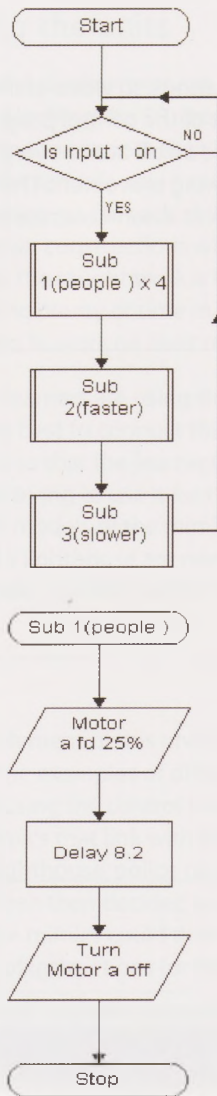
The children also successfully understood how to use sub-procedures for longer sequences, although not all understood why to use them. As part of the process of renewing the ICT portfolio, I videoed some of the children

explaining their work, where it became obvious that some children had a clear understanding of when and where to use sub-procedures, whilst others could use them but not explain the reason why.

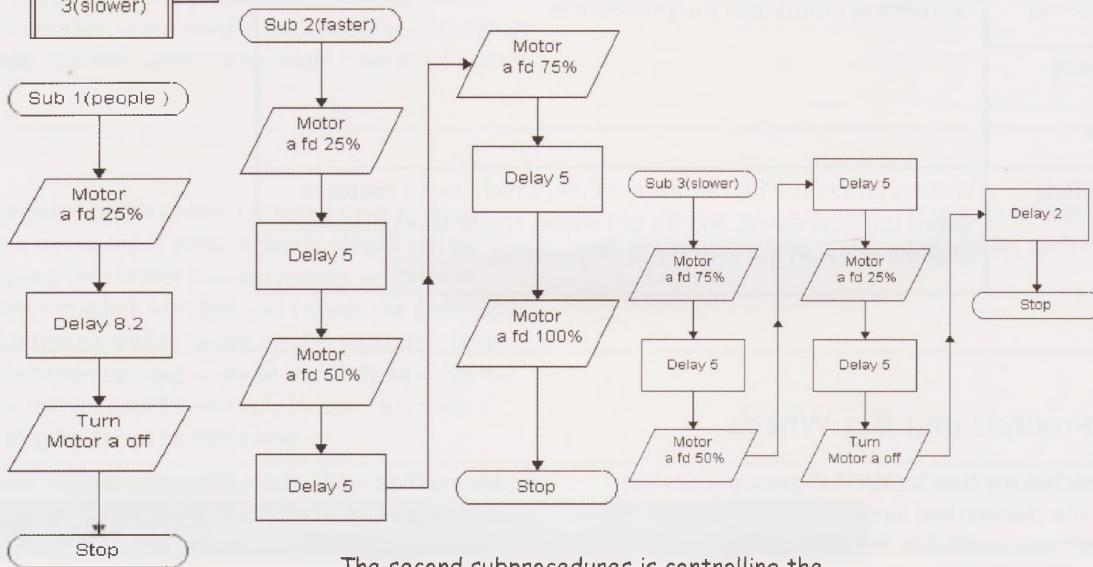
The final task was to create a set of instructions to control the Fairground Rides. Many used sub-procedures to speed up and slow down their ride, and, in the case of big wheels, to turn the wheel a small amount so that the imaginary riders could enter each gondola in turn.

At the end of the project, many of the children had achieved a very good understanding of the different aspects taught and showed they could apply their learning in different situations. Many of the children achieved high levels for their work, working at level 5.

fairground ride



This is our main chart. It is made out of three subprocedures that I put together to make the main chart.



This is the sub to let people on.

The second subprocedures is controlling the speed of the wheel. This one is making the speed faster the other one is making it slower. As you can see we broke the speed of the motors into quaters. We had to delay the speed so it could gradually get faster (or slower).

Our model is unfinished because the electronics weren't working. Also the band was to small.

The learning experience

Almost universally, children enjoy using Flowol. They are on task, motivated and learn quickly. There are several reasons for this. The program is easy to understand, and offers success for children working at a variety of levels. In the same way there is challenge for the more able. Feedback is quick and private- if the procedure doesn't work only they will know and they can easily alter it. Another positive feature is that there are many legitimate solutions to each mimic- there is not one solution but many.

Flowol is an easy program to use, and once mastered, allows access to high level concepts. This, coupled with the children's enjoyment when using the software, make it an ideal item of software for the control curriculum.

