



# Acknowledgements

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## Participating schools

- Bainsford Primary School, Falkirk Council
- Borthwick Primary School, Midlothian Council
- Coupar Angus Primary School, Perth and Kinross Council
- Eastfield Primary School, Midlothian Council
- Ferguslie Primary School, Renfrewshire Council
- Hawthornden Primary School, Midlothian Council
- Heathrigg Nursery School, Falkirk Council
- Inveraray Primary School, Argyll and Bute Council
- Ladywood Primary School, Midlothian Council
- Lasswade Primary School, Midlothian Council
- Lintrathen Primary School, Angus Council
- Longforgan Primary School, Perth and Kinross Council
- Pathhead Primary School, Midlothian Council
- Rosewell Primary School, Midlothian Council
- Sciennes Primary School, City of Edinburgh Council
- Slamannan Primary School, Falkirk Council
- Stobhill Primary School, Midlothian Council
- Wardie Primary School, City of Edinburgh Council
- Woodburn Primary School, Midlothian Council
- Headwell Special School, Fife Council
- Dalkeith High School, Midlothian Council
- Kilwinning Academy, North Ayrshire Council
- Larbert High School, Falkirk Council
- Monifieth High School, Angus Council
- Notre Dame High School, City of Glasgow Council
- Oban High School, Argyll and Bute Council
- Stromness Academy, Orkney Islands Council
- Webster's High School, Angus Council

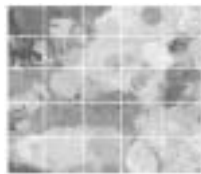
Special thanks go to all the staff and pupils of these schools who participated in the Creativity Counts development project.

*Assessing and Evaluating Creativity: A Literature Search* is available directly from the IDES Network, free of charge to IDES members.

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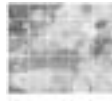
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# Creativity Counts: Portraits of Practice

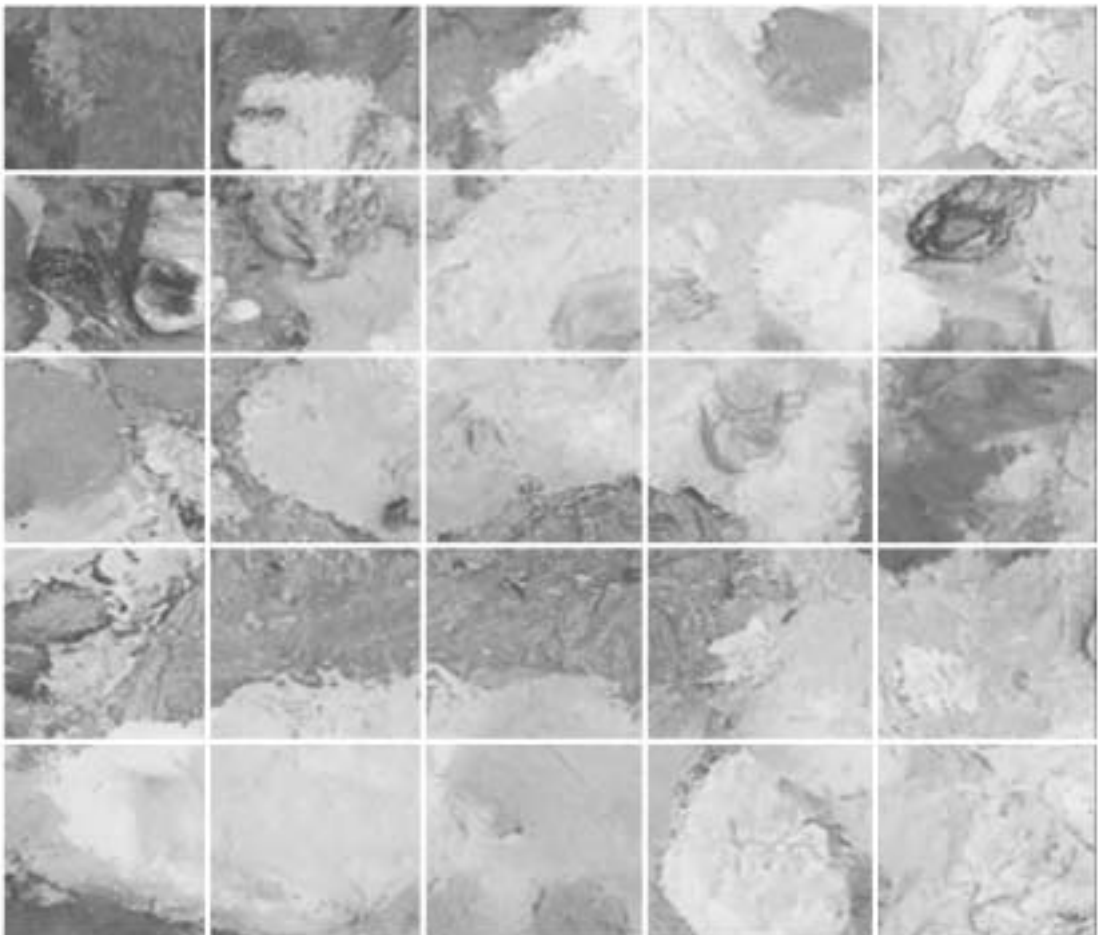




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## Introduction

**Relationships and environment**  
Pupils help each other to focus on learning, developing supportive relationships which encourage risk-taking and expression of ideas.

**Tasks**  
Pupils see how the tasks relate to the real world; they are clear about freedoms and constraints; they explore cause and effect; they make effective contributions and 'see things through'.

**Learning aims**  
Pupils relate the parts of the project to the whole; they understand the learning aims behind the tasks; their confidence, in expressing ideas and feelings clearly and imaginatively, has increased.

**Learning processes**  
Pupils critically reflect, are open and flexible, take risks, use general and detailed knowledge, make informal decisions, are clear about rights and responsibilities; they collaborate effectively, reach conclusions, realise high expectations, give support, challenge and feedback to each other.

**Resources**  
Pupils understand and manage resources, effectively selecting and developing them. They develop their ideas through these and realise high quality completed products.

**Products**  
Pupils understand the product's purpose, their solutions have originality, value, technical proficiency.



# Introduction

## Creativity Counts: Portraits of Practice

*Creativity Counts: Portraits of Practice* gives practical examples of how local authorities, schools and teachers have gone about fostering creativity. As such, it is a companion piece to a number of resources produced by the IDES Network and Learning and Teaching Scotland.

*Creativity in Education*

IDES Network/Learning and Teaching Scotland 2001

*Creativity Counts*

IDES Network/Learning and Teaching Scotland 2004

*Learning, Thinking and Creativity*

IDES Network/Learning and Teaching Scotland 2004

[www.LTScotland.org.uk/creativity](http://www.LTScotland.org.uk/creativity)

[www.ides.org.uk](http://www.ides.org.uk)

[www.LTScotland.org.uk/assess/](http://www.LTScotland.org.uk/assess/)

