

Excellence and Enjoyment: learning and teaching in the primary years

Learning to learn: key aspects of learning
across the primary curriculum

The Coalition Government took office on 11 May 2010. This publication was published prior to that date and may not reflect current government policy. You may choose to use these materials, however you should also consult the Department for Education website www.education.gov.uk for updated policy and resources.

Excellence and Enjoyment: learning and teaching in the primary years

Understanding how learning develops

**Learning to learn: key aspects
of learning across the primary
curriculum**

Professional development materials





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General introduction

Helping children to develop as confident, enthusiastic and effective learners is a central purpose of primary education. *Excellence and Enjoyment: a strategy for primary schools* affirms a vision for primary education that provides opportunities for all children to fulfil their potential through a commitment to high standards and excellence within an engaging, broad and rich curriculum. Ofsted reports show that the best primary schools and early-years settings achieve this. In these schools and settings children are engaged by learning that develops and challenges them and excites their imagination. The learning and teaching environment in these schools and settings is shaped by an understanding of what children can achieve and by teaching that meets their individual needs as learners.

A note about the units

This collection of continuing professional development (CPD) materials on key aspects of learning across the primary curriculum is one of six units that focus on important aspects of learning and teaching in the primary years. The six units are organised into three themes:

- Planning and assessment for learning
- Creating a learning culture
- Understanding how learning develops

Although the content has been organised under the headings given above, it often overlaps across units. For example, questioning is one of the key teaching strategies explored in the *Conditions for learning* unit but it is also addressed in other units.

Learning and teaching is a broad and complex area of study. It is important to note, therefore, that **these units represent a starting**

point for whole-school investigation, action and reflection on areas for improvement identified within the school development plan or, within an early-years setting, as part of the management plan or quality assurance process. The introductory guides to *Learning and teaching in the primary years* (May 2004) offered advice and suggestions for identifying areas for development through self-evaluation.

Self-evaluation is an essential element of effective school performance management systems. Such systems make clear links between school





improvement, teachers' performance, management objectives and CPD plans and can therefore help to deliver personalised learning for all children. The CPD materials in these units provide opportunities for professional discussions about teachers' work which will support both individual and school development needs.

How to use the units

There is no expectation that schools and settings will use all of the materials in the units. You should use the materials flexibly, to support your school development needs and CPD focus.

You may, for example, decide to combine elements across units as well as within units, or select one or two sections within a unit for attention. In order to facilitate such cross-unit and within-unit usage, a chart itemising the content of each unit is given on the inside back cover of all the units.

Each section of a unit includes materials for staff study, discussion and reflection, along with ideas for how the materials could be used in professional development sessions. Some of the suggested activities are developed fully to provide models for organising staff sessions; other suggestions are briefly outlined.

Schools and settings may go further than indicated in the materials by using some of the many excellent resources that already exist, for example other Primary National Strategy, QCA and DfES materials, subject association resources and readings and so on. Some suggestions for further resources are given in the units. Enquiry groups may also wish to draw on support from local authority colleagues or others and work with other schools and settings who are focusing on the same areas for development.

It is anticipated that a designated member of staff will take the lead in selecting and running CPD sessions based on these materials and that you will adapt and supplement these materials for your particular context.

While many of the materials are written with primary teachers and practitioners in mind, you will want to include teaching assistants, parents, carers and governors when appropriate.



Introduction to key aspects of learning across the primary curriculum

This unit is a companion to the *Progression in key aspects of learning* unit. It contains a series of case studies which illustrate how key aspects of learning are embedded within curriculum subjects and areas of learning. The key aspects of learning that are the focus of the *Learning and teaching in the primary years* materials are:

enquiry

creative thinking

evaluation

managing feelings

problem solving

empathy

reasoning

self-awareness

motivation

information processing

communication

social skills

Descriptors and some indicators of these aspects of learning are to be found in *Progression in key aspects of learning* and it may be helpful to look at this before examining these case studies. The social and emotional aspects of learning are also discussed in the *Conditions for learning* unit. Examination of the case studies within this unit can enrich discussion on how the aspects of learning identified above are manifest in the curriculum.

Further case studies in this unit illustrate how and why schools and settings have linked literacy, mathematics and ICT with other curriculum areas to enhance and enrich children's learning experiences.

The case studies all contain information about the school, the lesson context and the aspects of learning and subject-specific skills developed in the lesson.

The aims of this unit are to:

- provide fully contextualised examples of practice which demonstrate how key aspects of learning are embedded and developed within curriculum contexts;
- support schools and settings in recognising key aspects of learning within curriculum contexts;
- illustrate how high-quality teaching supports the development of key aspects of learning.

Section 1 Video case studies

This section contains a series of case studies showing a range of curriculum areas being taught at Key Stages 1 and 2. The sessions described give a more detailed account of some of the examples of practice in the *Progression in key aspects of learning* unit.



The case studies are given here in more detail so that you can examine both the subject-specific skills being developed and the key aspects of learning that these lessons encompass. These case studies demonstrate how key aspects of learning can be developed within curriculum subjects. Focusing upon learning-to-learn skills that occur across the curriculum does not mean developing a new curriculum. Rather, it means focusing more explicitly upon aspects of learning that are already promoted in learning and teaching. These case studies can also be used flexibly by the person taking the lead in learning and teaching to enrich the CPD activities suggested in other units in the *Learning and teaching in the primary years* materials.



History

Westbury Park Primary School, Bristol, Year 5

The launch of the SS *Great Britain* (video clip 1)

School context

Westbury Park is a large city primary school in a suburb of owner-occupied housing. About a fifth of the children in the school are from diverse ethnic backgrounds. The Year 5 class has 14 boys and 16 girls. One of the children has a statement of special educational needs because of attention deficit activity disorder and has 12 hours' support from a teaching assistant.



The school's approach to learning

The history lesson described in this case study reflects the school's philosophy and the initiatives it is pursuing to provide creative, enjoyable and challenging learning experiences for children. The lesson also incorporates wider dimensions concerned with raising children's awareness of the learning process and supporting them in reflecting on their learning.

The school has been working in cooperation with the University of Bristol on the Effective Lifelong Learning Inventory (ELLI) project. This project aims to develop children as learners and equip them with lifelong learning skills. It has identified seven dimensions for effective teaching and learning. These dimensions are:

- **learning relationships** – developing children as effective partners in learning with their peers, teachers and other people;
- **changing** – children having a philosophy and confidence that they can be more effective learners over time and develop strengths in other learning dimensions;
- **resilience** – children being able to realise that they will face challenges and that they need to cope with their emotions when faced with these challenges and to persevere;
- **critical curiosity** – children developing a sense of wonder to try and find out what is really going on (Why?, What?, Where?, How? questions are important);
- **meaning making** – children becoming good connectors who can see that what they might be learning in the classroom relates to the wider world and who can make links with prior knowledge and learning in their own lives;
- **strategic awareness** – children becoming responsible for their own learning and having a toolkit of strategies which they are able to use in any particular learning situation;
- **creativity** – children being encouraged to use their imagination and not be constrained by rules.

The children identify which of the learning dimensions they need to be strong in for a particular activity. These are marked on learning placemats which children have beside them as they are working. Each placemat has a concept line and, at the end of the lesson, individuals mark themselves along the line in relation to a particular learning dimension. Selected children come to the front and place themselves along the class concept 'washing' line. They are asked to reflect on why they have placed themselves in that particular position. This provides opportunities for reflection and explicit discussion on their own learning styles and learning strategies. This can be seen in the video clip.

The learning dimensions used in this school are those identified in the ELLI project. However, the process of helping children to be explicitly aware of their learning skills, and of encouraging them to reflect on how to improve these skills, is the same irrespective of what particular skills are called, for example whether they are learning relationships (ELLI), working with others (National Curriculum) or social, emotional and behavioural skills (SEBS).

The history unit

The case study lesson developed from children's work in a number of areas. In the previous term, children had completed a history study unit on the Victorians. Key themes addressed were: ways of life, including the lives of rich and poor people; work and play; working in a factory; and education. The unit concluded with a visit to the 'Bath at Work' Victorian museum. A homework project over a period of three weeks had provided opportunities for children to research a feature of Victorian life of their own choice. Much of the background knowledge that children employed during the SS *Great Britain* lesson linked back to their work on the Victorians.



Throughout the year, the school has intensive weeks focused on reading, science and the arts which provide opportunities for children to pursue subjects in depth. The arts week was based on the theme of the sea and, in Year 5, work for the week linked with their previous history topic on the Victorians. This was a good opportunity to revisit an earlier topic, to make links across other curriculum areas and to facilitate children creating meaningful links by making these more explicit. The children in Year 5 created a storyboard collage which depicted scenes from the (local) launch of the SS *Great Britain*. Two English folk musicians were involved in the arts week and one of the songs they used was a Victorian song to celebrate the launch of the SS *Great Britain* in 1843. They can be heard performing this song on the video that accompanies this case study. Following the arts week and prior to the session seen on the video, the children had visited the SS *Great Britain* in Bristol harbour.

The history session described was the culmination of all these strands.

Objectives

- To use a range of historical sources to answer questions about the past (information processing) (H4a).
- To communicate historical understanding (reasoning) (H5c).
- To develop awareness of differing viewpoints of events (empathy).
- To reflect on learning (self-awareness).

Account of the lesson

Introduction

Reasoning

The lesson began with an overview. Children were told they would be looking at sources to find out about the launch of the *SS Great Britain*. This was followed by an activity to engage children's enthusiasm and interest and also to link with their prior knowledge. The teacher revealed a number of items and the children were asked to discuss with each other how these linked to the *SS Great Britain*. The detailed answers revealed the value of the visit to the ship prior to the lesson and demonstrated that the incidental facts relating to people's lives were of great interest to the children.

The teacher then modelled ways in which historical sources may be interpreted. The children focused on an oil painting of the ship being launched. They looked for the artist's name and asked questions such as: 'Was it painted at the time?', 'Where was the artist when the ship was launched?'

The teacher led the children on to consider what other sources might provide information about what it was like on the day. The teacher encouraged them to think of different people who were present at the launch and how they might have recorded their experiences of the day. They used think/pair/share (children considering and communicating their thoughts and listening to others' ideas). They demonstrated knowledge of a good range of potential sources of information (e.g. diaries, newspaper reports, letters to friends, photos).

The teacher explained the purpose of the main activity – to create a radio broadcast to inform those not at the launch what it was like. To help the children organise their thoughts, the broadcast would involve interviews with people who were present at the launch: Brunel, Jane Burt (female onlooker), Jake Naylor (sailor), Prince Albert and Mr Kingston (chairman of the steam

Considering different accounts and interpretations of the past

Raising and answering questions from historical sources

Knowledge of a range of sources to represent the past

packet company). The teacher briefly introduced the characters and talked about why they were present. Children were encouraged to think about the chronology of the day. A time line image of the day showing the main events was projected onto the whiteboard.

Main learning activity

In pairs, children wrote questions on sticky notes and placed these beside the characters they wanted to question. For example, Brunel was asked, 'How did you feel at the moment of the launch?' Children suggested that he might feel proud, but also rather anxious since the ship had cost a lot of money. He would be worrying about the success of the launch.

Source packs were introduced to the children. Children were asked to use a spider map to write down information and to help organise their thoughts. Colour coding to reflect different senses was used. Before beginning their research, children were asked to highlight on their placemats the key dimensions of learning which they would need to be strong in for this activity. Children listed learning relationships, curiosity and meaning making. In terms of meaning making, children recognised that they would be making links by drawing on their general knowledge of the Victorians and their visit to the ship. One child explained that he would also be making some educated guesses.

Children used the sources of information to record relevant information about their character and what they did on the day. The teacher had already selected the sources which they might find helpful for their particular character and placed them in the children's source folder. Children needed help concentrating on the sources and it might have been more effective if reading time had been built into the lesson to encourage the children to read the sources more closely.

Plenary

Following this activity, the teacher explained the organisation of the radio interviews. One child from each pair was to act as the reporter and the other was to be the historical character. Children were given five minutes to prepare for the interviews. On reflection, more time could probably have been spent on this and it might have been useful to have explored script writing in their literacy lessons prior to this. Children were interviewed in the 'hot seat' at the front of the class. They were all very engaged and wanted to participate. Costume props

Identifying with people living in the past

Self-awareness

Knowledge of characteristic features of periods and societies

Interpreting historical sources and inferring information

Communication

Empathy

Information-processing and reasoning skills

Enquiry

helped children get into role, for example Brunel wore a top hat and Jane Burt a shawl.

The children used their spider maps to help structure their questions and their replies. There was evidence that children had used the sources. For example, one child asked about the perfumed scent from the garlands and triumphal arches on display (information he had read about in the *London Illustrated News*). There was some evidence that they had begun to identify with characters' feelings. Brunel was asked whether he felt upset that there was so much fuss about Prince Albert's visit, when it was really his big day. Mr Kingston was asked what the smell of the engine room was like as he walked through on his tour of the ship.

Empathy

Reflecting on learning

Self-awareness and social skills

The teacher reminded the children of the learning dimensions and children placed themselves on the class concept line. In terms of learning relationships, children discussed how they had organised themselves in pairs as they researched different aspects of their character. For example, children noted how they had stayed on task, been respectful to other people and worked quietly, keeping their voices down. In reflecting on their meaning making children recognised the need to use information from the sources, their own wider historical knowledge gained in other contexts, as well as imagination and empathy, to create their radio report. The teacher noted that the children used a lot of information which they had acquired from their trip to the SS *Great Britain*, but felt that they needed further work on utilising the sources to gain more information.



The Primary History Association has published an article about using Brunel as the focus for a history unit of work (see <http://194.93.140.245/pdfs/PH/37brunel.pdf>).