Further details can be found on the school's website -

<http://atschool.eduweb.co.uk/radstock/activities/ictsupport/flowol.htm>

Links to the Flowol website can be found here together with Captivate videos of how to use the software.

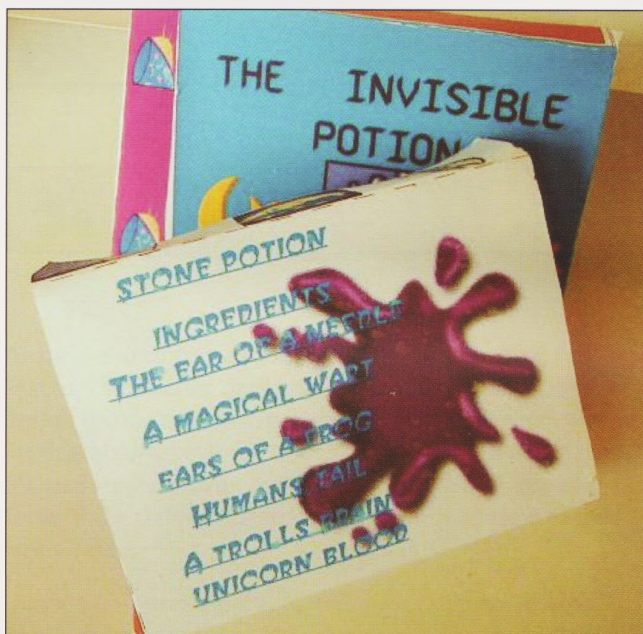
Philip Griffin
ICT Co-ordinator
Radstock Primary School

Using ICT in Design Technology

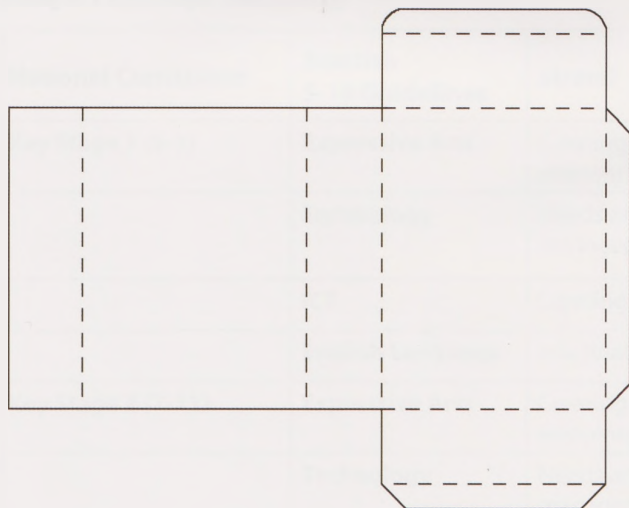
Rosemary Gledhill

In Unit 3A – Packaging - children gain knowledge about nets and about how complex 3D shapes can be made by using a net. They also learn simple graphical communication techniques. Work from this unit can easily be combined with Unit 3A ICT - Combining Text and Graphics and can also be linked to Unit 3B - Designing Sandwiches.

We have also used this work to link with work in creative writing – considering what ingredients could be put into a wizard's box. The children worked as a whole class on an interactive whiteboard to produce a class poem and then used Textease to produce the boxes.



We had previously carried out various focussed tasks so that the children were really familiar with using Textease - changing fonts, manipulating graphics, etc.



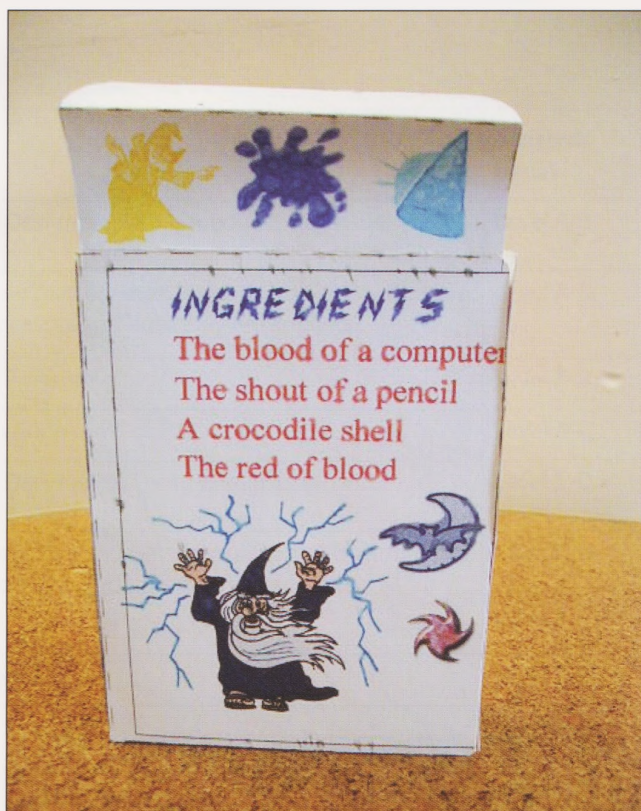
The net above was downloaded from the Internet as a Word document and then pasted into Textease. The Textease and Word version of the net can be downloaded from the school's website at -