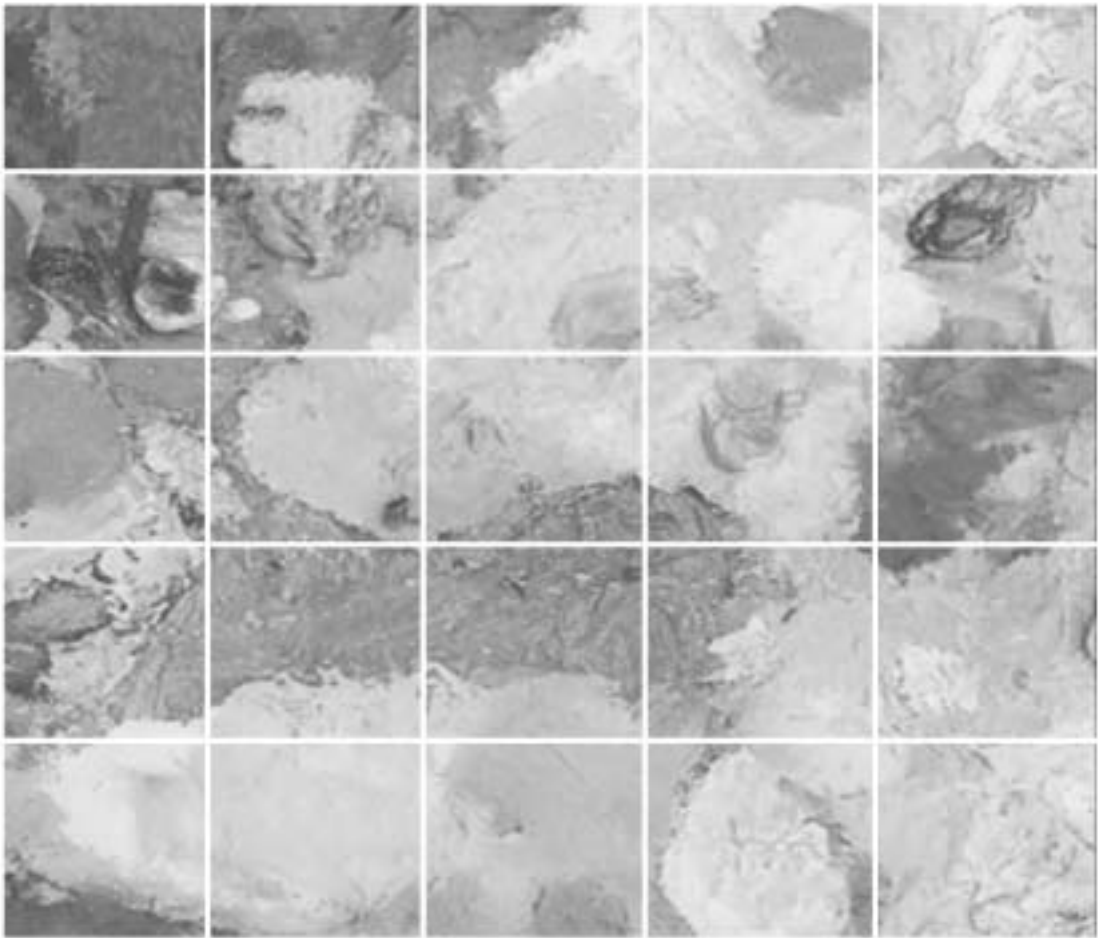
*Assessing and Evaluating Creativity: A Literature Survey*

IDES Network 2004 (This is a paper that will be available on request. Not printed.)

Schools across Scotland volunteered to develop programmes of work that would use and develop creativity in young people. They made use of the framework for evaluation and assessment illustrated opposite, and reported back at the end of the project.

What follows is 18 portraits of practice. They have been selected to represent a cross section of the learning and teaching experience provided to help develop and give expression to the creativity of young people. The portraits cover early years, primary, special and secondary schools, and show how different purposes can give rise to highly creative work by teachers across all the schools involved in Creativity Counts and beyond. We trust that they will prove interesting reading. We also hope they provide encouragement to all. Should you feel motivated to try to develop further your fostering of creativity we would be pleased to hear from you. Toward the end of this publication you will find a pro-forma that we hope you will use to let us know of the ways in which you are helping to foster creativity. The website [www.LTScotland.org.uk/creativity](http://www.LTScotland.org.uk/creativity) will host a selection of reported practice from schools wishing to take the time to share their creative experiences.





## Portraits of Practice





# Portraits of Practice

‘Who were they – and what were they like?’

by Stromness Academy, Orkney Council

Focus: art and design, English language, history and science

Class: Secondary 1 – single periods per week per subject, over a five-week period, with suspended timetable for the ‘dig’

Several staff members from the four departments collaborated to plan and carry out this project. A group of pupils were to explore the culture, environment and people inhabiting their area prior to the Picts. This involved the creation of artefacts, a kiln-firing, an archaeological dig, report writing and storytelling.

The project was carried out over a five-week period toward the end of an academic session. Pupils constructed their own view of what life and needs were like for the people. Artefacts were created. These represented the pupils’ views of everyday needs and the beliefs of the ancient civilisation. A kiln was designed and constructed by the pupils. This was used to fire the clay artefacts produced by the pupils.

## How it was organised and what happened

Five teachers collaborated in the planning of this project. Meetings were held out of school hours and each subject was free to develop the project in a direction that was most useful to their specific subject needs. All staff involved supported creativity and wished to plan and carry out a coherent project for a group of S1 pupils.

A group was selected for the project. Looking at the timetable staff realised that the class would not be the same across all subjects, there being practical groupings for some subjects. To overcome this, staff designated half the group as ‘makers’ of artefacts and the other half as ‘discoverers’.

Pupils undertook various activities across the departments involved. Some of the work was carried out during normal timetabled periods. However, during planning it was agreed that some of the work would best be undertaken with changed timetable arrangements. For the construction of the kiln and the dig teachers managed to have agreed changes to the timetable. This made the project run more smoothly and provide for a greater coherence to the pupils’ experiences. Pupils enjoyed this approach and responded with enthusiasm. Teachers believe this is something that can be built on in future.

After discussion and brainstorming ideas in art and design the pupils decided to use clay as a material from which artefacts could be made. This was available locally and pupils believed would be hard-wearing and attractive when decorated in some way. Having explored the life of hunter–gatherers, pupils set about making clay artefacts that were either functional or an expression of the ancient culture.

Pupils were collaborating and often working together in groups. They developed strategies to support weaker pupils so that all could participate in the project as fully as possible.

Under the guidance of the science teacher pupils examined ways in which kilns could be made and used. Pupils explored what they thought to be appropriate technology for the time. They then produced original plans for the kiln. They all used scientific concepts to good effect. Extensive discussions resulted in a single design being selected for construction. There was great excitement in the school as news filtered through that the kiln was to be fired. The clay artefacts were carefully installed. Many pupils expressed apprehension: believing that the artefacts would fracture, or that the firing would not work. In fact it was a great success – there were no breakages and everything fired.

The fired artefacts were taken by the makers and buried at a simulated archaeological site. In history pupils prepared to undertake a dig. There was structure to this as it was necessary for the pupils to appreciate how to undertake and record a systematic search of an area. Guidance was drawn up, with pupils clearly appreciating the reason for so doing. Pupils carried out successfully the dual task of undertaking a disciplined dig and creating a report of what they had done and found.

The beach site for the dig and the kiln firing area formed the real-life stimulus and environment for discussion and creative writing in English. The stories centred upon the clay artefacts and the believed lives of the tribal people whose time, environment and culture were being explored.

Assessment was undertaken through:

- observation of both individual and group work, and in particular the way in which each group responded to the challenge of involving all members in the generation of ideas and in decision-making
- scrutiny and evaluation of the products, written, drawn, made and spoken.

Assessment involved both adults and the pupils, sometimes using self-evaluation techniques.

## Reflections on how creativity was encouraged

This cross-curricular project was developed for the purpose of creating a powerful and engaging context within which children could learn through natural curiosity, imagination, communication, cooperation and role play.

The task enabled the pupils to imagine and reflect on a particular situation and context and to draw their own conclusions. The task also encouraged pupils to research and develop the kiln concept with minimal teacher guidance.

The structure of the project allowed, even encouraged the pupils to take responsibility for learning new skills. The quality of the clay products was evidence of how much they were motivated to do well. Each product was the subject of self-evaluation. Pupils did this before moving on to their next clay work.

The design and construction of the kiln provoked considerable interest and enthusiasm. It was their design and they had constructed it. This made a real difference.

Many pupils particularly enjoyed the dig. Pupils enjoyed having the freedom to explore what they thought the found artefacts were and what their purpose was.

All staff members agreed that creativity projects should be encouraged across the curriculum. They also say that encouraging other staff and having more flexible arrangements to timetabling would greatly assist in developing creativity within a secondary school.

The benefits of creativity

Pupils critically reflect, are open, flexible, take risks, use general and detailed knowledge, make informed decisions, have rights and responsibilities clarified, can collaborate, achieve conclusion, realise high expectations, receive support, challenge and feed back. Staff were confident that all the children involved in this initiative gained a great degree of enjoyment from the project. Pupils learned new skills and extended these. They communicated and collaborated successfully; they made independent decisions, solved problems, with most being innovative and imaginative, and all clearly had fun.