Museum education, history, science

Brampton Junior School, Huntingdonshire, Year 5
The Fitzwilliam Museum, Cambridge, and the
University of Cambridge, Faculty of Education

The Ancients' appliance of science *(video clip 2)*



School context

Brampton Junior School is a large village school of about 300 children. It serves the local community, including the nearby RAF base. There is a high level of mobility in the school, mainly of children from service families. The Year 5 class in the case study has 25 children. Two children in the class speak English as an additional language and one child with Asperger's syndrome has a statement of special educational needs. A teaching assistant accompanied him on this visit.

The Ancients' appliance of science

In collaboration with Cambridge University Faculty of Education, the Fitzwilliam Museum has developed an innovative approach to teaching science and technology in tandem with history, which includes a wide variety of alternative learning strategies aiming to engage all children.

The approach aims to develop children's creative thinking about science investigations and technological problem solving. This is done by setting the work in a historical context, with learners engaged in an interaction with ancient artefacts. The museum provides the location for this immersion in the challenges facing ancient civilisations; the classroom provides the setting for children to then explore, first hand, their hypothetical solutions to these challenges.

The project draws on the programmes of study for history, science and design and technology and has to date offered this learning opportunity to children in Years 5 and 6, although it hopes to engage children throughout the key stage in due course.

Key aspects of learning

Developing key aspects of learning within the unit of work begins in the museum. Children embark on a journey of enquiry, asking questions of the objects around them. The classroom-based work that follows provides a rich environment for developing science 1 skills and processes – from asking initial questions and suggesting hypotheses through to carrying out, recording and drawing conclusions. At the same time, the modelling of solutions that some of the practical activities encourage enables children to engage with some aspects of design and technology. These include communicating ideas and making suggestions of what they



want to achieve (DT1b).

The vital element of presenting findings and being subjected to interrogation by both

teachers and peers not only provides explicit evidence for the assessment of learning, but also ensures that children have a time for reflection and evaluation of what they have learned.

Children involved in this project have learned to work collaboratively, to share and respect ideas, to develop their thinking skills and to have empathy with the ancient cultures with which they have engaged.

Objectives

- Characteristic features of the periods and societies studied including their ideas, beliefs, attitudes and experiences (H2a, b).
- How mechanisms can be used to make things move in different ways (DT4c).
- Scientific enquiry, including thinking creatively to try to explain how ... things work (Sc1).

Account of the session

Activities in the museum

The museum work involved unravelling the 'story' of one of the museum's most striking artefacts – the granite sarcophagus of Rameses III that stands more than two metres high – through a series of structured, open-ended questions. Initially working with the whole class, a typical dialogue was:

What do you think it is made of? Look very carefully at the stone. Compare it with other types of stone in the museum. Do you think it is dense and hard, or soft and crumbly?

Reasoning

Through comparison and close observation the children established that this was a hard, dense stone and either deduced or were told that it was granite.

Interpreting the past and giving reasons

Other questions posed included:

- Once the block is separated from the rock mass in the quarry it has to be moved, first across the rough terrain to the edge of the Nile. How could such a weight be shifted?
- How could ropes have been made?
- Would these people have pulled or pushed the block, or both, and why?
- Think about the surface the rock has to move across. Is there anything the Egyptians could have done to make the movement easier?

Reasoning, problem solving

At each stage of the interrogation, the children broke into small groups to search for archaeological evidence to support their hypotheses. For example, where a suggestion might have been made that metal tools were used to carve the granite, children were then required to scour the rest of this part of the museum to search for evidence of metal usage. Often, the reality of what they found in the museum required them to rethink their original ideas. The children worked in groups, recording their ideas on large sheets of paper.

Social skills

Enquiry

Problem solving, communication

They then fed back to the class so that ideas and suggested solutions could be shared.



Thinking creatively to try to explain how ... things work
How mechanisms can be used to make things move in different ways

It was a key feature of the questioning that the children were challenged to consider the broader cultural issues that affected the technological choices made by the ancient Egyptians. For example, why was granite chosen for the sarcophagus when limestone could have done the job just as well and would have been half the trouble to carve and manoeuvre?

By the end of the two-hour museum experience, the children had accumulated a list of possible solutions as to how the rock was moved from the quarry across rough ground, transported down the Nile and then moved to its final resting place encasing the mummified remains of the pharaoh. At the same time, they had begun to understand something of the ancient Egyptians, resulting in the development of an empathy with both the patrons and the producers of the stunning artefacts on display.

Activities in the classroom

The museum work was followed by explicitly linked science investigations that involved the children in problem solving which

took them into a relationship with the scientific principles that underlie the ancient technologies. Classroom management constraints regarding resources meant that children could not explore solutions to every problem that had been identified in the museum session. The five key investigations that were chosen centred around the physical and material sciences and explored the following:

- moving heavy loads across the desert – children were provided with large sheets of sandpaper, loose sand, dowelling, ‘lolly’ sticks, fabrics and water, along with bricks, string and Newton meters, with the aim of finding the easiest way to drag a brick through simulated desert;
- transporting heavy loads down the Nile – children were provided with a wide range of materials (natural and synthetic) with the aim of constructing a raft that would support the weight of a brick and could easily be drawn through the water;
- raising heavy loads – children were provided with bricks, strips of wood, an ample supply of wood off-cuts, weights, dry sand and string with the aim of raising the brick from the ground to the table top;
- challenging the ‘sand-ramp’ hypothesis for construction of the Pyramids and other high structures – children were provided with dry sand, volume-measuring equipment, water and some bricks (to act as ‘standard masses’) with the aim of building a sand ramp that could be used to drag a brick up to a height of half a metre off the table top;
- mummification and the preservation of once living tissue – children were provided with material of high water absorbency (disposable nappies of various makes) to mimic the water-drawing capacity of natron, the salt used to desiccate the pharaoh’s corpse, with the aim of ascertaining which is the most effective desiccant.

Friction

Floating and sinking

Levers

Strength of structures and the effect of mixing materials

Changing materials



Egyptian experiments: mummification

Absorption and dehydration

Testing the absorption of nappies

Nappy	Amount absorbed		
	Test 1	Test 2	Average
Brand 1	470 ml	420 ml	445 ml (3rd)
Brand 2	480 ml	450 ml	465 ml (2nd)
Brand 3	480 ml	480 ml	480 ml (1st)

Minimal instruction was given to the children undertaking the activities: simply open-ended challenges such as 'Could the ancient Egyptians have built sand ramps to help construct the Pyramids as history books suggest?' They were provided with a range of resources. Each activity was duplicated so that the children could see that different outcomes were possible.

The children worked in groups of three, which ensured there were plenty of points of view to discuss, but also meant that all the participants had the opportunity to get hands-on experience. Adults (teacher, teaching assistant, parent, university lecturer and trainee teachers) supported the work by acting as critical friends, circulating around the groups and making pertinent observations regarding children's progress. This work in groups provided opportunities for the child with Asperger's syndrome to develop his skills in working with others.



We used a lever and fulcrum. The lever was 1 metre and 6 cm long. It took 400-600 g to raise the brick up to the next level each time. The fulcrum was 1 cm each time. We used nine blocks to raise the brick up to the top of the structure so we could slide it across.

It took 12 newtons to raise the 2 kilogram brick and we used two different kinds of forces.

Overall we lifted the brick 56 cm right up to the top.

The ancient Egyptians must have found it very difficult, as we discovered today. It was really hard to keep the brick steady and lifting the brick without the blocks falling down. It was also hard to judge the right amount of weights.

A key requirement for the group undertaking each activity was to prepare a brief presentation of their experiences. The audience were encouraged to ask questions and to **evaluate** presentations. Not only did this help assess what the children had achieved but it also helped them to **review their own learning** and to reflect on the diversity of approaches that they had taken.

Discussion with the children and with adults who were involved in supporting the session identified five key outcomes:

- The activity was highly **motivating**.
- The activity required the **social skills** of cooperation.
- The activity engendered **empathy** not only with the specific culture being explored but at a broader human level.
- The activity provided a stimulus for **creative thinking**.
- The enquiry-based elements of the activity encouraged the development of sophisticated **information processing** and **reasoning** skills and the ability to reflect, **evaluate** and **communicate**.

Design and technology

Our Lady of Compassion Primary School, Formby, Year 6 and all the school

Friendly or fierce classroom guardians *(video clip 4)*

School context

Our Lady of Compassion Catholic Primary School has 225 children. There is also a nursery attached which serves a further 60 children on a part-time basis. The majority of children live in owner-occupied houses. The school has high expectations (which are shared by the parents and carers, who actively support their children in all elements of the curriculum) and achieves very high standards. Of the children 5% have a statement of special educational need and none speaks English as an additional language.

The Year 6 class in the video case study consists of 14 girls and 16 boys.



Overview of design and technology in the school

Design and technology is organised around a whole-school, three-day event each term. The school bases these events on the Nuffield Foundation design and technology units, which cover all the National Curriculum programme of study for design and technology (see www.primarydandt.org/home/index.asp). These units help staff with the planning and ensure a whole-school approach to design and technology, with a clear progression in skills throughout the school. Initially the staff adapted the scheme to suit their children and their own capabilities and subject knowledge in design and technology. As the teachers and teaching assistants have become more familiar with the units and have developed their own expertise, their expectations have risen and the quality and standard of the finished products have improved greatly. One teaching assistant has responsibility

for working closely with the design and technology coordinator in organising and resourcing design and technology in the school. She has developed a high level of expertise and interest in this subject and is using it as the basis for further professional study.

A significant feature of design and technology work is the positive impact it has on school and home relationships – many parents and carers have enjoyed the experience of working alongside their children. In the lead-up to the event, a detailed letter is sent out to parents and carers specifying dates and times when help is required. Beforehand they are given a specification of the unit of work so that they are prepared for the session. Very often parents and carers support their children in carrying on with the design and technology projects outside school, which enables the children to then share wider experiences with the class. The children gain a real sense of

community through working with parents, grandparents and other adults.

The children keep a record of their design ideas and skills work in design notebooks and these stay with them as they move through the school. The design notebook provides a record of progression for both staff and child.

Although the Foundation Stage does not follow prescribed units, practitioners are fully aware of the skills required of children and the design decisions that children will have to make as they progress through the school; they have used this knowledge to plan their own scheme of work.

Objectives

- To generate ideas for products after thinking about who will use them and what they will be used for (1a).
- To measure, mark out, cut and shape a range of materials, and assemble, join and combine components accurately (2d).
- To use finishing techniques to strengthen and improve the appearance of their product (2e).
- To reflect on the progress of their work as they design and make, identifying ways in which they could improve their products (3a).



Account of the unit of work

The Year 6 children were working on the unit of work 'Should your creature be fierce or friendly?' Within this unit the big task is for children working in groups to design and make a statue of a creature that will welcome visitors to the classroom during the day or act as a guardian after school and deter intruders. The design brief was that 'it has to be large enough to create an immediate impression, stable so that it doesn't fall over, stiff so that it keeps its shape, strong so that it doesn't break easily, durable so that it lasts a long time, made from readily available and inexpensive materials, and impressive through quality of construction and finish'.

Prior to the three-day event the children researched images of gargoyles, Viking longship prows, totem poles and so on and considered how these items were used. In their design books they explored possible designs and decoration, including facial expressions that were friendly or fierce.

Focused practical task that develops a range of techniques, skills, processes and knowledge

Generate ideas for products

Enquiry

To measure, mark out, cut and shape a range of materials, and assemble, join and combine components accurately

Problem solving

The children began by working in pairs to make a small guardian on which they practised the skills they would need to make a large guardian – careful measuring and cutting, different ways of folding and assembling – and considered challenges such as how to produce a stable structure, how to shape and join card and how to ensure rigidity.

The children all used the same range of basic techniques for folding and shaping card and worked to similar design briefs for this activity (making a skillasaurus) so they could compare and discuss and solve problems that arose in the making.

They evaluated these small-scale models for design problems and to see how they had addressed these. They then moved on to creating a large guardian. Some children scaled up their designs to make their large model. (As a pre-unit homework task they had undertaken some work on scaling-up from a small picture to a larger picture using grids.) Other children applied the techniques they had practised to an adapted design.

The children selected finishes for their design depending on the effect they wished to create (fierce or friendly).

When these models were completed the children undertook a rigorous evaluation, asking questions such as:

- Was this guardian supposed to be fierce or friendly?
- Does it look fierce or friendly?
- Can it be made safer? If so, how?
- Can it be made to look better? If so, how?

Evaluation

Evaluation

Evaluating processes and products

They discussed what they were pleased about and what further improvements could be made to their designs and models. The creatures now stand at strategic locations around the school.

During the event, other year groups concentrated on:

- fridge magnets;
- a fabric tree;
- musical instruments;
- vehicles.



PSHE, art and design

St Bartholomew's Primary School, Lewisham, Year 6

Who am I? (video clip 5)

School context

St Bartholomew's Primary School is a Church of England primary school of 290 children, situated in an area of mixed housing – both owner-occupied and social housing. Of the children, 40% are from diverse ethnic and cultural backgrounds and 18% have registered special educational needs. This case study features a Year 6 class with 15 girls and 13 boys. There are four children who speak English as an additional language and five children who have identified special needs (one at school action plus with learning and behaviour difficulties and four at school action with learning difficulties). These children had targeted support from a teaching assistant in mathematics and English plus additional individual reading support. In the session described they were supported by careful pairing with other children.



Overview of the case study

As part of three successive units of work which form an 'identity project' to support Year 6 children in preparing for transition to secondary school, self-awareness is developed through art and design, history, literacy and PSHE. In the art and design unit of work seen on the video, the children make individual batik panels representing themselves and combine these to create a class banner. The three units aim to answer the questions 'Who am I?', 'How do I come to be living in this place at this time?' and 'What influences have shaped who I am?'