<http://www.jessieyounghusband.w-sussex.sch.uk/curriculum/y3/packaging/wizardspackaging.htm>











The net was then locked to the page using 'Tools'. It was viewed at 60% so that the children could see the whole page - click on 'Looks' and then 60%. I made a resource bank with wizard hats, stars etc and saved it on our network. The children then manipulated the images, turning them round to fit into the net and re-sizing them and selecting fonts and colours. The class poem was available for them to refer to for ideas. The completed net was printed out on to thin card. Perforation cutters were used to score the nets for accurate folding.

At the end of the work, the children completed an evaluation sheet. This can also be downloaded from the school's website and is reproduced below.



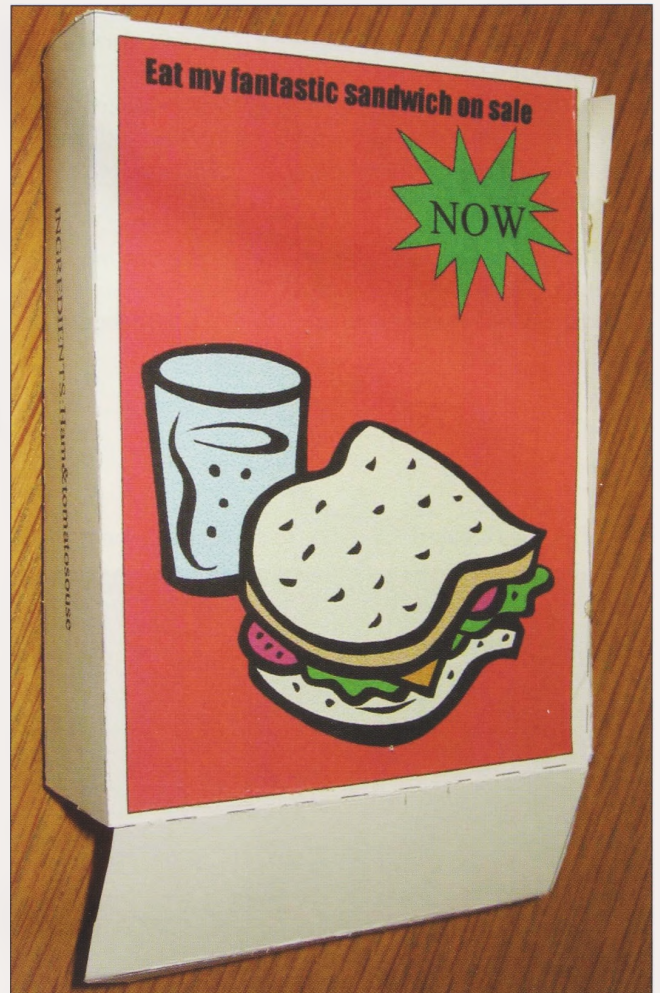
Recording my work

I designed and made a _____

Which fonts did you use?	I used these fonts because	
What colours did you choose?	I used these colours because	
Are you pleased with your box?	What do you specially like?	
Are there any things you aren't happy with?	How would you improve them?	
I CAN:		
Draw simple shapes, fill them with colour and change the border colour		
Insert a clip art image;		
Move drawing objects and resize them;		
Rotate a selected object.		



The children were delighted with their boxes and all managed to achieve good results. Some children needed some help with folding and assembling the boxes as this can be a little fiddly - hint - the glue 'blobs' available on a roll help here!



We have also combined this unit with Unit 3B - Sandwich Snacks. The children designed and made the sandwiches in Design Technology, taking photos as they went along with the digital camera. These photos were then saved into the children's individual work folders on the school network. Some of the children incorporated these images on to their boxes.