The pupils' clay work, creative writing and their oral and written evaluations give evidence of the high quality of their engagement with all aspects of the project.

As regards English specifically, it was a joy to be writing from real-life stimuli on the beach and by the kiln.

In art and design pupils could explore ideas over a period of sustained work and be truly imaginative in the knowledge that there were no wrong answers. Pupils could allow teamwork strategies to support members of the class who needed it. Teachers have confidence to attempt other extended projects in art and design. The project has allowed staff to use different teaching strategies and experience a more flexible approach to learning and teaching.

In science this project proved a worthwhile and valuable addition to the existing science course. The project has also reinforced the belief that a course should not be led too much by content alone. The way the project was organised has meant we have had more interaction with the students than would normally be possible on a day-to-day basis in a practical lesson. As far as the students themselves are concerned, they have extended their belief in themselves, in their own capabilities and in their ability to extrapolate from original concepts.

The history work was of a high standard; pupils' written accounts of the day's dig were of a high standard as were their drawings of the artefacts. All staff agreed that the collaborative approach proved a major success. All also agreed they would seek to involve more staff from other departments in future. In their written evaluations the pupils all said how much they had gained from working in groups. Many said how much they enjoyed the freedom and responsibility they had throughout the project. They also said the project helped them see the connections between the subject departments involved. 'It helped everyone in all subjects.'

## 'Our ideal school'

by Bainsford Primary School, Falkirk Council

Focus: fostering creative and critical thinking through a collaboration-based project

Class: Primary 6

The children in this school were recently told that their school is to be restructured and refurbished. The children have regularly seen architects surveying the school and identifying a plan of action. This situation provided the children with the motivation, a concrete purpose and a relevant context within which to design their own 'Ideal School'.

The project lasted for 10 weeks, with approximately four hours a week being spent on the project.

### How it was organised and what happened

Prior to the start of this project, qualitative semi-structured interviews were conducted with members of staff (for instance, senior management, teaching staff, classroom auxiliaries and support assistants). This interview data highlighted the staff's opinion that children need to develop the following qualities to become more effective learners: collaboration, confidence, perseverance, reasoning, concentration and initiative. These categories were then used to form the basis for pre-test and post-test pupil self-evaluation questionnaires to determine how the children themselves viewed their learning abilities. For more evidence, focus groups (roughly five children per group) were recorded trying to solve David Perkins' 'Breakthrough Thinking' problems. Data gathered from these sessions reinforced the staff's view that the children needed support to develop the qualities of collaboration, confidence, perseverance, reasoning, concentration and initiative.

Evidence suggests that it is through collaborative experiences that children develop their ability to reason and think critically and creatively.

It was intended, therefore, that this project would provide children with the opportunity to develop the qualities that had been identified in the baseline assessments as being areas for development. It was also hoped that this project would raise children's self-esteem and encourage them to take more responsibility for their own learning and to work cooperatively in a team situation.

The children (having organised themselves into groups of four or five) were given the following task card:

Your mission, should you choose to accept it, is ...

- to identify key areas for development within your school
- to write a petition to the local MP, which must be signed by at least 30 people. The petition must include a succinct summary of a position and argument
- to design, using whatever materials you deem to be appropriate, a three-dimensional model of your proposed school
- using ICT, draft an aerial view of one of your proposed classrooms
- to design a new uniform for your 'new and improved' school. Samples of materials must be provided in the sketches
- to devise a school newsletter to go out to pupils, staff and parents that outlines the benefits that your proposed school would create, and to drum-up support
- use whatever means necessary to advertise *your* school – be persuasive and emphasise why your prospective school should be built rather than others
- in craft, to design and create a new school emblem and motto
- to present the above, and anything else you feel to be relevant, to the pupil council committee/school board. You will have the use of an overhead projector for this purpose. The aim of this presentation will be to convince the target audience that *your* school would be the most beneficial to the pupils/staff/parents/community. There will be a time limit of 10 minutes. After this presentation the audience will be asked to vote for its favourite 'Ideal School'.

An effective climate of enquiry was established through a relaxed and non-threatening learning environment. Each group had a designated workspace. The children had access to every resource within reason. For the culmination of the project the groups had the opportunity to use professional materials, for instance, acetates, overhead projectors, microphones and computer-generated floor plans for their 'ideal' rooms. Their craft specialist trained the children to make models to scale. The children were able to study quality architectural plans and surveys and had the opportunity to discuss their plans with architects and specialists visiting the school.

One of the children's key resources was the staff in the school. The staff was seen as monitors and supporters of the children's projects. The children were encouraged to make dynamic responses in relation to the feedback that they received from the target audience (in this case, the rest of the school).

### Reflections on how creativity was encouraged

As collaboration was the key to the success of this project, this was reflected in the teaching style. There was no transmission or didactic teaching; the learning was placed firmly in the children's hands. Opportunities were provided for the children to 'discover'. The children were encouraged to take ownership of and responsibility for the task, and in doing so, responsibility

for their own learning. Constructivist perspectives were employed, Vygotsky's zone of proximal development was encouraged, whereby, what a child can do today in a group, they will be able to do tomorrow on their own. The teacher's role was to provide scaffolding for the children's learning and monitor their progress. In short, the teacher's role could be described as implementing a learner-centred facilitation approach.

A citizenship environment was encouraged as each group had to clarify rights and responsibilities at the start of the task in a democratic manner. As the children were so motivated by the project, they had high expectations of themselves. The project sustained pupils' engagement with the task, as with the exception of an initial criterion being given to the pupils on which they had to work, everything else they did was their own responsibility and ideas.

At various stages in the project the groups showed each other their work so far. The children were then encouraged to evaluate, think and reflect critically and positively on each group's work. The formative assessment ethos was continued within groups as, in order to obtain the best material, it necessitated the children questioning and thinking critically about the process of creating innovative material.

#### The benefits of creativity

At the end of the 10-week project the semi-structured staff interviews, pupil self-evaluation questionnaires and the pupil focus groups were conducted once more. The evidence gathered from these three research methods was startling in the following ways.

#### *Perseverance*

Initially many of the children found it difficult to work with each other and initially they found this new system much harder as it involved a lot more independent thought from them. However, by the end of the project, the dynamics of each group had changed and each group demonstrated their ability to cooperate and work as a team. The children achieved more by working together than they could have on their own. Many of these children were often put off by traditional problem-solving exercises, but in this environment they thrived on it; they loved finding more than one solution to a set query.

#### *Confidence*

The children's confidence increased perhaps as a direct result of being able to collaborate and share ideas. The children became more sure of themselves when they began to realise that there were not any set 'correct' answers – the project was what they made it. They also had raised confidence of their opinions – that their opinion was just as important as the next person's. In addition to this, the children had renewed confidence in their own ability – they were able to see the tangible products from their project and saw that their work really had paid off. The environment and setting in which the task took place gave them confidence. The children were extremely proud of what they had accomplished and each wanted to take their project home to show it off. Every member of staff that has been involved in this project has been amazed at how the children's confidence and self-esteem has improved as a result of being given the opportunity for self-development.

### *Collaboration*

The children loved this challenge, and liked being in competition with other groups. Group work was the key. The children now have a deeper understanding of cause and effect, as those groups that campaigned the most and advertised in the build-up to the presentations, got the best response from the audience. The teacher also found out that by implementing a learner-centred facilitation approach she got to know the children in a more informal setting, and that her communication and interaction with her class developed. Each group stunned the rest of the school at the final presentation by the innovative and high-quality 'Ideal Schools' that they produced.

### *Initiative*

Their products were entirely original. The children's ability to use their initiative was fostered effectively within the loose criteria and timescale framework within which they were expected to work. They were actively encouraged to be innovative and 'different', they were not asked to conform and complete the task in a prescribed way.