Following the art and design work seen on the video, the class research immigration into the local area after the Second World War, particularly the experiences of immigrants arriving on ships such as the *SS Windrush* and the challenges they encounter in a new and different culture. From this, children are encouraged to reflect on what it means to move to a new environment and the implications for children in the school and the neighbourhood who may have experienced major life changes such as being refugees. They also consider the diversity that immigration brings to a country and reflect on how, for example, their

own tastes in music and clothes and the language they use reflect a rich cultural diversity. Moving somewhere new is linked to moving on to secondary school.

This leads into a unit of work on biography and autobiography. The children research their own family backgrounds and write autobiographies, focusing on the different elements that have shaped their lives and made them the people they are.

As a conclusion to the units, the children think back to the work they have undertaken in making the individual panels that make up the class banner. Each child in the class is represented there. As individuals they are the sum of their family history, background, upbringing and early experiences that they have researched and written about.

They refer back to the *Windrush* research and consider that when people move they have to make many changes but they like to do some things the way they did before (e.g. religion and tastes in food, music and clothes).

Each child is then given three pieces of ribbon to represent their past, present and future. On the ribbon representing their past they write words about their family background, heritage and ancestral culture. On the ribbon representing their present they do the same thing for their current situation. This may include their family position, aspects of their culture, hobbies, or anything they feel is relevant to themselves. The 'future' ribbon can contain things in the known future such as a new school, hopes and aspirations, and perhaps question marks for the unknown.

The three ribbons are plaited together – the information on them is kept secret – and are labelled with the child's name or personal symbol. When the school year ends and the children are to go to their secondary schools, the class banner is unpicked and each child carries with them to their new school the life braid and panel which represent who they are.



Objectives

PSHE

- To explore the complex feelings associated with change (1d).
- To recognise their worth as individuals by identifying positive things about themselves and their achievements (1b).
- To build a sense of belonging to a group.

Art and design

- To explore ideas and collect visual information (1c).
- To combine and organise visual qualities to suit intentions (2a).
- To communicate ideas and feelings, and design and make images (2c).

Account of the session

Lesson 1

Resources: Internet access, Adinkra fabric

The children were introduced to the idea of Adinkra symbols (traditional symbols from Ghana, printed on cloth). The symbols represent aspects of a person's personality or position. The children used the Internet to research the symbols and their meanings and how they are printed by searching for 'Adinkra'. They recorded examples in their sketchbooks. Samples of Adinkra cloth were available in the classroom.

The children also researched other symbols used in other societies including our own. They discussed how the symbols were used to create pattern.

Collect visual and other information

Lesson 2 (seen on the video)

Resources: oil pastels

After recapping what they knew about symbols and Adinkra design, the children were asked to think about themselves, their skills, personality and interests. In pairs they discussed positive comments about themselves written by other children in the class. The children worked with a talk partner to discuss what others thought about them and whether they agreed. This work on building self-esteem and self-awareness was particularly supportive of one child with special educational needs who requires help to work with others. They then told each other the three things they thought were the most important about themselves and identified an animal they thought represented them.

Self-awareness

Use a variety of methods to communicate feelings

Use a range of materials and processes

Self-awareness

Combine and organise visual qualities to suit intentions

Compare ideas and methods ... and say what they think and feel about them

The teacher explained that they were going to design a panel representing themselves, using symbols, and explained that these would become part of a banner representing the whole class. The children tried out some ideas using ones from their sketchbooks, combining these in different ways until they were satisfied with the design. They then developed these into an A3 design, concentrating on shape and colour and using oil pastels.

At the end of the session children explained their designs to others, identifying what the symbols meant and how they communicated their personality. The class were encouraged to peer-evaluate the designs.

Over the following few days, children used their designs as the inspiration for making a batik panel. Two children at a time worked on their batik.

When all the panels were finished they were joined together to make a banner which represented the class. The children discussed what characteristics, skills and interests were represented in the panels and therefore in the class. When the

banner is unpicked at the end of the year, the children recognise the symbolic nature of the act and the powerful metaphor of both individual and collective strength that the artwork represents.



Outdoor education, PSHE, PE, geography, history, science

**St Mary and St Benedict Catholic Primary School,
Coventry, Years 5 and 6**

Plas Dôl y Moch Outdoor Education Centre, North Wales

**Earthwatch: learning and teaching in the
outdoors** *(video clip 6)*



School and outdoor education centre contexts

St Mary and St Benedict Catholic Primary School in Coventry is a new school recently created from the amalgamation of two neighbouring Catholic primary schools. It serves a diverse inner-city community of largely social housing, with high levels of social deprivation. There are 282 children on the school roll, including a nursery attended by 30 children. There is a high level of child mobility. Of the children 40% are of ethnic minority heritage and most of these are learning English as an additional language (19 different languages are spoken at the school), 35% have special educational needs

and 52% are entitled to free school meals.

Plas Dôl y Moch Outdoor Education Centre is located within the Snowdonia National Park. The centre is housed in a large seventeenth-century house with extensive grounds, which include a woodland and a lake for kayaking. The coast is approximately ten miles away. The centre was established in 1966 by Coventry City Council and since then has remained part of the education department. Fully qualified teachers, all of whom have specific qualifications in outdoor pursuits as well as in a curriculum or subject area, staff the centre. There is also a comprehensive level of support staffing.

During their five-day stay, children are placed into one of five activity groups and one of eight 'duty' groups, which undertake a range of domestic responsibilities around the centre on a daily basis. One group takes responsibility for the taking and recording of daily weather records and for providing a forecast. These are often exchanged with the 'base' school in Coventry.

The weather

Reporting and recording the local weather

Records	Day one	Day two	Day three
Temperature	16°	14°	16°
Rainfall	0 mm	2 mm	0 mm
Cloud cover	Partial cover	Partial cover	Very little cloud
Wind direction	North easterly	North easterly	North easterly

Day one forecast Cloudy with sunny spells	Actual weather Cloudy and windy with sunny spells
Day two forecast Light showers with moderate winds	Actual weather Cloudy with light showers
Day three forecast Bright and sunny	Actual weather Warm and mainly sunny



The centre (see www.dolymoch.freeserve.co.uk) is committed to an integrated approach to learning in the outdoors. Most programmes for primary schools involve a balance between environmentally based curriculum studies and adventure activities. The residential context is used as a vehicle for personal and social development, together with pupil involvement in setting and reviewing targets, as part of a process of keeping a record of achievement. The centre actively encourages schools to relate the objectives and content of their course to the school curriculum and to plan programmes which form an extension to ongoing classroom learning.



Overview of the whole unit

This case study focuses on a five-day stay at the centre during March 2004 by 50 children from Years 5 and 6. Reference is also made to the preparatory and follow-up work done by the children and the parallel 'alternative experience' planned for their peers who were unable to participate in the visit. These principles are promoted by the centre in its statement of core aims.

The school plans this annual outdoor education experience (together with the alternative experience) into its whole-school curriculum map for Years 5 and 6. Links are made to all areas of the curriculum but the main areas of focus for this unit are PSHE, PE, geography, history and science. The outdoor education centre works with schools to plan a course which will meet both the particular curriculum aims of the school and the core objectives of the centre. The school and centre staff plan the course together. It is reviewed through a number of routes, including the setting and reviewing of course targets, the carefully planned parallel experience and follow-up work at school. These are designed to enable children to compare their similar experiences in contrasting localities.

The course programme and alternative programme for those children who remained at school can be seen on the *Learning and teaching in the primary years* CD-ROM.

Objectives

- To recognise their worth as individuals by identifying positive things about themselves and their achievements (PSHE and citizenship 1b).
- To recognise, name and deal with their feelings in a positive way (PSHE and citizenship 1c).



Account of the session (PSHE)

Prior to and following each day's activities, the children participated in teacher-led sessions which focused on their course targets. These sessions involved both the visiting school staff and centre-based staff. The targets had been agreed between the centre and the school and discussed with children prior to the visit. The children were provided with an individual logbook, within which they could record a range of information about their experiences.

Self-awareness

Name and deal with their feelings in a positive way

Managing feelings

Self-awareness

Motivation

Social skills

Identifying positive things about themselves and their achievements

During preparation for a day of adventure activities (climbing, abseiling and kayaking) children were encouraged to share and discuss their personal feelings, expectations and concerns about the challenges ahead. Their teacher reminded them about the discussion they had already had at school about aspects that they were concerned about and their visits to the Dôl y Moch website to learn more about the activities. The centre teacher reassured them by referring to the frequently shared apprehensions about heights, by beginning a process of raising aspirations about overcoming fears and meeting challenges, and by creating an atmosphere of mutual support. A discussion about personal and protective clothing needed for the activity (and the challenging weather!) concluded the session.

This process of open communication, explicit sharing of individual feelings and carefully structured discussion enabled the children to manage any feelings of apprehension, to understand the need to support each other and to feel a sense of positive motivation about the challenges ahead. During the evening review session, the children's teacher briefly encouraged the children to recap on the day's events and revisited the targets. The children were reminded that the process of reflection and review involves the giving and receiving of feedback, which may be critical as well as positive, but that this should not be seen as personal.

Working with a talk partner, the children were asked to reflect on the day in the light of the targets and their individual responses. Their teacher listened to the discussion, making a note of any useful points to feed into later whole-group discussion. The children were then asked to individually 'grade' themselves in terms of their own performance against each of the relevant targets. The teacher supported group discussion about some of these individual grades, encouraging children to share these and to give feedback as to whether the actual events of the session supported the grades. Children gave some detailed feedback about interactions and acts of mutual support, which were used in some cases to form a group consensus about a more appropriate grade, as well as supporting an increase in self-awareness for the individual concerned.

The session concluded with a further teacher-led discussion focusing on:

- What have we learned?
- How have we learned it?
- How could we apply this learning in other situations?

Evaluation

Objectives

- To recognise their worth as individuals by identifying positive things about themselves and their achievements ... (PSHE and citizenship 1b).
- To recognise, name and deal with their feelings in a positive way (PSHE and citizenship 1c).
- To take part in outdoor activity challenges (PE 11a).
- To work with others to meet the challenge (PE 11c).

Account of the session (PE and PSHE: climbing and abseiling)

As a group of children assembled at the centre's indoor climbing wall, the session started with a group discussion about rules for safety and a reminder that different rules apply to different situations. After demonstration by the Dôl y Moch teacher, children worked in buddy pairs to fit their helmets and harnesses, with the teacher checking these individually. The children, still in their pairs, then worked on traversing the lower levels of the climbing wall. This involved much partner talk, giving instructions, asking and answering questions and giving and receiving encouragement, all of which gradually helped to build confidence and motivation for the next stage.

The children were then organised into two climbing teams, within which they would, in turn, undertake different roles: climber, belayer, anchor person and supervisor. These roles, together with the way of working as a team, were first demonstrated by the teacher, who constantly emphasised the responsibility associated with each role and the need to keep focused. Finally the teams were reminded of the need to give the climbers lots of support.

As each individual attempted the climb to the top of the wall, the children shouted encouragement. The supportive atmosphere significantly contributed to an overall feeling of aspiration and

Deal with their feelings in a positive way

Deal with their feelings in a positive way

Social skills



Motivation

overcoming apprehension, enabling even the most reluctant to succeed and share a loud and enthusiastic celebration of their success. This provided a high level of motivation for the further challenge to follow – abseiling from the local crags.

Take part in outdoor activity challenges

During the journey to the mountain environment, the teachers drew attention to the changing landscape, to the children's achievements on the climbing wall and to the challenges ahead. On arrival, the children were involved in a discussion about the rules for safety in this very different situation. As the children awaited their individual turns, their teacher supported the group in managing any feelings of apprehension by

encouraging focused discussion, reminding them of achievements to date and involving them in shouting encouragement to any of their peers who were finding the abseiling experience a particular challenge. The Dôl y Moch teacher ensured that individual equipment was safe and supported individuals as necessary by talking them through their fears and the techniques they needed to use. This, combined with the support of the group and the encouraging presence of their teacher below, ensured that even the most apprehensive child succeeded – and fully celebrated that success.

Managing feelings

Objectives

- How locally occurring animals and plants can be identified and assigned to groups (Sc2, 4b).
- How animals and plants ... are suited to their environment (Sc2, 5c).

Account of the session (science and PSHE: rock pool scavenger)

Enquiry

The children had prepared for this session both at school and in the preparatory part of the daily 'Plan, do, review' sessions by discussing any previous experiences of the 'seaside'. They had visited the Criccieth website and speculated about what the beach and its wildlife might be like. They had begun to make predictions about how seashore creatures might be adapted to their environment, using a recent experience of pond dipping.

In preparation, the children had shared the science objectives for both the seashore-based and the evening laboratory-based sessions. These focused on investigation of the variety of animals and plants that live in the rock pool habitat, considering the features of this habitat and its broader and ever-changing environment and noting how these animals and plants are interdependent and adapted. The seashore-based activities also related to the course targets and to the specific challenges presented by the extremely bad weather on the day.

On arrival on the very wet and windy seashore, the children were briefed on rules for safe conduct, as well as on how to collect creatures from the rock pools without damaging them or their habitat and on the correct use of equipment. The children worked in buddy pairs to scavenge the beach, using the shared bucket and nets provided. These samples were brought back to a central point and the children asked to independently sort their collection into four large water-filled bowls labelled 'seaweed', 'crabs and prawns', 'shells and starfish' and 'other creatures'. This process involved much discussion about identification and how to classify.

The whole group participated in an active, hands-on session designed to discuss their decisions about classification and to focus on features of adaptation and exploration of the interdependent relationships among the creatures and plant life.

The children carefully handled and closely observed the shore crabs they had collected. The teacher helped them to notice the crabs' five pairs of limbs, to describe how these are different and to speculate as to why they are different. The children then observed a crab running across the shore, burying itself in a bucket of wet sand and responding to a pencil placed in front of its nippers.

Amid much enthusiasm and excitement (and calls for a repeat performance) the children were able to immediately recognise the adaptations for movement, protection and feeding.