I made a Resource bank in Textease with suitable images for the children to use. Before the children embarked on creating the boxes, we spent some time examining packages and advertisements.

Using ICT in Design Technology

National Curriculum	Scottish 5-14 Guidelines	Strand	Scottish Level
Key Stage 1 (5-7)	Expressive Arts	Creating and Designing; Using media; Using visual elements	Level A-B
	Technology	Needs and how they are met; Resources and how they are managed; Processes and how they are applied.	Level A-B
	ICT	Creating and Presenting	Level A-B
	English Language	Imaginative writing	Level A-B
Key Stage 2 (7-11)	Expressive Arts	Creating and Designing; ; Using media; Using visual elements;	Level C-D
	Technology	Needs and how they are met; Resources and how they are managed; Processes and how they are applied.	Level C-D
	ICT	Creating and Presenting	Level C-D
	English Language	Imaginative writing	Level C-D

Rosemary Gledhill, ICT Co-ordinator, Jessie Younghusband School, Chichester.
www.jessieyounghusband.w-sussex.sch.uk

ICT and Art - QCA - People in Action - Year 6

Rosemary Gledhill

In this unit children explore how to convey movement in their work. They explore dynamics such as sport, dance as a starting point for making work in two dimensions. They look at how the idea of movement is shown in different kinds of art, such as photography, illustrations, cartoons, etc. and experiment with different methods and technique to show movement.

The children in Year 6 used the Internet to research how movement has been depicted. They studied Futurism and looked at various websites on the interactive whiteboard.



First of all, they created montages to depict movement.



Next, they decided on a movement they would portray in a photograph and took digital pictures of : (a) a still of the movement and, (b) something they wished to use as a background, such as a wall or the sky.



We had been studying Ancient Greece and some children decided to dress as Greek Athletes



They then used a photo editing program to cut and copy the image to suggest movement. We used MGI Photo Suite, but most photo editing programs allow this sort of manipulation.



The children then experimented with special effects, saving each effect as they went along.



This is very important because the original image cannot sometimes be retrieved once the effects have been used.

Finally, the children then worked in groups to act a movement in slow motion and took short video clips using the Sony Mavica camera.

Some of these can be seen on the school's website at

<http://www.jessieyoungusband.w-sussex.sch.uk/curriculum/y6/movementart/movementart.htm>

Rosemary Gledhill, ICT Co-ordinator,
Jessie Youngusband School, Chichester

The Gwineartate Project

Pete Worrall

Introduction

The Gwineartate 2001 - 2002 project was initiated and funded through Becta and the Tate Gallery St Ives.

This draft report is intended to focus on the aims and realised objectives and includes my personal view of issues raised through working on this project.

My role in this project was as a facilitator providing an interface between the the Tate Gallery exhibition and Art /ICT development in the school. This involved designing an outline programme in consultation with the teachers and pupils in the school and education staff at the Tate St Ives and providing support through discussion and practical demonstration.

The aim of the project was to develop the use of ICT in Art and Design at Gwinear County Primary School through an exhibition of work by the local artist Bryan Wynter at the Tate St Ives.

The whole school (80 pupils in 3 classes) were involved in the project and initial project timetabling planned for a training afternoon in school, a one day practical workshop in the Tate Gallery, followed by three days of practical workshops in the school.

It is worth adding at this point I was indebted to the practical professional support and guidance of Susan Lamb and Dave Davies (Tate Education), both in the context of planning and workshop development.

Preliminary School Preparation

Decisions were made regarding the choice of software for each group. In addition we decided that the oldest pupils would form an executive group. This group had specific responsibilities regarding their direct use of digital cameras to record the whole project and the organisation of this data so that it could be presented through PowerPoint. This small group were consulted regarding the project activities and attended a meeting with teachers and artists to discuss project development. They were also invited to the Tate Gallery so that they could gain direct experience of the hanging of the Bryan Wynter exhibition, (parents were invited as well). In school, for about 4 months, teachers prepared pupils for each stage of the project through discussion and follow up homework so that the pupils gained a clear understanding of the project.

Workshops in the Gallery

The preliminary introduction to the exhibition was through a one day whole school visit - this involved a number of activities including:

- i) Drawing
- ii) Computer animation
- iii) Collage (group installation)

- iv) Site specific low relief sand sculpture (on the beach)
- v) Slide Projections of coloured ink
- vi) Projected drawings on acetate
- vii) Language workshops

After these workshops, it was possible to plan the next stage of the project.