### *Reasoning*

The children were involved in 'exploratory talk' as much as possible and consequently their ability to reason improved. The data gathered from the focus groups revealed that by providing the children with the opportunity to collaborate and express their ideas, it enabled the children to be more reflective, better at peer and self-evaluation, and to assess the creative potential of an idea by thinking critically. This also ensured that they were producing the best creative material possible, as they were constantly being discerning 'strong sense' critical thinkers.

### *Concentration*

Encouraging the children to concentrate more on the task in hand was not difficult. As the task was relevant for the children and in an appropriate context, the children were motivated and excited about their work. The work the children produced was imaginative and it benefited them to be as much focused on the process as on the product – this ensured their sustained engagement with the task throughout the project.

### Looking to the future

If children are to become more effective thinkers and learners, more opportunities for collaboration (including communicating and interacting), reasoning, concentrating, increasing confidence and showing initiative need to be provided. For this to happen, teachers need to persevere more with initiatives, have more confidence in the children and collaborate more informally with the pupils to create an effective learning environment for the children. The way the current curriculum is structured does not easily allow teachers and pupils to foster these qualities. Today's curriculum relies heavily on transmission of content and teaching to attainment targets and as such, a strong focus on rote learning is often the norm. Opportunities for effective thinking (creatively and critically) need to be fostered through the teaching of the curriculum. However, implementing this approach implies a change in traditional teaching methods and consequently requires a similar change in curriculum policy. This modified curriculum would encourage teachers to implement a learner-centred facilitation approach and would provide opportunities for collaborative dialogues of reasoning between pupils and staff.

## 'The cool project'

by Notre Dame High School, Glasgow Council

Focus: home economics in an urban secondary school

Class: S1

Research shows that the west of Scotland, and Glasgow in particular, has the poorest health record in Europe. The project here is designed to help tackle this issue by encouraging pupils to think about healthy eating and discuss that healthy eating can also be fun!

The S1 pupils investigated through the internet and other resources how they could create an exciting and original ice cream that would meet the Scottish dietary targets and thus improve their own diet. It involved them going through a process of making a new ice cream. It was intended to be a challenge to change attitudes to food and to show how simple changes can have a positive effect on health.

The pupils were creating an ice cream that would meet the design brief and all the health and safety requirements. In doing so they would be learning to solve problems and find solutions. The product would allow the pupils to achieve the learning aims.

### How it was organised and what happened

The aim was to design and produce an original and healthy ice cream that meets one or more dietary targets.

In doing this the young people developed entrepreneurial perspectives, skills in food manufacture, marketing and research. They would be more aware of health and safety issues and how these would have an impact on the food product and its development.

The project aimed to help children learn to express ideas and produce a good argument for a chosen project using PowerPoint presentation, video making, and presentation skills. The intention was to use a variety of media including the internet to aid research, and to work as a team, agreeing and taking various responsibilities within the project. The outcome was to raise the awareness of healthier eating options amongst the class, their parents and the whole school community.

The teaching approach encouraged creativity by being pupil-centred and facilitating, rather than instructing. The teacher's role was to support learning and provide some of the materials, encouraging the pupils to think for themselves and the opportunity to learn by doing. The teacher's role was to encourage the groups to learn from their own mistakes and experiences, and to prompt the pupils to expand their ideas through a variety of techniques, including brainstorming and questioning sessions. The teacher had a role of providing specialist knowledge.

The methodology encouraged pupils to work in pairs and as a group to gather and record information, to produce storyboards for the camcorder. This helped them to develop their technical and organisational skills. The teaching approach enabled the pupils to develop communication and problem-solving skills. The intention was to develop confidence, self-esteem, self-motivation, critical reflection and informed decision-making, as well as widening their knowledge base.

In working together the pupils were experiencing and practising the skills of helping each other, learning from each other, listening to each other and accepting group decisions.

In designing an assignment that was achievable, the children had a sense of achievement and provided awareness that challenging tasks are worth undertaking, and bring their own rewards.

### Reflections on how creativity was encouraged

For the pupils, creativity was evident in their planning where they formulated original ideas, which were later tested and put on trial. They assumed responsibility for their project and had to make choices as to the combination of foods – taste, colour, textures, and aroma – which resulted in an original final product. Risks were taken with regard to outcome and this helped them to make more informed decisions about the right path to follow. The packaging and presentation of the product allowed imaginative and innovative choices. As each group found itself competing with others to produce the best product, the mistakes that the pupils made were used to enable them to identify better choices and ultimately to create pleasing, popular products. Pupils naturally felt disappointed when their solutions did not work full time, but they were encouraged to try again, after discussion, as to how they might correct it. The experience of failures made the ultimate success more rewarding for them.

For the product, the new and original recipes and the original packaging design was evidenced by very positive consumer feedback.

In terms of the teaching, the teacher set out to encourage self-motivation and to allow the children to develop their own ideas and to take risks. Good organisation, including attention to health and safety, was promoted.

The success of this approach was seen in the pupils' satisfaction. Pupils readily assumed the responsibilities and made good decisions, both as groups and as individuals. They were able to act on their own initiative and allowed the teacher to act as a facilitator and mediator.

The task encouraged creativity by presenting the pupils with a challenge that they had previously not undertaken. It gave them an insight into the world of business and the opportunity to speak to experts in the field. They were able to learn more of the problems and constraints imposed on the producer by the specification, mostly health and safety in this case, by being actively involved in the process. They learned to work together, to share ideas, to brainstorm, to make choices, to make compromises and make essential decisions.

The evidence for the creative task was seen in the exciting quality products that the pupils produced. The stimulus of original ice cream was good because ice cream is always popular with young people and because it provided a means through which they could learn about the various issues, including healthy eating and food preparation. The task also gave the pupils the opportunity to practice and extend their interpersonal skills.

#### The benefits of creativity

For the pupils, the benefits have been seen in the development of their entrepreneurial skills and their lateral thinking. It encouraged reliance on a group and sufficient self-belief to present their own ideas to the group. Motivation was encouraged because the pupils wanted to achieve as a team. In deploying their organisational and planning skills, they felt a pride in the quality of what they were achieving and the value of the project with which they were involved. They learned to appreciate group strengths and weaknesses. They showed good evidence of being independent learners and workers.

For the teacher, she was able to function in a facilitating role and focus on the ancillary support that was vital to the pupils' success. The pupil–teacher relationship was enhanced and mutual respect developed in this class. The happy atmosphere encouraged challenge and ambition leading to the successful outcome. The critical role of the teacher in modelling good creative skills, including demonstration and timekeeping, were important if the pupils were to adopt these as part of their process.

In the teaching methodologies, questioning techniques became less directive and more challenging to the pupils, who could no longer expect the teacher to supply the answer.

In terms of the classroom climate, the pupils responded well to responsibility and enjoyed participation in the decision-making process. There was a high level of enthusiasm brought about by the project and this showed in the high level of attendance. There were evidently better relations, both with each other and with the teacher.

In terms of the whole school, it is clear that these skills are transferable. It is a clear contribution to citizenship.

## 'The way we were'

by Monifieth High School, Angus Council

Focus: history/art and design

Class: S1

The purpose of this project was to combine the work of S1 classes in art and design with a history investigation into post World War II developments in housing, domestic facilities, acquisition of consumer goods, rising affluence, etc. This was achieved by looking at the same subject from both a historical and the design point of view. It did not interfere with what was normally learned in the curriculum and gave the pupils an opportunity to be creative with the knowledge gained in two separate departments. Pupils were asked to design and build a model of the school of the future – using the knowledge they had gained in their history class to inform their approach to the design of a school's living space of the future.

### How it was organised and what happened

The aim of the project was to give pupils the opportunity to practise creative learning and to make connections between the significance of history to that of art and *vice versa*. The project aimed to impress on both learners and teachers that creativity and the traditional pursuit of knowledge are comfortable bedfellows. Pupils were armed with the knowledge and understanding from their history lessons and were using this firm foundation of knowledge to inform their designs on living areas in their future school. This project aimed to emphasise that prior knowledge of a subject is fundamental to being successfully creative.

Six S1 classes were identified who were on the rota for art in the three-week period earmarked for the project. It culminated in a morning in the social area of the school when the plans that had been made in the art periods were put into practice. Pupils were divided into teams of four or five.