Some of the samples collected were transported (in seawater tanks) back to the centre for use in the evening review session. During this session, the children were involved in a review and discussion of how their activities and performance related to the course targets. They also undertook some further investigations. These involved considering the key features of bladderwrack seaweed (including bladder-popping to

Identifying and assigning animals and plants to groups

Reasoning



Reasoning

How animals are suited to their environment

Evaluation

discover they were air-filled), experimentation to identify the 'hidden' chlorophyll and observing the protective behaviour of periwinkles when threatened by a potential predator. Use of magnification equipment engaged the children in further detailed discussion of specific adaptations – such as observing the feeding mechanism of a barnacle under the microscope. Biological keys were used to identify shells. The children then designed their own seashore creature which demonstrated suitable adaptations to meet specified conditions. Finally, the children were reminded of the need to return their samples safely to the seashore.



Enquiry

Account of the session (geography, history and PSHE: town studies in Criccieth and Kenilworth)

Objectives

- To identify and describe what places are like (geography: knowledge and understanding of places 3a).
- To describe and explain how and why places are similar to and different from other places in the same country (geography: knowledge and understanding of places 3g).
- Investigating how the locality was affected by a significant national or local event or development – the building of a castle (history: breadth of study 7).

Enquiry

The children had prepared for this activity both at school and during their daily 'Plan, do, review' sessions. They had visited the websites for Criccieth and Kenilworth and speculated as to what it might be like to live and work in these towns or to visit them as a tourist – and also how

Describe how and why places are similar and different

the settlements had changed over time. They had discussed similarities and differences (both have ancient and partially ruined castles and both castles were painted by Turner – an exciting discovery not predicted by their teachers), as well as information gleaned from old postcards and interviews with adults who were familiar with one of the towns about how it had changed over time. Maps of varying scale had been used to locate the settings of each town and children had discussed their likely relationship to other places – both local and more distant. The children had also planned the journeys to both locations.

Investigating an aspect of the local area

During their visits to Criccieth and Kenilworth, the children visited both the castles and the town centres. The children used photographs to locate and speculate about some of the key features of fortification and daily life in the castles. They were also engaged in role-play activities which required them to empathise with some of the roles and responsibilities of the inhabitants and the challenges of their environment.

Empathy

During the town study fieldwork, the children undertook a survey of shops, goods and services along the two high streets. This was undertaken in pairs, with the children using prepared data sheets to record their observations under listed categories – some observations required considerable discussion prior to categorisation. Their teachers supported the process using prompt questions (e.g. 'Do you think that this shop is catering for people who live here or for visitors?'). What evidence does this give us that Criccieth is a thriving town?').

Enquiry

Identify and describe what places are like

In the immediate follow-up review sessions, the children discussed their initial findings and looked for patterns, aware that these were to be the subject of some detailed feedback to, and exchange with, their peers back at school. In the Dôl y Moch discussion, much attention was given to the challenge of undertaking this study in very adverse weather conditions – the children found they could easily relate this challenge to the course targets. The children agreed that they had learned much about persevering with a task even when you are feeling uncomfortable and distracted by the conditions, and it was very evident that they shared a huge sense of achievement in managing to learn so much about Criccieth at the same time as coping with the extremely challenging weather.

Motivation

Geography – follow-up sessions at school

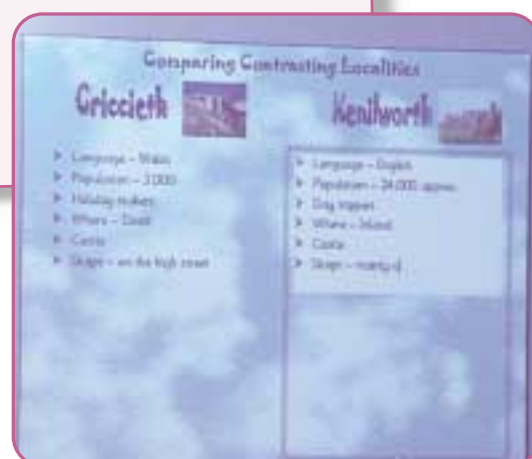
In a series of follow-up sessions at school, the children used the data they had collected to report their findings to their peers, to make comparisons and to draw conclusions. Excitement was palpable as they began to discover similarities as well as differences. The children worked in mixed groups (Criccieth and Kenilworth) in order to study the data and draw conclusions using key questions provided by their teachers.

The use of geographical knowledge and vocabulary, together with the first-hand experience from their visits, provided the children with a powerful range of evidence from which to draw conclusions. They were also able to experience the value of offering informed opinion as they debated the features of the two settlements – including the shopping opportunities.

Plenary sessions involved the children in using ICT to compile their comparative findings in a manner designed to provide clear patterns of similarity and difference.

Describe how and why places are similar and different

Reasoning



Physical education, music

Highlands Primary School, Hull, Years 3 and 4

A small extract from these two lessons (physical education and music) can be seen on 'Key aspects of learning in PE and music' (video clip 7). This shows the same teacher and class during the two lessons. The focus is on how key aspects of learning are developed in both lessons rather than on the subject-specific skills, but the subject-specific skills are identified in the written materials.

School context

Highlands Primary School is a large city primary school which serves an estate of social housing. There is significant social and economic deprivation in the area. Of the children, 37% have identified special educational needs, 49% are eligible for free school meals and the mobility of children in and out of the school is well above the national average. The children are all from white European backgrounds and all speak English as their first language.

The school had been working on developing key skills from the National Curriculum across the whole curriculum. In the PE lesson the objectives were about developing specific PE skills, as well as how well the group worked together (**social skills and communication**) and whether they could solve a challenge cooperatively (**reasoning and problem-solving skills**). The same key skills were being developed in music (see the second part of this case study).

Objectives

- To choose and apply strategies and skills to meet the requirements of a task or challenge (PE2a).
- To describe and evaluate their own and others' performances, and identify areas that need improving (PE3a, b).
- To learn from watching others and use what they have seen to improve their own performance (PE3a, b).
- To use the repeated challenge to develop and change the approaches that they use (PE3b).
- Communication – speaking and listening, working as part of a group.
- Working with others – contributing to small-group and whole-class discussion, working with others to meet a challenge.
- Improving own learning and performance – reflecting on performance and re-evaluating what to do.
- Problem solving – developing skills and strategies to solve problems, planning ways to solve a problem, modifying and reviewing the progress made.
- Reasoning – giving reasons for their opinions, drawing inferences and making deductions, using precise language to explain what they think.
- Evaluation – evaluating the effectiveness of their strategy.

Prepare appropriately for activity

Account of the PE lesson – a repeat challenge

After the objectives had been introduced, the children warmed up by getting into groups of a given size when the teacher called out the command. The children had been working on moving into a group with whoever is nearest rather than looking for friends. When they have formed a group they must all link hands to show they are ready. This is a strategy to encourage the children to work with and make contact with anyone in the class.

Social skills

After warming up, the children were introduced to the challenge – moving themselves and a set amount of equipment across the hall (marked by a mat as the starting point and a bench as the opposite 'bank'). The items of equipment could be used as 'stepping stones' to allow the crossing to be made, but the children could not touch the floor. The children were given the opportunity to talk together and reason about the best tactics to try first. Given the limited amount of equipment, this involved working out that they would need to pass the equipment forwards so it could be reused. They then carried out the task. One member of the case study class is a boy with a physical disability. He has a teaching assistant to support him during PE. He participates fully in all lessons. The children readily include him in their teams, accommodating his different pace.

Choose and apply strategies

Problem solving

After the first attempt the children reviewed how effective their ideas had been and amended them if necessary, before repeating the task. Next they were given the opportunity to decide which piece of equipment to substitute before making another attempt.

Reasoning

They discussed this and gave reasons for their decisions regarding substitution. After swapping equipment, they made a final attempt at the challenge. At the end of the lesson they evaluated their strategies – what worked and what did not, what they found easy and hard, what they would change if they did it again, how the groups could have worked better. The teacher reminded them of the 'bigger picture' – how the ability to work collaboratively in groups, to problem solve and reason together can help them in other areas of the curriculum as well as PE.

Evaluation

Teacher's lesson plan

Highlands Primary School Short-term planning document	Class/Year: 3/4	Subject: Physical education Target NC level – 3
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Introduction

No resources needed for warm-up activity.

- Introduce lesson objectives and explain that in this session they will be working together in groups to solve a problem. The emphasis of their work will be on how well the group works together (communication and reasoning) and whether they can solve the problem or challenge cooperatively (reasoning and problem-solving skills) and how they use their PE skills to undertake the challenge.
- Recap why we warm up prior to physical activity.

Warm-up: getting into groups of ...

- Explain they will need to respond quickly to instructions about the number of people in each group, e.g. 3, 4, 5 ...
- Children to run around in the space and then get into appropriate-sized groups as quickly as possible on my command. Link arms (as in cooperative learning) to indicate to me that the group has the right number of pupils. Repeat using different numbers each time. Evaluate with them how well they are doing and what some children may need to do to complete the task more efficiently.

Extend: sorting and ordering within their groups...

- This time children still need to get into groups of a certain number, and now they will need to work cooperatively to order themselves, e.g. by height, birthday month.

Main activity: problem solving, physical challenge

Children to remain in the groups created in the warm-up (4 groups, 6 pupils per group).

Resources per group: benches/mats set out to indicate beginning and end of course, hoops, small mats, tennis bats, stepping stones, beanbags, skipping ropes.

- Explain that in this part of the session they will be working in groups and will need to work collaboratively to solve a physical challenge.
- Introduce activity – each group will have a set amount of equipment that they need to move from one point of the hall to the other without touching the floor, just using the equipment to help them. Some equipment will be more useful than others in getting across. Explain that in this activity they will need to work together in their groups to come up with a strategy for moving the equipment and themselves from A to B. Give groups the opportunity to talk together about the best tactic to try first. Which equipment will they carry? Which equipment will they use to help them cross the floor?

- Children carry out the activity – limited time.
- Bring them together and review how effective their ideas were. Watch / listen to an effective group if possible. Discuss strategies that did and did not work. Give children the opportunity to re-evaluate their strategy and consider how the task could be completed more quickly or more efficiently.

Repeat the task

- Children to put into effect the new strategies they have watched and discussed.

Review: evaluating performance

- Bring children together and discuss the task. Review strategies – What worked and what did not? What did they find easy/hard? What would they change if they did it again? How could the groups have worked better?
- Paint the bigger picture – about how the ability to work in groups and collaborate together can help them in other areas.

Formative assessment to inform future planning

- Note whether they form groups readily with all members of the class.
- Listen in to conversations to assess quality of reasoning.
- Identify those children who show improved performance and those who need further work on thinking about a challenge before launching into it.



The same teacher and class were also developing key skills in other lessons.

Objectives

- To be able to use instruments to create a variety of sounds (M3a).
- To understand that music and pictures can describe images and moods (M3b).
- To begin to relate sounds to visual images (M3b).
- To select appropriate instruments to illustrate mood and emotion through music (M2b, 3b).
- Communication – speaking and listening, working as part of a group.
- Improving own learning and performance – reflecting on performance and re-evaluating what to do.
- Reasoning – giving reasons for their opinions, drawing inferences and making deductions, using precise language to explain what they think.
- Evaluation – evaluating the effectiveness of their strategy.

Empathy

Account of the music lesson – creating a group composition

In previous sessions children had listened to music that created images in their minds. They had linked specific sounds they heard in the music to specific images (e.g. skeletons dancing), discussed the instruments used to create these sounds and experimented with creating their own representation of specific sounds, using musical instruments.

At the start of this session they discussed a picture of a playground, first for the sounds they would hear but then for the emotions these sounds conveyed. For example, did children shouting mean they were excited or angry or scared?

Working in pairs and then snowballing into fours, they discussed which emotion they wanted to communicate and which instruments would be effective in creating the mood they had identified. They fed back these discussions to the class and justified their choices (e.g. 'I think the xylophone played softly and steadily could be good to suggest two best friends happy together because it's very calm').

In small groups, children agreed on an instrument to suggest the emotion they had chosen and then experimented with achieving the sound they wanted (they were becoming 'experts' on their sound so that in the following session they could jigsaw with other members of the class).



Communication

Music and pictures can describe images and moods

Select appropriate instrument

After listening to the individual sounds, the class then discussed how these could be combined to build up the texture of the composition. They were asked whether, for example, someone would be angry for the whole time or whether the anger would increase to a climax and then fade. They considered which emotions – and thus which sounds – would be heard a lot, either intermittently or continually throughout. Each group then recorded this graphically on a small whiteboard, using a symbol to represent their emotion or sound. They rehearsed playing, guided by their graphic score.

The teacher combined the individual scores into a class score by drawing each line on the large whiteboard. The children then performed their joint piece, coming in and out with their sound as the teacher moved a stick across the score. They rehearsed this activity and then reflected on how effective they had been in communicating the mood of the playground in their joint composition.

Combine and
organise
musical ideas
within
musical
structures

Evaluation

Teacher's lesson plan

Highlands Primary School
Short-term planning document

Class/Year:
3/4

Painting with sound (exploring
sound colours), QCA unit 13

Introduction

- Explain that in this session they will be using their knowledge of musical instruments, and the sounds that they can make, to work within a group to produce a class score.

Main activity: How can music describe images and moods?

- Remind them that in this unit we are looking at how music and pictures can describe images and moods (previous session – listening to music that creates images in our minds).
- Show a picture of a playground on the interactive whiteboard.
- Discuss the sounds further to add in descriptive words and phrases.

Development: using instruments to create a picture in sound

- Ask them to discuss in pairs which instruments would effectively match the mood and subject of the part of the picture they have discussed.
- Ask pairs to snowball into fours and swap ideas about which instruments could be used to create specific sounds from the playground.
- Feed back ideas.