Designing three projects through the life of a local artist

Introduction

It is worth considering four areas with regards to the art education interface and gallery / museum rolling exhibition programmes.

- i) Understanding - (historical context / intentions / materials / formal qualities / influences)
- ii) Interpretation - (empathy in a contemporary context)
- iii) Response - (development / use of ICT?)
- iv) Presentation

Note: ICT provides an additional tool in which to extend outcomes in the context of the above areas. The degree in which ICT makes a key contribution (%) within a project (or through a response and presentation to an exhibition programme) is a critical issue.

To summarise in planning for an exhibition it is important to:

- i) Gain a secure understanding of the artists work in a unique exhibition context (unlike school). This might involve discussions about collections / histories.
- ii) Relate this knowledge of the exhibition through the pupils contemporary lives - art in the past in a present context.
- iii) Allow pupils to consider their position as artists through natural responses to the exhibition via visual documentation and development (albeit in a structured way), whilst at the same time giving pupils a sense of ownership - without forgetting the use of ICT.
- iv) Enable pupils to present their responses and evaluate.

Planning

My initial approach to this exhibition was to gain an understanding of the artist's life and work through discussion with staff at the Tate, through visiting the artist's studio and other locations where he spent many years of his life and through reading various texts and exhibition catalogues. In addition it was important to place the artist in the historical context which he was part of and through some anecdotal information about his life, which would be accessible to the pupils in the school.

In the case of Bryan Wynter it was possible to identify three different periods in his artistic life in which his work developed and changed.

i) 1935 -1945 Early painting of the Cornish landscape incorporating a mono printed ground which was used as an experimental starting point for over working suggestions of detail - tin mines, rockfaces and birds. In this context I used historical information regarding one painting with seagulls, which related to Wynter's wartime experiences as a conscientious objector, in which the birds could be read as a threatening metaphor for aircraft.

ii) 1960 Experimentation with movement through simple kinetic motor-driven hanging pieces of cards reflected by mirrors. Wynter described this piece as IMOOS (Images Moving out onto Space). These may be interpreted as the artist's attempt to convey 3 dimensional movement in space.

iii) 1970 Large abstract paintings of the elements including Waterflow. Wynter owned a glass-bottomed canoe which enabled him to observe water movement at first hand. He produced a series of simple pentel (felt tip) drawings and in his later years produced a number of large abstract paintings on this theme.

It is worth noting that this is a necessary simplification of this artist's lifework, however it acted as a focus so that pupils aged between 5 and 11 could begin to understand the artist's work and form initial responses to the artist in a gallery context.

Gwineartate Project and ICT

ICT provides a relatively new technological medium in art education, however in the Gwineartate project a range of technologies were used including ICT. In this project ICT was used in combination with other media and as a tool for dissemination.

It was used to develop the project as follows -

i) Recording (digital documentary photography and video)

ii) Development of specific digital techniques - animation, drawing with the mouse, colour manipulation and presentation. These techniques were developed in conjunction with traditional methods to give pupils and teachers a greater understanding of Bryan Wynter's work.

iii) Presentation (PowerPoint / digital video /animation) of the project (pupil led)

Gwinear County Primary School Artist in Residency

Day 1 Digital IMOOS (Fire)

Learning Intention

i) To design and construct a three dimensional mobile based on text in local newspapers

ii) To understand how a digital camera can record movement though short video clips

ICT Resources

One computer Intel Movie Creator, Sony Mavica Digital camera with movie capability

Activity

The IMOOS were created from one square of card. This was divided into 4 irregular rectangular sections and cut out with a knife. On the front surface of the card, local newspapers and magazines that the pupils had selected provided the collage source material. The reverse side of the strips of card were painted in acrylic paint. The cards were hung onto wire by nylon threads and the wire was hung onto a long strip of wooden doweling which the children could hold. The IMOOS were positioned in front of reflective card and convex mirrors and recorded with the digital camera as still digital images and short film clips. These clips could then be inserted into Powerpoint presentations, The Intel Movie maker camera was also used to record, present and edit the films. The final outcome of this day was an experimental film which was shown in the Tate St Ives.

Observations

Due to the interlocking nature the individual cards, it would have been useful to record each card, front and reverse, before they were assembled as mobiles. There is one example of this. Balancing the cards so that they hung correctly played an important part. The time required to record the films was too short, although Dave Davies was able to complete this later. I have not really been able to review the individual experimental films - however the inclusion of text and digital recording provided contemporary responses to kinetic works created in the 1960s. As a postscript the pupils at Gwinear produced a short IMOOS performance which they performed in the Tate Gallery with sound.