Assembly was used to give the entire first year a PowerPoint presentation on housing developments such as the Unite'D'Habitation, Marseilles, the Montreal Habitat and Newcastle's Byker Wall. These were all examples of social housing, with people coming together as singles or families. This was done while the pupils were studying housing conditions in history and building design in art. They were then invited to consider another community – the school of the future in this project.

After class discussion, starter questions were generated such as:

- what will be its facilities, both high and low tech?
- what will be the subjects?
- what and how will we eat and from where will the food have come?
- how much time will be spent in school?
- how will the local community be involved?
- how important will environmental considerations be?

Knowledge was therefore gleaned from the history investigation and the presentation at assembly from the principal teacher of art. The creativity was planned in the art classes over the three-week period. The criteria were also agreed on which they were to judge their own work and that of others.

The assessment of the creativity was based on pupil self-evaluation and peer evaluation. The pupils decided which project was the best under a range of assessment criteria discussed and agreed with the teachers. It was not based entirely on the final product but gave substantial weighting to evidence of thorough and relevant research.

During the art lessons, pupils were encouraged to talk about what they would see as the most important criteria by which their work should be judged. Scenarios were discussed, for example pupils play the part of architects recommending their design to clients, attaching costs, etc.

A lot of observation by the teacher on the dynamics of the group work began to inform staff of individuals' team roles. Comment was made that in future, perhaps on another project, pupils would be encouraged to take another role from the one that they had 'naturally' fallen into in this venture. Teachers found that they could begin to make an assessment as to whether individuals were people- or process-orientated. Also, natural leaders and organisers began to show and also those who found it more difficult to work in a team.

Pupils were aware of the importance of research from their history lessons and from the input from the principal teacher of art regarding housing developments of the past.

On the final day, pupils completed self-evaluation sheets and also submitted a sheet on the rank order of their colleagues' work.

It was intended that each group should make a presentation about their experiences but time was not sufficient to do so.

Video was taken of the day and a spokesperson from each group stood on the stage and made two short comments on behalf of their group, namely what they, as a group had liked best about their experience and what they had liked least.

## Reflections on how creativity was encouraged

The first thing that struck invited guests (such as CITB representatives) on the day was the 'buzz' of activity in the hall. Pupils clearly enjoyed the experience.

It was particularly interesting to staff involved that the pupils did not go for the most superficially impressive model as the best but gave a high weighting to the evidence of research. There was a feeling emerging that staff could trust the pupils' judgement, possibly being reinforced from the fact that criteria had been discussed beforehand and although influenced to some degree by staff, they were essentially that of the young people.

Through their informed judgement, pupils were clearly giving the process as much importance as the product, and this was reflected in their peer and self-assessments.

Video feedback in a 'vox pop' style was appreciated by the pupils and was informative to staff. Lack of time was cited very often as a dislike. Pupils very much appreciated being given the challenge of making something. They had not constructed an artefact in their S1 experience thus far – something that they clearly valued and missed from their primary experiences.

Pupils also appreciated the ownership they had of their design and many had researched background readings outwith school hours. They were happy and relaxed throughout.

Creative ideas on the future school were varied and imaginative including:

- retinal scan registration procedures
- open-plan classrooms almost in supermarket type design with a rolling programme of lessons into which the pupils could dip in and out
- schools open 24 hours for community use and for traditional/ICT learning
- virtual reality learning, where, for example, historical experiences could be re-enacted as if pupils were actually taking part in events.

The benefits of creativity

A sense of achievement comes high up the list of pupil benefits. A degree of self-awareness of their preferred role in a project-based environment was also of great benefit. Do I like working with people? How do I respond to deadlines and pressure? Am I a process person or a people person? Do I like to come up with ideas or do I prefer to work on putting them into practice? Can I influence others? Can I delegate responsibility?

The success of the event was shared on many levels. It was clearly appreciated within individual groups but there was also a sense of shared achievement amongst all the pupils as they mingled and admired each other's work and evaluated it together.

Changes to be made

The timetable in its current form was a major drawback to this project. During history lessons, although the whole class studied the post World War II housing, only a portion of them could follow it through in art as only some of them were on the art rota at that time.

There is an (understandable) dominant culture within secondary schools that we must conduct the curriculum in an exam-focused manner. This project touched both art and history departments as a creative way forward to cover parts of the S1/S2 curriculum. An offer has been made from modern languages that they come in on the idea next year.

## 'Thinking and trying'

by Lintrathen Primary School, Angus Council

Focus: science, mathematics and English language

Class: P1, P2 and P3 composite

Rather than confine the creative experience to a particular curriculum area, the teacher chose to develop the learning environment, learning and teaching strategies and specific tasks across what she had planned for a two-term period. The aim was to seek pupils' engagement so that they could express their full imaginative powers. One of the key decisions was to ensure children were empowered to think and act for themselves, rather than be coerced. A variety of teaching methods were to be employed ensuring that different learning styles were accounted for.

The teacher chose to concentrate development on the children's work in mathematics and language, science and language and through their play and language. Children were encouraged to develop specific skills across the curriculum and acquire and use knowledge and understanding in a variety of tasks, some undertaken in groups and some individually.

To help the children the teacher thought it important she act as a good creative role model.

### How it was organised and what happened

The starting point was the purchase of the commercially available *Let's Think* pack. After reviewing its contents the teacher decided it would be necessary to design additional games that would further encourage children's self-confidence, courage to take risks and their willingness to express themselves. She also chose to change the working environment. This was done to allow greater flexibility so that moving from individual to group work would prove easy and to enable the easy storage of work in progress. She also arranged to use the school hall as an additional space for workshop activities. To reduce frustrations the teacher chose to consult with pupils over the provision of materials for their use in tasks. This meant the children being able to express themselves creatively with minimal frustration given the working arrangements provided.

Using the *Let's Think* pack allowed the teacher and the pupils to adapt to sharing and solving problems, and using skills practised in various tasks. There were no worksheets and the teacher's notes in the pack enabled resources to be gathered easily and the activities to be carried out easily. It gave pupils real skills, including how to listen and focus, that they were to use in many other contexts. Here are a few practical examples of the challenges pupils faced and how they overcame them.

In play and language two boys wanted two cars to go down a ramp together. They decided to join them, but how? They tried various materials that were available, but the cars always failed to negotiate a turn. They explained the problem to the teacher and she pointed them toward a

box that she thought might help them. They were given a little time to talk about the materials in the box and how they might experiment to find a solution. They tested a number of ideas – none proving successful. Not deterred, they continued and eventually found their solution.

In science and language the teacher left materials on the investigations table to create a simple electrical circuit. Having previously been shown how to make a simple circuit using a bulb, this time the materials included a buzzer and a small propeller. Some children chose to go to the table alone, but most worked in small groups of two or three.

All the children were able to make new circuits, some showing how a new component could be made to work, others showing how two components or even the bulb, buzzer and propeller could be made to work together.

The children recorded their achievements in the form of simple diagrams, accompanying them with written descriptions of the various outcomes of the trial and error approach taken. There was plenty of discussion throughout: also quiet time and thinking time.

The approach taken to mathematics and language was similar and reinforced the strategies and methods already being used for other work. Mathematics became more about thinking, about the children's shared thoughts. The experience became more about learning mathematics through practical means rather than through worksheets. The teacher and pupils used games and thinking activities so that the learning was more about seeing the relationships between numbers. Together the class took more time over its mental maths. Pupils were rewarded for the quality of their thinking with the 'thinking bubble' in which their thoughts were noted. Questions such as 'Did anyone have another way of doing this?' were used frequently. This encouraged children to see that difference was being encouraged and that we do not all think and work in the same way. The approach encouraged children to suggest ideas confidently, even when they were unsure about how they might work. When a suggestion proved not to work, questions such as 'How can this be made to work better?' were used.

The teaching was adapted to make it as 'real world' to the children as possible. The strategies built children's confidence and skills such that they were able to and wished to express their ideas and undertake tasks even when they were required to persevere in order to complete a task to their satisfaction. Teaching so the children were equipped to be comfortable with the uncertainty they faced enabled them to become more flexible in their own learning and thinking strategies and for them to cope with many situations.