- Encourage them to remember what the instruments mentioned sound like (internalisation) and encourage them to justify their choices (e.g. 'I think the drums played softly could be good to make the sound of someone feeling a bit miserable because ...').
- Split into small groups and ask each group to choose one of the moods from the playground.
- In small groups children to experiment and choose an instrument to suggest the mood they have chosen (they will become 'experts' on their sound so that in the following session they can jigsaw with other members of the class). Encourage them to discuss instruments. Can they adapt the way of playing the instrument to make it even more effective?

Review

- Bring them back together and listen to the instrument(s) that they've chosen to represent the sound. Can it be improved?

Exploring combining the sounds to create texture

- Discuss with children how the sounds could be combined to build up the texture of the composition. Which sounds would be heard a lot? Intermittently? Throughout?
- Children to decide this about their sound within the composition and create a graphic score for this.
- Combine group scores on the whiteboard to make a class score.
- Experiment with performing using the score.

Plenary

- Discuss the effectiveness of the composition.
- Explain how in the following session they will be creating group compositions based on a different picture.

Formative assessment to inform future planning

- Note whether they form groups readily with all members of the class.
- Listen in to conversations to assess quality of reasoning.
- Listen to / watch use of instruments.
- Identify those children who show improved performance.



Museum education, art and design, ICT

Hazeldene Lower School, Bedford, Year 2 Bedford Museum and Cecil Higgins Art Gallery

Mother Nature: designer *(video clip 8)*



School context

Hazeldene Lower School is a large lower school with 450 children. It has a three-class intake, Foundation Stage to Year 4. It is situated in a suburb of owner-occupied housing. In Year 2 there are 87 pupils: 43 boys and 44 girls. One of the children has a full statement of special educational needs.

Objectives

- To record from first-hand observation (AD1a).
- To collect visual and other information to help them develop their ideas (AD1c).
- To design and make images and artefacts (AD2c).
- To develop and refine ideas ... reorganising images as appropriate (ICT2a).
- To describe and talk about the effectiveness of their work with ICT (ICT4b).

Overview of the whole unit

The long unit of work described in this case study is based on the QCA scheme of work in art: 'Mother Nature: designer'. The unit is divided into several linked sections which are used flexibly according to the needs of individual classes. The video shows several possible developments arising from preliminary work on line and shade and a visit to the local museum. The school's aim across this long unit of work is to support the development of individual skills

and artistic expression by encouraging children to use observation and by developing their initial ideas into finished outcomes. The use of technical artistic language is encouraged via group and individual discussion. The school has worked closely with the Museum and Gallery Education Service of Bedford Museum and the Cecil Higgins Art Gallery and has been involved in helping them develop an on-site programme and web-based resources to support schools using the Mother Nature theme.

Collect visual and other information

Account of the sessions

Information processing

Prior to the visit to the museum, the children first explored the use of line and shading to create texture and form. Over several lessons they experimented with a range of drawing tools and used mark-making to create forms. To help them see how artists use line and shade to create texture and form, they accessed prints from the Cecil Higgins Art Gallery collection website via the Internet. They discussed the different ways artists had used line. This preliminary exploratory work was then followed by a visit to Bedford Museum and the Cecil Higgins Art Gallery. Teachers from the school decide whether they will concentrate on design in nature and the use of line and shade leading to collages and textile work or whether they will focus on the use of repeat pattern. The museum staff and the school hold a preliminary meeting to focus the visit on the needs of the school.

Record from first-hand information

In the museum's education room the children examined and drew natural objects – including stuffed animals and birds, shells and sea creatures – paying particular attention to line and shading to convey form, pattern and texture. The children were encouraged to look closely at details. They recalled the preliminary mark-making experiments and the work of the artists they had examined via the museum's website in order to consider how different effects could be achieved.

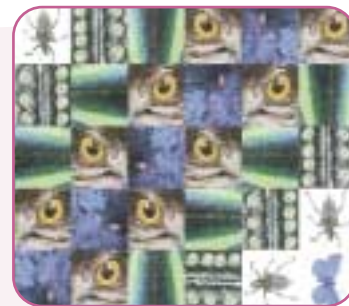
Motivation

They then visited Victorian room 'sets' in the gallery, where the education officer guided them to look carefully at how designers and craftspeople had used line and forms taken from nature in creating the decorations and designs of furniture and domestic objects. Attention was drawn to the use of repeat pattern. They also explored how nature had influenced the design of china and glass objects in the decorative arts gallery, particularly how the form of natural objects had been used. In each gallery the children were encouraged to personally select an object to study and draw. They were absorbed by the task and motivated to take great care over their drawings. The drawings the children made during this visit became the preliminary sketches for further work back at school.

Enquiry

video case studies





Select ideas
to use in their
work

Back at school the children selected the drawings they wished to develop. In one unit of work they went on to consider line and shade in more detail and translated their line drawings into textile interpretations. This resulted in a textile banner.

In another 'route' they focused on the detail of a natural object (having been encouraged to look in this way at the museum) and on creating pattern via repeated images of this detail. The first step in this was working on repeat pattern using details of objects they had encountered at the museum (the eye of the owl, the stripes of a seashell and so on). They did this using computers and the museum website (see below). Having developed their understanding of repeat patterning, they selected a detail from their drawings to create a repeat pattern using block printing. Some children went on to use these as the basis for creating a calendar.

Cross-curriculum links: ICT

The school is one of a network of schools supporting the Bedford Museum and Cecil Higgins Art Gallery as it develops its website. This project has involved teachers from Years 1, 2 and 4 working closely with the project web designer, sharing mutual planning aims and desired learning outcomes. Within this unit of work the use of ICT was integrated into the work to enhance children's understanding of repeat pattern and observation of detail. The use of the learning activities on the gallery website, following the visit, introduced children to new ICT skills (using the flip and rotation tools) and supported their creation of repeat patterns. Using the Internet, they accessed the linked program on the museum website (see the Bedford Bytes website: http://www.museumeducation.bedford.gov.uk/bedfordbytes/nature/making_pattern_s.htm).

Social skills

Working in pairs, the children used this program to develop and explore patterns from nature, seeing how they could create repeat designs using the skills of dragging and dropping and tools that enabled them to flip and rotate the images. The children were encouraged to talk about what they had learned about repeat patterns. Discussion at the computer gave a purposeful context for the children to use technical language such as 'symmetry'. The use of ICT gave the children the opportunity to experiment and produce alternatives. They could also use the 'undo' button to make changes without fear of making mistakes.

Develop and
refine ideas

Describe and
talk about
effectiveness
of their work

The school's lesson plans, showing a series of one-hour lessons, can be found on the *Learning and teaching in the primary years* CD-ROM. The school uses these plans flexibly to block the work to suit individual class timetables.

Evaluation

Section 2 Additional case studies

The case studies in this section are not accompanied by video clips but, taken with the case studies in section 1, they offer case studies across the range of the primary curriculum and across year groups.

Modern foreign languages: French

Wicklewood School, Norfolk, Year 2

Heads, shoulders, knees and toes

School context

Wicklewood is a rural primary school identified as having an affiliated nursery. It has 155 children on roll. The children come from the catchment village and from the local market town. There are few children from diverse ethnic backgrounds in the school and free school meals are below 10%. The school has strong European links. The Year 2 class has 26 pupils including one Year 3 child with special educational needs. These pupils are in their second year of learning French.

Overview of early MFL language learning

This school has a strong commitment to the international dimension and is currently coordinating its second Comenius (European) project. The school has twice achieved the International School Award (British Council) through the strength of the Comenius links and its active approach to the international dimension in all curriculum areas. The school has hosted a Comenius student and links are currently being developed with a primary school in the *rectorat* (education authority) of Toulouse, which has strong and growing links to Norfolk. MFL is taught throughout the school, from Reception to Year 6.

The foreign languages offered are currently French, Reception to Year 2; German, Year 3; and Italian, Years 4, 5 and 6. Latin is also

offered as an after-school club. The Year 5 and 6 teachers are language specialists who visit other classes, releasing Key Stage 2 staff for other teaching. Key Stage 1 staff, however, remain in the classroom with the specialist teacher so that learning can be reinforced throughout the week.



In Key Stage 1, the skills focus is on listening and responding, together with group reading using big books. All classes take the register and dinner requests in French and use French for basic classroom instructions throughout the week. Language is taught using a multi-sensory approach to appeal to a variety of learning styles and makes use of finger rhymes, songs, mimes, stories, dances and group games to reinforce the new language. When appropriate, links are made with different cultures.

In Key Stage 2, a similar approach is used as new languages are acquired. Links are actively made with English and with previous language learning. In Key Stage 2 CD-ROMs are also used to reinforce language learning and cultural links, and to extend reading skills. A Key Stage 2 MFL case study is to be found on the *Learning and teaching in the primary years* CD-ROM.

Overview of Key Stage 1

In Key Stage 1 children study a simplified version of several units in the QCA programme, chosen for their intrinsic interest to young children and broadly covering the topics 'C'est moi!', 'Ma famille', 'Mes animaux', 'Mon corps', 'Mes vêtements' and 'Je mange!'

Resources used include puppets and soft toys; realia from the classroom such as large dice, clocks and whiteboards; a wide selection of big books; *La Jolie Ronde* materials for Key Stage 1 learners; and a variety of audio-cassettes and websites, used particularly for songs.

In Reception and Year 1 children learn greetings, basic numbers, colours and main family members and animals, using translations of *We're going on a bear hunt*,* *The three bears*, *The enormous turnip* and other animal or family-based books.

Year 2 revises the above and covers food, body parts and clothes.

The medium-term plan for Year 2 for the spring term is to be found on the *Learning and teaching in the primary years* CD-ROM.

* Helen Oxenbury and Michael Rosen, *We're going on a bear hunt*, Atheneum.

Objectives

- To understand, respond to and use previously learned language.
- To communicate with each other in the foreign language in pairs, in groups and with their teacher.
- To understand and respond to more words for parts of the body.
- To work together in pairs or groups.



Account of the 30-minute lesson

Classroom arrangement

The children are seated in a circle with the class teacher and French teacher among them. Throughout the lesson the subject-specific skills are:

- listening, showing understanding through physical responses;
- responding verbally as a group or individually where appropriate;
- group reading.

Warm-up/revision activities

Remind the children that they are going to practise some things they already know and then learn a little more about how to say parts of the body in French – hopefully they will be able to point to the correct parts by the end of the lesson. Begin with finger rhymes such as:

- *Monsieur Pouce es-tu là?*
- *Bonjour papa/maman*

Say formally *Bonjour tout le monde*. All reply *Bonjour Madame*. They say *Bonjour* to the class teacher and to the puppet François.

The children say *Bonjour Anna* etc. (shake hands) or *Salut Sam* (wave at the next person) around the circle to each other.

The children follow the French teacher in the singing action rhyme 1, 2, 3, 4 *frappez dans les mains*, practising following classroom instructions such as *écoutez, répétez, regardez, taisez-vous*.

The children pass a big soft ball to their neighbour, all counting from 1 to 12. Child 12 rolls the ball across the circle for someone else to start.

Revision of parts of the body learned last week: *tête, épaules* etc. (heads, shoulders, knees and toes) by singing the song and doing the actions.

New activity

François whispers to the French teacher – a conversation in French, *Tu veux jouer?* The teacher tells the class he wants to play *François dit*, a version of Simon Says, and explains this in French. Ask in English if they have understood and let a child explain what they have understood.

Play *François dit* using 'heads, shoulders' vocabulary and known classroom vocabulary such as *levez-vous, asseyez-vous, levez le doigt*. Children sit down if they get it wrong.

The puppet can be the guide for children who find the task more difficult. It models that it is safe to have a go even if you get things wrong.

Communication – this aspect of learning runs throughout the lesson

Social skills – taking turns and listening to each other

Understand and respond to previously learned language

Understand and respond to more words for the body

Managing feelings

Motivation – trying to understand so you can stay in the game

Empathy – rolling the ball to someone who hasn't had it

Listening and reasoning – working out from the context and mime what game the puppet wants to play

Motivation – using knowledge of MFL to enjoy a book

Reasoning – how new learning can help the reading and understanding of French words

Second activity

The children gather together on the carpet to read a French big book and see how much they can already understand. Explain that they will come across colour and size words as well as parts of the face. They practise pointing to colours and making themselves small and tall to the words *petit* and *grand*.

Read the big book *Grand monstre vert*. The children chorus words they already know and act out the monster. Point to the face parts with the children and reinforce colour and size words (e.g. *Une grande bouche rouge*).

Repeat the words and phrases, in particular ones with unusual sounds (e.g. *ébouiffé*).

Understanding new and familiar words

Plenary

Praise the children for listening and responding so well.

Check with eight body parts if they can touch them. Explain how they can get team points this week by touching *la tête* etc. and naming it to one of their teachers.

At end of the lesson say *Au revoir*.

If the lesson is at the end of the day, use French instructions to tell the children to get their coats and line up. Give an instruction to each child as they go out of the door (e.g. *Touche le pied*).

Motivation

History

St Stephen's CE Primary School, Bath, Year 2

The Great Fire of London

School context

St Stephen's is a large city Church of England primary school of about 400 children close to the centre of Bath. The number of children entitled to free school meals is below average and 12% of them have identified special educational needs.

Context of the session

The Year 2 class researched information about the Great Fire of London as part of a unit of work in history. They had already learned about when and where the fire took place, discussed why it started and identified the sequence of events. In the session described below they began using pictures and first-hand accounts to extend their understanding. In subsequent sessions they looked at further sources and wrote their own descriptions of the fire in the style of an eyewitness. This was closely linked to work in literacy on story settings and descriptive language.

Objectives

- How to find out about the past from a range of sources of information (4a).
- To recognise ... why events happened and what happened as a result (2a).
- To develop information-processing skills.



Find out about the past

Account of the session

The teacher began by reading diary extracts about the fire. The class highlighted unusual or archaic words and phrases, such as 'Lord's Day Morning', and discussed what they meant and identified key information. The teacher summarised key information that they had located in the text, helping the children to organise it.