Note: This group had the responsibility of recording the whole project through digital cameras and also by creating PowerPoint presentations (which were shown in the Tate Gallery)

Day 2 Alien bird in a local landscape (Earth / Air)

Learning Intentions

i) To explore mono printing and landscape in the context of Bryan Wynter's early work

ii) To understand how to produce a computer generated drawing (detail) for printing onto acetate (to provide one of the focal points for the landscape)

iii) To understand how to apply art and design software colour filters to digitally recorded prints to create a new range of colour scales and moods.

ICT Resources

Computer systems with Paint Shop Pro, Printer, Acetate, Digital camera

Activity

After an introduction each pupil produced a number of

sketches on one sheet of paper showing different unique aspects of the local environment. Then two new activities were introduced firstly a computer generated drawing of a bird (pupils had already produced pencil drawings for homework). This was printed onto a sheet of acetate. Secondly groups of pupils produced a mono print onto A2 sheets of paper and then applied thin coloured tissue paper on top of the print. These prints were recorded with the digital camera and colour changes were applied through the colour filters in Paint Shop Pro. The final stage was for all pupils to use their sketches of details from the local environment to include some of these as a focus on top of their mixed media mono prints. The computer generated acetate bird was positioned on top of the print. Many of the mixed media prints were framed and exhibited in the Tate Gallery.

Observations

This day required careful organisation - at times there were three activities taking place at the same time - mono printing, computer generated work and drawing. It was not possible for every pupil to colour manipulate their print during the day however 10 pupils did accomplish this. In the afternoon it was decided to send half of the group back to their classroom with their teacher to complete the print details. At the end of the day we staged an impromptu exhibition and evaluation session in the school gallery area.

Day 3 Waterflow installation and Animation

Learning Intentions

- i) To design storyboard drawings from projected slides of moving coloured ink and music composed in response to Bryan Wynter's work.
- ii) To create a short animation based on waterflow using Complete Animator.
- iii) To produce an acrylic square format painting based on moving water.
- iv) To experiment with installation / exhibition ideas using the acrylic squares.

ICT Resources

Computer systems with Complete Animator

Activity

The storyboard drawings were produced through observing projected slides of moving coloured ink accompanied by a soundtrack composed by a local musician in response to Bryan Wynter's work. Two activities followed - activity 1 involved using the storyboard sheets to produce a riverbed drawing on a square piece of mounting card, followed by using sponges to create a ground on which details could be added using thinned acrylic paint onto the surface (so that the pencil lines were still visible)

Activity 2 involved six frame riverflow animations using Complete Animator. In the afternoon there was a final activity in which pupils used thin sticks to apply details of their riverbed. The squares were arranged in different configurations.

Observations

This day produced two outcomes; 26 animated films and riverbed acrylic squares. The squares provided an important resource for discussion as they could be moved into different configurations by the pupils. They were individually recorded so that they could be insert into PowerPoint and presented in different ways through using the animation effects. The Complete Animator films were joined together to create a whole class film.

Pete Worrall is a Senior Lecturer in the Faculty of Education, UCE Birmingham



Naace Conferences

Naace Annual Strategic Conference: ICT as an Engine of Change

The Riviera Centre, Torquay, Tuesday 28 February to Friday 3 March 2005

The Naace Annual Strategic Conference is the definitive ICT Conference in the UK for all those involved in advancing education through the use of ICT. It brings together colleagues from all over the UK and beyond, together with key players from the government and the industry, and provides a forum to share best practice and exchange ideas. This year's conference is taking place at the Riviera Centre, Torquay from 28th February - 2nd March 2006.

Who should attend and why?

As the largest event of its type in the ICT calendar the Conference is open to all Naace members and sponsoring partners.

(see www.naace.org for details of how to join).

The varied programme is designed to provide, insight, information and opportunities for discussion of a diverse range of issues which affect those working in the Educational ICT arena. The theme for this year's programme is ICT as an Engine of Change. We hope the conference will help augment your confidence, knowledge and understanding in order to ensure ICT is the catalyst it should be for improving teaching and learning.

For full details of the conference programme and booking forms, please visit the Naace website at www.naace.org

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PO Box 6511
Nottingham
NG11 8TN

T. 0870 240 0480
F. 0870 241 4115
E. office@naace.org

www.naace.org