#### Assessment

During the learning pupils were encouraged to speak openly about their experiences and to express their ideas. Structured questioning also enabled assessment to focus upon the children's learning and what was necessary to allow the next step to be taken.

Observing the pupils during their group work helped the teacher to witness how children were using their listening and problem-solving strategies and to see how well children were coping

with the freedoms and responsibilities. When necessary this led to additional support being provided.

Pupils were encouraged to speak about any difficulties they were encountering; the two boys with the cars is one such example. They were also to talk about their expectations and set simple criteria. There was still a considerable amount of guidance being provided by the teacher.

## Reflections on how creativity was encouraged

The use of the commercially available *Let's Think* pack, proved highly successful. It provided the prop to what happened; in terms of both developing additional activities that would further strengthen the children's skills and readiness to undertake the problem-based approach. This approach can be taken only when you know the children you teach – and will be different for each group.

The structure provided enabled both teacher and pupils to gain the confidence to try new things and to accept that there were many more ways than one to arrive at a conclusion. On many occasions too, it was shown that there is more than one single answer.

The technique of using the thinking bubble proved very worthwhile. It shows that children have ideas and just need simple encouragement to express them. At times the excitement was tremendous. The moments when you see the delight and sense of achievement on a child's face remind you why you came into teaching.

Teaching is setting a framework for creativity. Doing so focuses the children, it helps them think and to organise their thoughts, to gather and organise, to identify, to evaluate and to learn from the whole experience.

The children learned how to cope, how to manage their disappointment and remain focused upon finding a solution. Adapting the way I went about my teaching has helped bring about a change in myself and in the pupils.

Throughout, the children saw the learning as theirs and were more ready to persevere. The approach we took has begun to make a real difference in other areas of the curriculum. The children now use strategies such as breaking down a problem into smaller, more manageable problems regularly. They now find getting stuck a good experience rather than a stressful one. They are also not frightened to admit to not understanding.

### The benefits of creativity

The children are involved in their learning and are far happier that their interests are being taken seriously. They see problems as a challenge, something positive rather than something to be upset by. They now have an input into the next learning steps and this helps greatly with their motivation. They have also found that sharing knowledge and skill boosts everyone's confidence. The teamwork also helped them become better listeners.

Time seems to have increased throughout my teaching. There is more time during investigations to discuss and to share with children. My role is changing. I no longer have the anxiety of always being the provider. I facilitate and mediate far more now.

Involving children in many aspects of assessment has helped too. This enables them to be much clearer about the purpose of what we are doing. It seems obvious now. I also see the children being far more willing to accept responsibility. This has meant I now find my job far more satisfying.

My colleagues are looking at training days now so that we can help develop the whole school culture.

Parents' comments are that their children talk more about school and what they are doing. This has led to parents saying they feel more involved.

Assessment of the topics has led to the further development of the maths curriculum at the school. This is ongoing, but we are convinced that this is a good development that will continue to pay dividends for all involved: pupils, staff and parents and others who have helped with practical aspects of grounds development.

In the light of our very positive experience we require to review and update policies. We have already begun to gather additional resources to aid us in seeing the environment as our classroom.

## 'Our school'

by Ferguslie Primary School, Renfrewshire Council

Focus: functional writing, art, drama and relevant ICT

Class: 20 Primary 6 children

The group of 20 Primary 6 children worked on this programme for about one-and-a-quarter hours per day for approximately eight weeks. The children planned and produced a range of products to promote their school. They used the focus of functional writing and incorporated music, art, drama and ICT to bring their products together. They were required to present their products to an invited audience. In constructing the products they engaged with outside agencies for support. They were encouraged to produce high-quality products that reflected the quality of education at the school, and the high expectations of staff and pupils.

### How it was organised and what happened

The aim was to increase children's motivation of functional writing through the use of a variety of resources and teaching strategies to embrace learning styles and sustain the engagement of pupils, including the use of mind mapping to assist the children to organise their ideas.

The project challenged the children to produce materials to promote school in an exciting and innovative way. The pupils' end products had a formal launch. This gave the children an opportunity to prepare and present to an audience.

The task allowed the children to plan and produce a valuable product that would be used by a variety of audiences and agencies. The quality of the product needed to reflect the quality of education at the children's school. The pupils had the freedom to explore their ideas, but were appropriately restrained by the available resources. They had to keep to the deadlines that they had set.

The planned teaching programme provided a structure to enable the children to record their ideas. There were opportunities to work collaboratively or individually, in groups of various sizes and with outside agencies.

The ongoing assessment of the children was used to guide their planning. Children developed the ability to evaluate their own work and the work of their peers. The teacher's assessment of how the children developed the project and worked as part of a team was used to determine further planning and teaching.

Once the children had set criteria for success, they carried out their own evaluation. The children were expected to agree a method of assessing recipient response to their products.

A minimum of one-and-a-quarter hours per day was set aside daily for their project. Other time was used as necessary. The learning environment encouraged creativity through its flexible and

open approach. The classroom was extended into the wider community, for example, with the use of the library, their own homes and the internet.

A variety of high-quality resources, including ICT resources, was available in the school. The option of seeking help from outside agencies was used. Some funding was available to support the children's work.

## Reflections on how creativity was encouraged

In terms of teaching methodology including assessment, the initial concerns about the openness of tasks on the part of the teacher were overcome. With creativity as the main focus, there was careful planning of method, using a wide variety of strategies. With a variety of people teaching and engaging with the children, less direct teaching was used and the teaching was more in response to children's needs as required.

In terms of the curriculum, there was a benefit of seeing closer links between areas of the curriculum. The relevance of the topic helped to maintain the children's interest in the language aspect of the curriculum, and they developed their skills in language even further. This was also encouraged through links with the community outside the classroom.

The teaching provided benefits in a number of ways. The teaching of mind-mapping skills gave the children a structure. Open discussion was allowed for in planning. Time was allocated to support, encourage and reinforce. A wide variety of resources was supplied. Direct teaching by specialist staff helped to develop the children's skills. The children were given the opportunity to express their own ideas and were given guidance in structuring next steps. The children could see their own skills coming together.

### The benefits of creativity

Most children eagerly contributed to discussions, and a few were content to sit back and listen. The children listened to a variety of views and agreed on those that were most appropriate. They grouped themselves according to each individual skill. They were evidently keen and enthusiastic to complete both home and school tasks. Independent working was very evident. They were taking notes independently, without being prompted by the teacher. Ideas were brought in from home. They engaged in self-evaluation of their own performances, and reflected in this their own high expectations.

Creativity was evident in the product in these ways.

- Tasks were completed to a high standard, with a variety of good-quality products. They organised a presentation to launch the products. They produced a brochure, a web page, a CD and a video. In doing this they developed and gained confidence in using a range of ICT equipment and skills. The pupils produced a high-quality formal letter and invitation. All of the products were new to the school.
- Children were given time to practise skills and to argue their case. They identified relevant questions. The standard of the tasks was dictated by a need for quality work. The children were in charge of what was being produced. They chose the task, and were challenging to

themselves. The outcomes were new to them. The tasks that they were able to choose from were wide enough for them to have a variety of choice. The openness of the task allowed the children to bring in their own preferences.

- They showed this by reacting positively and were keen to do extra work. They were involved in the process of enquiry, asking questions and reporting back to the rest of the class in order to allow decisions to be made. It was evident that the children were keen, enthusiastic and happy to continue with the task. The quality was constantly improving. Their motivation and enthusiasm was evident, as was the originality of their work. They carried out independent extension work related to the tasks they had undertaken.

## 'Life drawing' by Websters High School, Angus Council

Focus: art and design and English language

Class: S1 – subject lessons over a three-week period

Collaboration between teachers from each department resulted in the class using the stimulus for a still life as the basis of creative artwork and writing. Pupils produced stylised, mood drawings. Pupils then used the ideas represented by their artwork as a feature of a creative story in English language.