They then looked at paintings and pictures of the fire and the teacher asked the children to see whether they could find evidence of the information they had found in the diary texts. She prompted them to look at people's facial expressions and body positions and to think about what this told them about what the people involved may have been thinking and feeling. The children worked in pairs, taking it in turns to speak, listen and report back on what their partner had found out.

They wrote speech bubbles for people in the pictures. These showed the children were drawing on their own experience of being frightened and their ability to incorporate ideas from other sources (e.g. 'Oh Lord, please save us!' and 'Quick, we need to save our possessions').

They moved into groups of four, compared their ideas and then created freeze frames to represent groups of people in the pictures. They concentrated on representing people's reactions to the fire, using their faces and bodies. The class were used to this drama technique and were able to keep still or re-form as needed. They showed their freeze frames to other groups in the class and commented on how each group had conveyed the idea of the fire and people's fear.

At the end of the session, the teacher checked and reinforced children's understanding. The children reviewed the different sources they had used and discussed the way that they had made use of the information in their freeze frames. The children talked about how the pictures had given them an insight into the events, seeing the fear on people's faces and the sense of panic, with crowds running and pushing. The teacher prompted the children to recall their own feelings when in role as people involved in the fire. The rich descriptive language that they suggested was listed for use in subsequent writing sessions (e.g. *scared, terrified, petrified, alone, screaming, shocked, dismayed, horrified, alarmed*).

Information processing – using a range of sources to find out about the past, clarifying understanding by identifying difficult language, locating relevant details, sorting and ordering

Comparing information from different sources

Empathy – teacher prompts encourage children to make inferences about people's feelings

Creative thinking – using imaginative ideas in drama to extend their understanding of people's feelings and actions in the past

Self-awareness

Empathy – teacher prompts encourage children to make inferences about people's feelings

Recognise what happened as a result

Communication – work on descriptive language applied in another area

additional case studies

Art and design

Marlborough Primary School, Cornwall, Year 1

Sea sculptures

School context

Marlborough is an average-sized town primary school of just over 200 children. It serves a local community, with a mixture of social and private housing. The number of children receiving free school meals is lower than the national average and no children in the school speak English as an additional language. It has beacon status for literacy, ICT and early years.

Overview of the session

The Year 1 class worked through a five-week unit in art and design based on the QCA programme of study 1a 'What is sculpture?'. They began by looking at sculptures, examining the materials that were used and particularly looking at the ways some sculptors made use of natural materials. They went to the local beach to find examples of naturally occurring sculptures such as rock formations and they collected materials to use for their own work. (Visits to the beach also offer opportunities for groups to create their own 'land art' and to record this using a digital camera, although on this occasion this was not included.) In the next session, the children were asked to think about their favourite places. They selected materials to make a collage representing their feelings about that place. In the session described below, they worked in groups to make a sculpture to put in a favourite place and in the final session they evaluated their completed work.

Objectives

- To apply tools and techniques to the materials and processes they were using for their sculptures.
- To develop the social skills and evaluation aspects of learning, including being able to review their own work, describing and explaining what they had done and talking about what they might change.

Record from first-hand experiences

Account of the session

In this session, groups of children used materials that they had previously collected to make a sculpture to put in their favourite place. Many had drawn ideas for the sea sculptures they might make using the materials they had collected.

The teacher opened the session by asking the children to consider the materials they had collected from the beach. They looked at examples of the work of the sculptor, Andy Goldsworthy, who uses found natural materials and landscapes to create his artworks in the environment. The teacher then reminded the groups about the sculptures they had planned and emphasised the need for shared agreement within the group.

The children were challenged to think through the steps they would need to take and the problems they might encounter. They focused on the question of how to join the materials they were using and evaluated various methods. The children recognised limitations, for instance that glue sticks would not be strong enough, and they examined other methods for joining things. The teacher went through the safety rules for using equipment such as glue guns. They looked again at an Andy Goldsworthy sculpture to see how he had solved the problem of joining natural materials and discovered that his often simply sit together or are joined by using natural materials.

The groups were also challenged to think about their sculptures. They considered the materials that were available and thought about whether they wanted the sculpture to look like something real or imagined. They referred to the drawings they had done in their sketch books. Each group worked on their sculpture using the box of materials that they had collected from the beach. There were three other adults assisting the teacher and children were able to ask for help when they needed it.

At the end of the session, the class came together to review and evaluate what they had done. They reflected on their successes and shared problems that they had encountered, such as difficulties in joining two 'pointy' surfaces, and problems with scale or when using particular tools. The others suggested solutions and they all thought about what they might adapt or change when they completed their sculptures in the next session.

The role and purpose of artists

Social skills – there was a clear expectation that the children would work closely with others

Problem solving – the teacher highlighted a problem and encouraged children to judge the viability of possible solutions, supporting them in selecting the most appropriate methods and tools for their own sculptures

Investigate the possibilities of a range of materials and processes

Creativity – children had the opportunity to explore and experiment with materials as they used their imaginative ideas

Review what they and others have done and say what they think and feel about it

Evaluation – the criteria for judging success were introduced when children were looking at sculpture earlier in the unit; they were invited to review the progress they had made and consider ways of improving what they had done so far

Music

St Newlyn East Primary School, Cornwall, Reception and Year 1

Low and high notes

School context

St Newlyn East is a small rural primary school of about 130 children. The number of children in the school with statements of special educational needs is higher than the national average. The percentage receiving free school meals is below the national average.

Context of the session

The class was using the QCA scheme of work, unit 5 'Taking off', which encompasses pitch. This session was part of a unit of work to develop listening and aural memory, with a particular focus on understanding pitch and beginning to combine musical elements within simple musical structures.

Objectives

- To understand the concept of pitch and to discriminate between low and high sounds in order to create melodic patterns.
- To listen with concentration and to internalise and recall sounds with increasing aural memory.



Account of the session

The session took place in the hall and began with the children seated in a circle on the floor. The practitioner introduced the word 'pitch' and demonstrated the difference between high and low sounds on the metallophone.

The children played several warm-up games to help them to look and listen carefully. They copied the practitioner's rhythm and body movements, watching out for when these changed, and practised passing a tambourine as quietly as possible. The practitioner used a teddy puppet to sing high and low notes for the children to copy. Individuals had a go at working the puppet, and the others held their arms up or down to indicate whether they heard high or low notes. The children listened attentively as the puppet 'sang'.

The next activity reinforced the idea of pitch. The children did different actions depending on pairs of high and low notes played by the practitioner. For instance, if the notes went from high to low, they stood up and then sat down. If the two notes were the same they put their fingers on their noses. The practitioner modelled the correct action each time and said, 'See if you match me.' Children had the chance to check and correct their own responses.

In the next game, Swampee, the teddy was stranded in the middle of the hall on an imaginary island and the children lined up along one wall. They could only move forwards one step to 'rescue' him when they heard a high note and had to take a step back when they heard a low note.

They returned to the circle and the practitioner introduced pitch cards. The children suggested how they would interpret the different patterns of notes on each one. They worked in groups, using their voices to make the pattern shown on the card they had been given. The groups were supported by the practitioner and teaching assistant.

When they all came back together they reflected on the activity – thumbs up for easy, down for hard and horizontal for OK. They took it in turns to perform their patterns and received positive feedback from the practitioner and other children. The practitioner then demonstrated 'dot cards' with two or three musical notes, which she played on the metallophone. Individuals had the opportunity to try playing simple sequences themselves.

At the end of the session they were all involved in reviewing their learning. Children put their hands on their heads if they could understand the difference between low and high notes and hands on the floor if they were unsure. These children were given some further examples of high and low notes to help them understand. They finished by identifying the beginning of some familiar tunes and then singing a song together.

Motivation – throughout the lesson the games ensured children were engaged

Evaluation – children did not fear being wrong as each could compare their own response with that of the practitioner

Social skills – children collaborated in groups, discussed methods and listened to one another

Evaluation – children had accessible ways to reflect on their own learning

Listen with concentration

Discriminate pitch

Combining musical elements within simple structures

Motivation – praise from the practitioner and other children rewarded their effort and gave them confidence to perform

Foundation Stage areas of learning

Barn Farm Infant School and Nursery, Telford

‘Mamy Wata and the monster’ (traditional African folk tale)

School context

Barn Farm Infant School and Nursery serves a disadvantaged housing estate in an area that ranks among the 10% most deprived wards nationally and among the 5% most deprived wards nationally in terms of child poverty. The nursery is attended by 62 children part time (equivalent to 31 full-time children), over half of whom (58%) are of Pakistani (Mirpuri) heritage and speak English as an additional language. As their first language has no written form, literate adults from this community read and write Urdu. Among the 177 children attending the infant school 37% are of Mirpuri heritage. The majority are at an early stage of learning English. Almost all the other children are of white European heritage. There are 44 children with identified special educational needs, most of them at an early stage of concern regarding potential moderate learning difficulties and emotional and behavioural difficulties; there is one child with a statement of special educational needs.

Overview of the unit of work

During an arts week in the school, the Nursery and Reception classes worked together on a thematic project based on a traditional African folk tale, ‘Mamy Wata and the monster’. This incorporated the six areas of learning for the Foundation Stage. The project has developed cross-curricular links in the Foundation Stage, strengthened links between the Nursery and Reception classes and crossed cultural boundaries in that it has enabled the children to reflect on universal themes such as friendship.



CLL

Account of some sessions

At the start of the week, and throughout it, the children were read (and read for themselves) the story of 'Mamy Wata and the monster'. The story has echoes of the traditional European tale of 'Beauty and the beast'. The monster who terrorises the villagers falls in love with the mermaid Mamy Wata. She sees beyond his ugly exterior and behaviour and befriends him. He is transformed by this love and friendship. In circle time, this story was used to lead discussions about not judging people by their appearance and the power of friendship.

During the week, the Foundation Stage children worked with two artists in residence. One developed African-influenced drumming and dancing skills with the children. The other worked with the children to produce artwork to illustrate or link to the story. This included wall hangings and a large three-dimensional mermaid figure that could be moved on sticks. This was used in the performance that took place at the end of the week. The children also looked at traditional African fabrics and then did their own tie-dyeing.

Through the Internet the children accessed a web camera that was sited by a water hole in an African game park. The images were displayed on the interactive whiteboard throughout the day. This deeply engaged the children, who watched a herd of elephants and later lions and other animals using the water hole. This enabled them to experience, almost first hand, the wildlife in Africa. The children also had access to a range of reference books about Africa. These combined information sources were used to give a rounded picture of Africa as a continent with cities and countryside. The children were motivated to write reports on Africa and descriptions of the animals they could view.

The work culminated in a performance of the story to parents, governors and teachers with a supporting display of books, African artefacts and children's work. The children and staff had the opportunity to work with specialist teachers in their particular subject area. The experience of working alongside artists in residence raised self-esteem among the children and increased expertise among the staff.

As a result of the week many more children are accessing the after-school music club, funded by the New Opportunities Fund, and more parents are attending, with their children, the after-school arts and crafts family learning club.

Social skills

PSED

CD

KUW

Information processing

Communication

Self-awareness

additional case studies



Section 3 Literacy, mathematics and ICT across the curriculum

In the report *The curriculum in successful primary schools* (2002), Ofsted noted:

The teachers were adept at making best use of links between subjects. They recognised that where links are effective they enable pupils to apply the knowledge and skills learned in one subject to others, as well as bringing coherence to learning when complementary aspects of subjects are brought together ... The schools, usually through their subject coordinators, ensured progression within each subject was secure within the long-term planning at each key stage. This thematic work bore no resemblance to the broad ranging topics that were common to primary schools in the past.

Making explicit any strong links between curriculum subjects and areas of learning can deepen children's understanding in a number of ways. It helps them to see the relevance of what they do and provides opportunities to apply, consolidate and enhance learning. It does this by, for example:

- building concepts – meeting the same or related information in different ways adds to the richness of a child's experience and concept building;
- providing opportunities for practising skills – skills taught in one curriculum or learning area (e.g. using tools carefully, skimming and scanning, analysing data) can be developed via purposeful use in other areas;
- assisting memory – opportunities to practise and use information in different contexts is one of the ways memory develops;
- providing opportunities for the application of knowledge – applying knowledge in new contexts involves children in higher-order thinking skills such as reasoning and problem solving;



- providing opportunities for learners to recognise and develop key aspects of learning;
- enhancing motivation by providing rich contexts for learning.

The Foundation Stage curriculum is organised into six areas of learning and the guidance document (page 21) points out the importance of children making real and explicit links in their learning.

The key skills in the National Curriculum include communication, application of number and information technology. Each of these can be developed both as subjects in their own right – English, mathematics and ICT – and also through their use across the whole curriculum. The following case studies give an example of each of these three areas.

Further ICT, mathematics and English cross-curricular case studies

The case studies in sections 1 and 2 also demonstrate the linking of areas of the curriculum and the use of ICT, mathematics and literacy across the curriculum. For example, the 'Mother Nature: designer' case study in section 1 shows the use of ICT to support a unit of work on repeat patterns, using nature as a source of inspiration.

Further good-practice examples on linking literacy and mathematics and other curriculum areas can be found on:

- the QCA website (www.qca.org.uk/ages3-14/) – new materials on schemes of work are available from September 2004, including information and examples on:
 - adapting the schemes
 - combining units from different subjects
 - embedding English and mathematics objectives in foundation subjects;
- the NLS website – a series of case studies from Year 1 to Year 6 showing linked units of work between literacy and science and literacy and foundation subjects is available on: http://www.standards.dfes.gov.uk/literacy/prof_dev/case_studies/403685/403701/;
- the Primary National Strategy ICT CD-ROM – using ICT in learning and teaching is exemplified within nine subjects of the primary curriculum and covers the six years of Key Stages 1 and 2 and the six areas of learning within the Foundation Stage (the introductory CD-ROM can be ordered from Prolog (tel. 0845 60 222 60) quoting reference 0473-2004). The PNS will continue to develop materials to support teachers in embedding the use of ICT to enhance learning and teaching.

Literacy and science

Ryelands Primary School, Hertfordshire, Year 4

Escape from Colditz

School context

Ryelands Primary School is a one-form entry JMI school with resourced provision for children with behavioural, emotional and social difficulties (BESD). Children from the BESD unit are integrated part-time into the mainstream classes with specialist support. The percentage of children eligible for free school meals is broadly in line with the national average, but the percentage with special educational needs is above average. The school caters for children from families of travelling showmen from a large site which is situated nearby. There is a considerable degree of movement of families in and out of the area. On entry to the Reception

class, the overall attainment of most children is generally well below average, including in communication, language and literacy, and in their mathematical and scientific skills and understanding.

The Year 4 class of thirty children includes some with statements for differing educational and behavioural needs. These children all receive varying amounts of support from teaching assistants. The session described was delivered by support teachers from a local curriculum development team at Hertfordshire SETPOINT, in partnership with the class teacher and teaching assistant, as part of the school's programme of developing thinking skills across the curriculum.

Overview of the session

This case study describes one session, using a story taken from an anthology* of stories based on real events that involved working with rocks and soil. The story used in the session gives a fictional account of a real-life escape from Colditz prisoner-of-war camp during the Second World War. The session covered the NLS Year 3 and Year 4 objectives for the unit of work (some objectives were 'backtracked' to support some children's learning needs) and was linked with the work in science on rocks and soils. There was also a history dimension to the session in that the story linked with work on the Second World War and helped children to recognise that stories about the past are important ways to research and think about history.

The school has a successful policy of developing children's confidence by using thinking skills and problem solving:

Because teachers show pupils the value of learning from mistakes, because they listen to every child's response, however tentative, and because no child is ever patronised, set apart or excluded, pupils feel safe, dare to take risks in their learning, and have no apparent fear of failure at school. (Ofsted, 2001)

The school believes that stories of real people and events are an excellent way of helping children to experience difficult issues or ideas. Familiar narrative structures offer children the chance to interact with and think about complex processes and information, within a clear and secure framework. They provide multiple opportunities for rich use of oral and written language.

* Grant Bage and Jane Turner, *Mud and mountains: earthy stories from beneath your feet*, Anglia Young Books.

Objectives

Literacy

- To get to know and understand an unfamiliar story.
- To understand how settings influence events and incidents in stories.
- To make use of adjectives to describe setting effectively.
- To understand the distinction between fact and fiction.
- To identify the dilemmas faced by characters in a story.
- To develop active listening strategies and critical skills of analysis.

Science

- To apply their knowledge of the properties of different rocks and soils to a real life problem (Sc3, 1d).

Key aspects of learning

- Reasoning: to make judgements and decisions informed by reasons or evidence.
- Creative thinking: to generate and extend ideas, to apply imagination, and to look for alternative innovative outcomes.
- Evaluation: to evaluate information, and to develop criteria for judging the value of their own and others' ideas, and to have confidence in their own judgement.
- Problem solving: to apply enquiry skills, prediction, problem solving and evidence reading to an imagined situation.

Account of the session

The session began with two learning activities to activate children's prior knowledge, make links with what they already knew and engage them in the story that was to come. Prompted by questions (e.g. Have you ever visited a castle? What does a castle look like? What is it for? Who lives there? What is it made of? Where is it? What castles do you know from stories? Are they real or imaginary?), the children visualised castles and considered what images the word 'castle' provoked. They recorded some adjectives to describe the images they saw in their minds and then shared some of the varied words they had written.

Next they were given a variety of rock samples and in pairs asked to describe them orally and consider the sort of questions that a scientist might ask about them. The children enjoyed handling the rocks and sharing their knowledge and observations about them. They asked lots of questions based upon their observations (e.g. Why is it smooth? How can it be smooth and rough? What is it used for? Why does dirt keep coming off it? How old is it? Why doesn't it crumble?). This generated queries that could be investigated further in science sessions.

Use powerful adjectives

Apply their knowledge of the properties of rocks

Enquiry

The story 'Escape underground' was then read aloud, with pauses to facilitate discussion of the problems facing prisoners and how to overcome them. The questions used aimed to facilitate higher-order thinking. They included:

Creative thinking

- What would you dig with if you had no spades or forks?
- How could you hide soil in a prison?

Reasoning

- Why couldn't the men use a hammer?
- Why did the men have to hide their muddy clothes?
- How could socks help with getting rid of the soil?

Enquiry

- Why doesn't sand stick together? What could be done to solve this problem?
- What are the dangers of tunnelling?

Information processing

- How much soil would have to be moved?

Evaluation

- Why did the plan fail?

The children were gripped by the story. The fact that it was based on truth was significant. The children were very keen to know the final outcome and to hear more stories of escape. Empathy was a strong reaction. The children's responses to the problem-solving questions were thoughtful and brought together many different thinking skills with subject knowledge. The emphasis on thinking and discussion at this stage, rather than writing, was very successful. Children recorded their ideas and responses as either short written answers or diagrams. These were recorded in a booklet that was structured by the questions, thus providing a scaffold for those children who needed support. These completed booklets could then provide further supportive scaffolds when children came to develop a fuller piece of writing in subsequent sessions.

Distinguish between fact and fiction

Empathy

The children then followed up discussion of the story by devising their own questions that they would like to ask the prisoners. They had a great many questions ranging from purely factual questions (e.g. How did you steal the electric light? Where did you get the socks? Did you take food into the tunnel?) to moral and ethical questions which demand high levels of thinking (e.g. Why did you try to escape? Was it stealing or borrowing?).

Further literacy sessions would involve retelling the story. This would be differentiated for different groups of children:

- Write a storyboard of the escape attempt in no more than six frames. If you like, shape your storyboard like a tunnel.
- Write this story for a newspaper, using no more than 100 words.
- Rewrite the story in the first person as a diary of one of the five friends.
- Imagine this escape had been successful and write the next chapter – What happened when the friends got outside the castle walls?

Further science sessions would involve:

- following up on the questions raised about the rock samples;
- pursuing the problem about making sand 'stick' together through building and testing sandcastles of different consistencies.

This session successfully engaged all the children despite the apparent complexity of the story. The class teacher commented on the level of involvement of some children with special educational needs, particularly the children who sometimes find it difficult to sustain concentration. The subject matter – wartime prison escape – although outside the children's own experiences, generated powerful empathic responses, which led to thought-provoking moral discussion concerning the rights and wrongs of war and imprisonment.

Different subject areas were successfully brought together, enabling children to make links in their learning. The session ended with the children wanting to know and do more.

Understand
dilemmas
faced by
characters in
a story

Example of children's responses

What would you dig with?

spoon, stone, stick, hands, cup, table-tennis bat

How could you hide soil?

Put in socks, Put down trousers, Put in pillow cases

Why couldn't they use a hammer?

Too much noise, Guards would hear and get suspicious, Didn't have one

Why doesn't sand stick together?

The sand breaks down because it acts like liquid

How could you make sand stick together?

Reinforce with wood, Mix with water, Pin clothes over the walls

Why did the plan fail?

Too dangerous, Difficult to plan the route, Could cave in, Hard to keep secret

Geography and mathematics

Lanner Primary School, Cornwall, Year 5

A traffic problem

School context

Lanner is a rural primary school with about 250 children. It serves a community which contains a mixture of private and social housing. The school is part of an education action zone. The number of children receiving free school meals and identified with special educational needs are broadly in line with national averages.

Context of the session

This geography session was part of a series based on the QCA scheme of work, units 12 and 20, focusing on the locality and traffic issues. The class had been studying traffic and parking problems in their own village. After identifying the problems themselves, they went on to collect the opinions of local people by creating and conducting a survey.

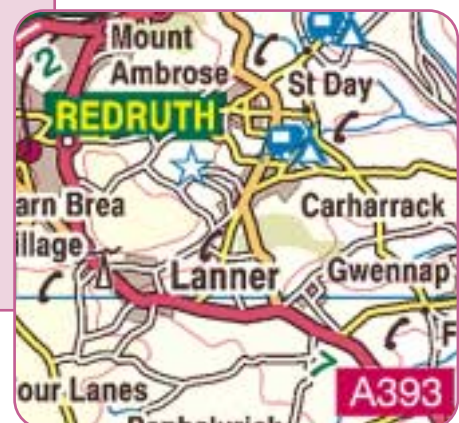
Objectives

Geography

- To collect and record evidence (1b).
- To analyse evidence and draw conclusions (1c).
- To use appropriate fieldwork techniques (2b).
- To use ICT to help in geographical investigations (2f).

Mathematics

- To select and use handling data skills when solving problems in other areas of the curriculum ... (Ma4).
- To identify data necessary to solve a problem (Ma4).
- To decide how best to organise and present findings (Ma4).
- To explain and justify their methods and reasoning (Ma4).



Information processing – children learned how to use maps as a source of information relevant to their enquiry

Enquiry – the children raised questions about an issue and recognised the need to explore the problem further by gathering evidence

Account of the session

The teacher discussed the objectives of the session with the class, relating it to work they had already completed in identifying traffic problems and conducting a survey of local opinion. They discussed the word 'analyse' and agreed a definition – looking at the evidence and finding out what it really means.

The teacher used a series of maps displayed on the interactive whiteboard to focus the children's attention on the reasons why the traffic problems occurred. They identified their village on the map and located the two towns on either side of it. They looked at a series of maps of increasing scale showing their immediate locality and finally the village high street. This related to survey questions about the village being used as a short cut between the two towns.

The teacher then introduced the task of analysing the data on the questionnaires. They discussed the selection of information and why they were using only the 'yes' answers. One child explained that they needed to know how many local people agreed with their ideas about traffic problems and solutions.

The children worked in pairs to collate the responses using the tally method that they were familiar with from mathematics. After 20 minutes, the teacher brought the class together and they collated the responses. Once all the results were totalled, the teacher posed the next challenge – converting the totals into percentages to help them get a better sense of the results. They were challenged to suggest the calculation needed to work out the percentage value of each total. They had time to discuss in pairs. Then one child explained his solution to the class, using a large calculator on the interactive whiteboard. The children went on to work with their partners to translate all the results into percentages.

At the end of the session the children were challenged to make deductions about local opinion based on their data analysis. They were able to conclude that local people did think that there was a traffic problem, and they could provide evidence from their data for this conclusion. Finally, returning to the problem of the village being used as a short cut, they looked at the map again. They worked out that an alternative route between the two towns would be almost double the distance and concluded that road users would not be happy to accept this solution.

Identify data to solve a problem

Social skills – children worked collaboratively, discussing and agreeing methods for presenting the data for easy analysis

Reasoning – children drew conclusions based on the evidence they had collected and analysed

Problem solving and evaluation – children used their judgement when reviewing a possible solution

Analyse evidence and draw conclusions

Enquiry and reasoning – children recognised the need to select information that was relevant to the enquiry and to analyse it

Enquiry and information processing – children used different techniques to process and represent the data

ICT, literacy and mathematics

St Cuthbert's CE Primary School, Year 6

School context

St Cuthbert's is an urban Church of England middle school with about 350 children. It serves a diverse community with a significant proportion of children who speak English as an additional language. The number of children receiving free school meals is above the national average. The school has five interactive whiteboards, one of which is placed in the school's computer suite, while the others are situated one in each year group and can be shared by teachers. The school has also invested

in a half-class set of laptops available for teachers to book to support particular lessons. The school is participating in the Primary Strategy's leadership programme and has focused on developing the use of ICT within learning and teaching in order to strengthen children's speaking and listening skills. Teachers in each year group plan opportunities to use the interactive whiteboard over the course of a week. The Strategy's consultants have provided demonstration lessons of how ICT might be used in the teaching of literacy and mathematics.

Context of the session

This literacy session was part of a series of lessons on persuasive writing. The children had been reading the story of a sailor set in Tudor times, in which two characters were engaged in dialogue about the pros and cons of setting sail with Captain Drake.



Objectives

Literacy

- To present a point of view in writing, e.g. in the form of a script, linking points persuasively and selecting style and vocabulary appropriate to the reader.

ICT

- To develop and refine ideas ... (ICT2a).
- To share and exchange information in a variety of forms (ICT3a).

Account of the literacy session – travelling with Drake?

The teacher and her teaching assistant introduced the lesson by modelling a conversation through role-play where the teacher took the role of protagonist. The children were then put into pairs and were set the task of continuing the conversation, putting themselves in the role of characters in Tudor times, as oral rehearsal for the writing task.

Empathy

Develop their ideas using ICT tools

Reasoning

The teacher asked the children to continue this conversation, using the laptops. They took it in turns to enter their sentences. The first child made a statement to which the second child had to respond, each child listening to the other's argument and presenting the best possible counter-argument. The teacher modelled this with the teaching assistant, recording their points on the interactive whiteboard. The teaching assistant then asked the children to help her put her case, asking them how she could respond to each point. To help the children, the teacher highlighted the key words in the argument, and the teaching assistant made sure that she countered this in her response.

Once the children understood the process, they continued to develop their own arguments, working together collaboratively to produce realistic, persuasive scripts.

Social skills

After the children had been working for a while, the teacher stopped them and displayed one of the pairs' scripts on the interactive whiteboard. She worked together with the children to refine and improve the debate, paying particular attention to the persuasive nature of the points and the links between each side of the argument.

Evaluation

Pairs of children then returned to their own script, editing and improving their work based on success criteria established during the mini-plenary about one of their scripts. They checked that they had saved their work, and then edited it, showing the changes they made in a different-coloured font.