### How it was organised and what happened

The class was introduced to the idea of using a piece of artwork as a feature for creative writing in English language. Pupils were to be given a degree of freedom to control many aspects of their work from the way in which they interpreted the still life to the focus for the creative writing.

The stimulus was a series of still-life settings. Under the guidance of the art and design teacher the pupils were encouraged to interpret freely what they saw. Pupils were given a series of briefings on a range of techniques they might choose to use. They were then given time to consider, to explore how they wished to express themselves in two dimensions, colourfully and expressively. All the time the pupils were mindful of how they might incorporate the ideas conveyed by their artwork in their writing.

Realising the importance of the environment to creative writing, the English language teacher moved the class to the art room. Pupils were then engaged in discussions about the ideas conveyed by their art. Ideas were generated and shared with pupils taking notes. Imagining the situations, who might be involved, what might be happening and what impacts there might have been were all discussed. As with the artwork, pupils were to produce an individually produced piece of work. However, during their preparation, they were encouraged to talk and share ideas with each other. This led to much lively discussion.

Incorporating homework, the pupils then set about the creation of their story, ensuring the ideas coming from their still-life drawing featured what they produce.

### Assessment

The discussion with the pupils in both art and design and English language sessions proved very revealing. They clearly had many ideas and were motivated to express themselves.

Looking at preparatory sketches, and notes too, provided an insight into how pupils were responding to the challenge and how they were interpreting and shaping it.

Observation and scrutiny of these aspects of the process provided knowledge of how pupils were responding to the freedom and constraints they had.

The artwork and the stories were evaluated by the pupils under the guidance of teaching staff. The final products were assessed to provide feedback to the pupils so they were able to identify their strengths and areas for development.

## Reflections on how creativity was encouraged

It is very important for the pupils to be aware of the plan and how they are likely to be supported. Pupils also need to know what freedom they have and what is expected as a result of their experience and activity. We also gave much consideration to how we presented a different lesson to the pupils: ones that included a range of methods and allowed for different learning styles to be accommodated. This allowed the pupils to engage with the task with ease and, within the accepted constraints, on their own terms.

The freedom that pupils had proved very encouraging to them. Their artwork was full of expression. This revealed how much they were prepared to experiment with colour and use the various techniques they had been shown including some they created themselves. Also in their English work, the pupils demonstrated considerable willingness to express their ideas and share with others thoughts that might be helpful.

The stimulus of their own artwork was extremely important, as was the time spent with the pupils in discussing ideas and their proposals. Pupils did not feel restricted. They expressed themselves freely and were clear about the task and what their responsibilities were. The collaborative manner in which pupils developed their ideas helped raise the standard of what they produced both in art and design and in English language.

The pupils could see the link between the two departments and of the learning in both. Pupils appreciated the value of their work and they could also see that skills developed in art could also be used in English. This was further reinforced by pupils having access to the library resources that proved invaluable during the pupils' preparatory work.

It will be important to build upon this experience and to see how many staff members in other departments can become involved in fostering creativity. The continued support of senior management will be crucial to this. Perhaps there should be time given to planning across departments involved in the future. The stimulus used in art and design could easily be adapted to suit a whole range of possibilities. This could enable easy collaborations that, as well as including English language might also extend to science, history or geography. The work might also be facilitated by the agreed adoption of themes for creative work in different departments.

### The benefits of creativity

Pupils clearly enjoyed what they did. They remained focused throughout the tasks displaying determination and purpose. The quality of what they produced was high: their artwork showed great imagination and an expression of mastery of challenging techniques. In English language

the pupils produced extended scripts of a good quality with much expressive language being used. They structured their work carefully and were able to write with feeling without losing clarity. It was clearly beneficial for the pupils to write about an interest that they had helped to generate.

Pupils also displayed considerable responsibility throughout the work. It helped that they were expressing their own interests in art and design and English language.

Working with other staff was probably one of the biggest benefits. We learned from the expertise we both possessed. This gave us confidence in what we were doing. It was enjoyable for us as well as for the pupils.

In art and design this has led to the department developing and including a new observational drawing unit to the S1/S2 course. The pupils can see real purpose to this work.

This is hopefully the beginning of more cross-curricular collaboration with opportunities to form closer relationships with many other departments.

## 'Nature and number'

by Inveraray Primary School, Argyll and Bute Council

Focus: mathematics

Class: P3 class and P6/P7 composite – three lessons for the P3 class; four hours 20 minutes for the P6/P7 composite class, taken as requested.

The aim was to teach maths to children in a way that encouraged them to see the practical relevance of number work. The intention was also to provide appropriate stimulus and motivation to learning in maths by linking their work to practical development over which the children would have influence, even ownership. The development of the school grounds was chosen as the focus for the development of the maths curriculum.

The aspect of the curriculum reported involved two classes, with one passing to the other information that it had developed.

Information handling, number, money and measurement and problem solving were the curriculum areas covered by the P3 classwork. The P6/P7 composite class addressed the areas of number, money and measurement and problem solving.

### Reflections on how creativity was encouraged

The school had taken delivery of some trees that were due to be planted as part of the redevelopment of the school grounds. The P3 class discussed the planting of the five apple trees. From this starting point pupils were asked to make up stories that had the number '5' as the answer. In groups they set about the task. Most of the groups used the five trees as the basis of their stories. For example, if each tree grew two apples, there would be a total of ten apples grown. To reinforce the concepts the children expressed their stories in number form. The children grasped the concept very quickly and there were very few errors. The class was then asked to work out how many apples each tree would need to produce for each member of the class (20 in class) to have an apple. Extending this the pupils were then asked to work out how many apples each tree would need to produce for the whole school (total 85) to have one each. This proved very successful with the children recording their findings in table and bar chart forms.

The children then discussed what kind of information they would need in order to ensure that the trees were planted in good places. As well as discussing height and variety, pupils also had to find out how tall the trees were expected to be in ten years time. They then set about gathering and recording information about the trees in a database. As summary to the three lessons the children had a challenge of taste-testing varieties of apples. They were asked to taste samples and develop bar charts to show class preferences. For this the pupils worked out that each apple needed to be cut into sixths. Following some consolidation of the meaning of this fraction the pupils set out their tasting challenge, which the pupils set about with relish. The activity continued with children collecting the seeds from the apples that had been eaten. These were planted with pupils charting the growth over the following months.

The P3 class passed the information it had gathered about the trees, their suggestions for planting and their taste preferences to the P6/P7 composite class. This class discussed what they needed to do. They decided they would use the information they had been given to help them decide where the orchard should go, how large it should be and how to undertake its planning and setting out.

To carry out the task children decided they needed to select a suitable measuring device. From those available the group chose the tape, believing it to be the most accurate tool available. The class surveyed areas of the grounds they thought suitable and recorded the dimensions. On returning to the class they discussed how they could use paper and models to prepare a suggested layout. This meant having to work out a scale to use. Selection of scales by groups was based upon the presentational method chosen. The P3 class then joined the composite class. Together they used information both classes had gathered to work out their best plan.

Children were focused throughout and produced high-quality plans and well-presented information in a variety of forms including database, graphs and charts, tables, written information, and plans of the orchard. Pupils voted to select which of the plans they would use to plant the trees into the orchard.

Further work was carried out as part of the whole-school approach to the development of maths learning. Activities included a magic mystery tour and the design and making of raised beds.

#### Assessment

Throughout the lessons and activities a variety of assessment strategies was employed. Most were focused upon improvement of learning and of the finished product, whether information or plans. Discussion was used extensively. Pupils were also asked to comment upon each other's work. This helped improve standards.

A task from the maths scheme the school had been using was used as a check to see how much (or little) pupils had gained. Children managed the task with ease and accuracy.

Children's use of information they had generated also showed the accuracy with which they were working. Such practical self-assessment proved the most valuable. It taught the pupils how accurate they had been – which gave them considerable confidence in their maths abilities and the manner in which they had gone about the task.

Parents observed and commented upon how much their children were enjoying maths, along with the development of the school grounds.