Develop and refine ideas

In the plenary, the teacher selected a different pair's script to display on the interactive whiteboard. The two children read their script aloud, with the rest of the class reading it alongside, and the class decided whether they would have let the child set off around the world or whether the persuasive argument had failed and they would make them stay at home. Together, they agreed that the most effective persuasive points:

Evaluation

- were specific rather than general;
- related to the previous point;
- used appropriate language.

The use of ICT allowed the teacher to model the activity directly. The children could go back, edit and improve their work and compare their final script with the original. Collaborating to produce one script on the laptop rather than two separate ones helped them to focus on countering each other's arguments rather than writing two parallel conversations.

Present a view in writing, linking points persuasively

Objectives

Mathematics

- To consolidate knowing by heart multiplication facts and derive quickly corresponding division facts (Ma2 3j).
- To multiply and divide decimals mentally (Ma2 2i).
- To find different ways of approaching a problem – choose and use appropriate number operations to solve problems (Ma2 1d).

ICT

- To interpret information and check its relevance (ICT1c).
- To develop and refine ideas (ICT2a).

Practice/precision
– consolidate
knowing by heart
multiplication facts

Information
processing

Account of the mathematics session – mathematical word problems

The teacher started the lesson by quickly rehearsing the 7, 8 and 9 multiplication tables. In earlier lessons, the children had identified that they were less confident with the 7, 8 and 9 times tables and the use of these tables to derive new facts. She launched the 'Number Dials' Interactive Teaching Programme (ITP) on the interactive whiteboard. She used it to rehearse multiplication by 7 and then introduced the 70 and 0.7 times tables by changing the multiplier in the centre of the number dial and displaying the numbers around the dial as the children identified the answer. She repeated this with the 8 and 9 multiplication tables and, with practice, the children used their knowledge of single-digit multiplication number facts to derive quickly the new facts. The children were processing sequenced data and creating alternative ways to recall facts.

Choose and use appropriate number operations to solve problems

The teacher increased the challenge for the class. She randomised the numbers inside the dial, setting a centre number of her choice that the children could see. In this way she posed children multiplication questions that were out of sequence, encouraging them to draw on what they had just learned and practised.

Later the teacher randomised the numbers inside the dial and in the centre. This time she hid all the numbers. She revealed pairs of numbers and posed a series of division questions. Over time these involved division by a single-digit number, a multiple of 10 and a decimal. The children recognised the inverse relationship between multiplication and division and used their knowledge of multiplication to derive division facts. This developed the children's confidence and ability to use their knowledge of multiplication facts to undertake division calculations.

In the main part of the lesson, the teacher first reminded the children of the earlier problem-solving work they had been doing and the strategies they had been using. She displayed a detailed multi-step word problem on the whiteboard. The children read and discussed the problem with the teacher. Together, they highlighted key words and information and edited out redundant information to simplify the problem. In this way the children identified the multiplication and division calculations that they needed to carry out to solve the problem.

The teacher then displayed ten pieces of information which the children were to select from and use to construct word problems of their own. The problems had to involve two or more steps, include redundant information and tell a short story. The operations needed to solve the problem had to include division.

The children worked collaboratively in small groups, agreeing which information was to be included and drafting their problems. They wrote up their agreed problems on the school's half-class set of laptops. When two groups had completed their problems, they swapped laptops. Each group was to solve the other group's problem and enter a brief comment on the story and structure of the problem, addressing the three questions the teacher had put up on the board:

- Does the word problem make sense?
- Is the information in the problem clear?
- What number operations did you choose and use to solve the problem?

Reasoning

Information processing

Choose and use appropriate number operations to solve problems

Creativity

Social skills

Develop and refine ideas

The children solved problems using the skills they had already acquired and the sifting strategies they had discussed in the lesson.

They then returned to the laptops, read the comments they had been given and made any amendments to their problems that they thought would improve them.

In the plenary, the teacher displayed examples of the children's word problems on the interactive whiteboard. The children evaluated one another's problems and reviewed the activity they had engaged in to identify what to look for in word or story problems and the strategies they might use to solve them. Together, the teacher and the class read and discussed each problem. The problem designers explained what they had set out to do and the problem solvers explained their comments and the strategies they had used to solve the problem.

The teacher used these discussions to review the problem-design and problem-solving processes the children had engaged in. With the children she drew up a list of strategies that they could use when reading and solving word problems. The teacher planned to print out all the problems and, together with the list of agreed strategies, place these on display in the problem-solving corner. Over the week, each child was to solve at least two of the displayed problems as part of their homework tasks.

Problem
solving

Evaluation

Interpret
information
and check its
relevance

Communication





Section 4 CPD activities

The case studies can be used to enrich CPD activities in other units in *Learning and teaching in the primary years*. For example, the CPD activities from *Progression in key aspects of learning* could include examination of the annotated case studies in this unit.

CPD ACTIVITY

Planning to develop key aspects of learning in the curriculum

Aim

- To plan how to develop a given aspect of learning.

Materials

- Selected case study of your choice from section 1 – depending on the curriculum areas that are your focus for particular attention.
- Linked video clip.
- Handout 1, 'Aspects of learning – definitions'.
- Current medium-term plans for the curriculum area you have identified.

Organisation

- In pairs, using handout 1 to guide you, read through the case study, noting where key aspects of learning are evident.
- Discuss how each aspect of learning is supported by:
 - the context;
 - the teaching;
 - the learning activities.
- As a whole group, watch the video clip:
 - Discuss how the teaching supported the development of key aspects of learning.
 - Discuss how you might amend the lesson slightly to develop one aspect of learning even further.
- In pairs, examine the medium-term plans for your class. Identify three specific opportunities for developing the aspect of learning you have chosen. Consider the learning activities and any teaching strategies and questions you will use.
- As a group, share your ideas. Decide which of these you will trial.

Next steps

- Agree a future meeting date when you will share the outcomes of this activity and decide how you will further develop this.

CPD ACTIVITY

Embedding ICT in the curriculum

Aim

- To consider how ICT can be used across the curriculum.

Materials

- Selected case study of your choice from section 1 – depending on the curriculum areas that are your focus for particular attention.
- Linked video clip.
- Handout 1, 'Aspects of learning – definitions'.
- Current medium-term plans for the curriculum area you have identified.

Organisation

- In pairs, using handout 1 to guide you, read through the case study, noting where key aspects of learning are evident.
- Discuss how each aspect of learning is supported by:
 - the context;
 - the teaching;
 - the learning activities.
- As a whole group, watch the video clip:
 - Discuss how the teaching supported the development of key aspects of learning.
 - Discuss how you might amend the lesson slightly to develop one aspect of learning even further.
- In pairs, examine the medium-term plans for your class. Identify three specific opportunities for developing the aspect of learning you have chosen. Consider the learning activities and any teaching strategies and questions you will use.
- As a group, share your ideas. Decide which of these you will trial.

Next steps

- Agree a future meeting date when you will share the outcomes of this activity and decide how you will further develop this.

CPD ACTIVITY

Examining subject-specific skills, Key Stages 1 and 2

Aim

- To consider how subject-specific skills are developed.

Materials

- Case studies and video clips for the subject of your choice.
- National Curriculum programmes of study for Key Stages 1 and 2 for the subject of your choice.
- Current medium-term plans for the subject of your choice.

Organisation

- In pairs, read the case study and highlight or annotate this to show evidence of subject-specific skills. The programme of study will guide you in this.
- Discuss how each subject skill is supported by:
 - the context;
 - the teaching;
 - the learning activities.
- As a whole group, watch the video clip:
 - Discuss how the teaching supported the development of the subject skills.
 - Discuss how you might amend the lesson slightly to develop one subject skill even further.
- In pairs, examine the medium-term plans for your class. Identify three opportunities for developing the subject-specific skill you have identified.
- Consider the learning activities and any teaching strategies and questions you will use.
- As a group, share your ideas. Decide which of these you will trial.

Next steps

- Agree a future meeting date when you will share the outcomes of this activity and decide how you will further develop this.

Aspects of learning – definitions

Enquiry

These skills enable pupils to ask relevant questions, to pose and define problems, to plan what to do and how to research, to predict outcomes and anticipate responses, to test conclusions and improve ideas.

(National Curriculum, 2000)

Problem solving

The key skill of problem solving involves pupils in developing the skills and strategies that will help them to solve problems they face in learning and in life. Problem solving includes the skills of identifying and understanding the problem, planning ways to solve a problem, monitoring progress in tackling a problem and reviewing a solution to a problem.

(National Curriculum, 2000)

Creative thinking

These skills enable pupils to generate and extend ideas, to suggest hypotheses, to apply imagination, and to look for alternative innovative outcomes.

(National Curriculum, 2000)

Information processing

These skills enable pupils to locate and collect relevant information, to sort, classify, sequence, compare, contrast, and to analyse part/whole relationships.

(National Curriculum, 2000)

Reasoning

*These skills enable pupils to give reasons for opinions and actions, to draw inferences and make deductions, to use precise language to explain what they think, and to make judgements and decisions informed by reasons or evidence. *(National Curriculum, 2000)**

Evaluation

*These skills enable pupils to evaluate information, to judge the value of what they read, hear and do, to develop criteria for judging the value of their own and others' work or ideas, and to have confidence in their judgements. *(National Curriculum, 2000)**

Self-awareness

Self-awareness enables children to have some understanding of themselves. They know how they learn,

how they relate to others, what they are thinking and what they are feeling. They use this understanding to organise themselves and plan their learning.

Managing feelings

In managing feelings, children use a range of strategies to recognise and accept their feelings. They can use this to help regulate their learning and behaviour – for example, managing anxiety or anger, or demonstrating resilience in the face of difficulty.

Motivation

Motivation enables learners to take an active and enthusiastic part in learning. Intrinsically motivated learners recognise and derive pleasure from learning. Motivation enables learners to set themselves goals and work towards them, to focus and concentrate on learning, to persist when learning is difficult and to develop independence, resourcefulness and personal organisation.

Empathy

Being able to empathise involves understanding others and anticipating and predicting their likely thoughts, feelings and perceptions. It involves seeing things from another's point of view and modifying one's response, if appropriate, in the light of this understanding.

Social skills

Social skills enable children to relate to others, take an active part in a group, communicate with different audiences, negotiate, resolve differences and support the learning of others.

Communication

*The key skill of communication includes skills in speaking, listening, reading and writing. Skills in speaking and listening include the ability to speak effectively for different audiences; to listen, understand and respond appropriately to others; and to participate effectively in group discussion. Skills in reading and writing include the ability to read fluently a range of literary and non-fiction texts and reflect critically on what is read; and the ability to write fluently for a range of purposes and audiences, including critical analysis of their own and others' writing. *(National Curriculum, 2000)**

Section 5 Resources

Additional CD-ROM

To complement these materials, a double CD-ROM will be available in the autumn term.

CD 1 *Excellence and Enjoyment: learning and teaching in the primary years*

This contains all the units from this set of materials plus additional materials such as background research papers, further case studies and advice on running CPD sessions. It will be fully searchable through a key word search.

CD 2 *Excellence and Enjoyment: making the curriculum your own*

This CD-ROM has been designed as a companion to the *Excellence and Enjoyment: learning and teaching in the primary years* materials. It is intended to help support schools and settings in making the curriculum their own – in designing their curriculum in order to develop key aspects of learning through curriculum subjects, and to promote enjoyment and creativity as important routes to excellence.

This CD-ROM contains an extensive bank of resources and examples (including video material from schools and settings sharing their own ideas and experiences), which are arranged both by curriculum subject and according to the 'key aspects of learning' that are highlighted in the *Excellence and Enjoyment: learning and teaching in the primary years* materials. The aim is to provide resources that can help schools and settings focus on and develop particular areas of their curriculum, and to give ideas about creative teaching approaches as part of a planned process of whole-school curriculum design.

Further case studies covering a range of age groups and curriculum areas are available on the *Learning and teaching in the primary years* CD-ROM (see above).

Useful websites

- Primary National Strategy
www.standards.dfes.gov.uk/primary/
- Qualifications and Curriculum Authority
www.qca.org.uk/ages3-14/

Subject associations and other subject websites

English

- *National Association of Teachers of English (NATE)*
www.nate.org.uk
- *United Kingdom Literacy Association (UKLA)*
www.ukla.org

Mathematics

- *Association of the Teachers of Mathematics*
www.atm.org.uk
- *The Mathematical Association*
www.m-a.org.uk

Science

- *The Association for Science Education*
www.ase.org.uk

History

- *Primary History Association*
www.history.org.uk

Geography

- *The Geographical Association*
www.geography.org.uk

Design and technology

- *Design and Technology Association (DATA)*
www.data.org.uk
- *Nuffield Foundation*
www.primarydandt.org

PE

- *The Physical Education Association UK*
www.pea.uk.com
www.peprimary.co.uk

Music

- *Schools Music Association*
www.schoolsmusic.org.uk

ICT

- *Becta*
www.becta.org.uk
www.ictadvice.org.uk

Modern foreign languages

- www.ncaction.org.uk/subjects/mfl/

Art and design

- *National Society for Education in Art and Design (NSEAD)*
www.nsead.org

RE

- www.ncaction.org.uk/subjects/re/

PSHE and citizenship

- www.worldaware.org.uk/education/primary/citizenship.html

All primary curriculum subjects

- National grid for learning (NGFL)
www.ngfl.gov.uk
- School zone
www.schoolzone.co.uk



Acknowledgements

Many organisations and individuals have contributed to the development of *Learning and teaching in the primary years*. The Primary National Strategy would like to thank them all for their expertise, advice and comments.

We would like to thank all schools and individuals who have contributed case studies both to the *Learning and teaching in the primary years* CD-ROM and to this unit. In particular, we would like to thank all the schools and other institutions named in this unit, particularly the Education Department of the Fitzwilliam Museum, Cambridge, the Education Department of the Bedford Museum and the Plas Dôl-y-Moch Outdoor Education Centre (Coventry City Council).