#### Reflections on how creativity was encouraged

Children's responses to these maths activities have influenced teaching in maths across the school. Some of the real benefits have come from pupils being encouraged and being willing to take risks. They do not fear maths. They are not hemmed in any more and teachers are not

dominated by a planner. Taking the approaches we have has resulted in greater confidence and self-belief being displayed by the pupils.

Pupils are now more confident and self-assured in their maths concepts and demonstrate this in a number of ways, not least of these in their willingness to suggest extension activities. The methods used have encouraged staff to be more challenging and supportive at the same time. Having this dialogue between pupils, staff and the parents has proved to be really valuable.

The teaching methods selected enabled pupils to work collaboratively. Teachers definitely could see the value on the P3 pupils knowing that their work was to be used by another class. Similar comments were made by the teacher of the composite class. They supported each other and were prepared to express themselves clearly and with growing confidence.

Creativity was encouraged by the teaching and the approaches taken. Appropriately setting the context, ensuring that tasks were open-ended and affording pupils opportunities to express themselves freely were all important. Teachers used observation, discussion and questioning to enable them to support, challenge and facilitate learning.

Pupils are achieving at a higher level now – and with a smile on their faces.

#### The benefits of creativity

The pupils were motivated and took ownership of the task and the learning required of it. Teachers are far more creative in their own teaching and clearly evaluate learning prior to the next step being taken. Classrooms have become more 'alive' with children obviously more engaged in what they are doing. Children are also beginning to see they can take leadership roles in influencing the context for their learning.

We informed the parents of the approaches we intended taking. They have responded well to the high quality of work being produced, the achievement levels and by the enjoyment being expressed by the children.

Pupils have clearly been motivated by seeing their maths work mean something. They see how the school grounds are being improved as a result of their efforts, intellectual, social and practical.

Assessment of the topics has led to the further development of the maths curriculum at the school. This is ongoing, but we are convinced that this is a good development that will continue to pay dividends for all involved, pupils, staff and parents and others who have helped with practical aspects of grounds development.

In the light of our very positive experience we require to review and update policies. We have already begun to gather additional resources to aid us seeing the environment as our classroom.

## 'A working model'

by Sciennes Primary School, Edinburgh Council

Focus: science/electrical circuits

Class: Primary 6 – the project was conducted during the period February–May 2003

The teacher used the construction of an electrical model to provide the context for fostering creativity. Pupils were required to design a model that was able to float over a distance of three metres in the swimming pool.

### How it was organised and what happened

The pupils were challenged to construct a series of circuits following diagrams using conventional symbols. They were required to produce a working electrical model using series circuits. In the process they had to describe the effect of changing the number of components in a series of circuits.

The class had already had an introduction to circuits. The series of lessons was based on the Renfrewshire science materials for Primary 6, unit 4.

The task was practically based and the children had to apply knowledge through investigation and application. They were using the skills of discussion, prediction and investigation. They developed their ideas and created solutions.

The product was assessed through the evaluation of the working circuits and through testing and evaluation of the product itself. The working model was tested in the school swimming pool and, through observation, whether it remained watertight in making the journey across the pool.

The learning environment was the classroom and the class teacher and assistance from an assistant headteacher. A range of appropriate tools was provided and the availability of two members of staff was a big advantage in respect of using these tools.

### Reflections on how creativity was encouraged

Creativity was evident in what the pupils did through producing unique designs following a process through: planning, sketching, redesigning, considering suitability and availability of materials, constructing and adapting design to overcome unforeseen problems.

The teacher had evidence for this through discussion with pupils during the planning and constructing stages. They observed the pupils as they exchanged ideas, negotiated design and construction details, and remained self-motivated and on-task throughout the process. They collected evidence from self-assessment sheets completed by the children.

Creativity was evident in the product through the broad range of products constructed, incorporating a wide variety of designs and construction techniques. In some cases creativity was extended beyond the creation of the functioning product to consider the aesthetic appeal of the design. A range of imaginative and original adaptations and the designs of products were undertaken as pupils recognised and overcame design flaws.

Creativity was evident in the teaching where pupils were encouraged to collaborate, share knowledge and responsibility and challenge to produce a working model. The teacher's support was available and regular feedback was given, but design and construction was left open-ended.

Evidence for fostering creativity was found in the extent to which pupils were engaged by the task in hand, and did not feel the need to seek teacher advice/approval in relation to design and construction.

The task allowed the pupils freedom to design and use materials to incorporate into their construction. There was availability of a range of construction materials and tools for them. Pupils made a list of materials required and chose from the available selections, others improvised and brought in from home materials not available in the school.

#### The benefits of creativity

For the pupils, there was a strong sense of achievement. The task encouraged pupils to take risks related to design without fear of failure and gave them freedom to make decisions on how to respond to any difficulties encountered. The nature of the task allowed for success regardless of individual ability. The ethos of the learning environment encouraged a belief in their ability to complete and design the task successfully. The children had freedom of self-expression.

For the teachers, there was the opportunity to assess pupil response to a non-prescriptive task. Teachers encouraged complete freedom of expression throughout the design.

The benefits to the teaching methodology allowed for a focus on the creative process itself, which was observed and recorded. This was in the context of pupils setting their own pace. It was more than assessing the end product as a proxy for demonstrating pupil ability to complete a task.

In terms of the curriculum, a benefit was that pupils could see the relevance of the task in relation to the real world. They had freedom of design and purpose and this helped to achieve and maintain pupil interest. The Renfrewshire science material ensured that the activities were relevant to the 5–14 curriculum.

The benefits to the classroom climate and relationships were seen in many pupils experiencing shared success and recognition of the benefits of team work. For others it was evidence of what can be achieved independently. For all there was enjoyment of the process, regardless of

the outcome. Pupils were responsible for their own learning, and this supported increased self-esteem.

#### Changes to be made

In supporting the creative processes, pupils need to be encouraged to exchange and share ideas in creative context. Teachers will be encouraged to relinquish some aspects of day-to-day classroom control, for example, in terms of grouping and use of materials, in order to foster a truly creative environment. This needs to be balanced with safety and security. There can be less focus and emphasis placed on outcomes and more on the processes. As ever, it is about high expectations in a low-stress environment.

Within the context of art and design more opportunities could be provided for the introduction and familiarisation of a range of design materials and equipment. There could be the inclusion of more creative and design-based topics within environmental studies and expressive arts programmes of study.

## 'At the car wash'

by Hawthorden Primary School, Midlothian Council

Focus: cross-curricular, including maths, language, environmental studies, expressive arts and ICT

Class: Primary 5

The Midlothian 'Go for Enterprise' pack was used as a guideline in setting up the company. The children went through a process of identifying the type of enterprise scheme in which they would like to be involved, brainstorming what they were good at and in which they felt successful. They produced a project planning sheet and completed a feasibility study.

In setting up the enterprise company they identified the roles they would need to carry out and had elections for responsibility. Speeches, campaigns and voting for positions within the company were organised. They carried out some research in their local community and applied for funding from the bank. They located and experimented with resources, considered advertising and selling techniques.

### How it was organised and what happened

The main aims were to increase children's motivation, freedom of expression and confidence. The idea – in this case to clean cars for school staff – was realistic and had immediate results in terms of funds raised. It was an original idea, achievable, and it would increase the children's understanding of the importance of each person in the smooth operation of a successful enterprise.

The planned role is for the teacher to be a facilitator and mediator rather than a participator. Guidance was offered during business meetings, but final decisions rested with each individual group within the company.

Children needed to refer to previous knowledge, as they had completed a short course on creating a company. Visits to and from the local businesses highlighted aspects of enterprise, such as quality control and the need for high expectations.

In terms of the task, it was chosen to reflect children's experience. Some children have parents who work in the car trade. Other children have cleaned their own and friends' cars. Through feasibility studies, worries over cars being scratched or damaged were raised, which enabled children to understand the importance of the cause and effect of their actions. Research was undertaken to discover the best products, and advice from professionals was sought.

Assessment was informal and involved a lot of discussion with individuals and groups of children. A weekly meeting took place to review targets, long- and short-term, and to make amendments and offer suggestions where necessary. The children decided on the most successful group from the previous week, in terms of achieving group targets. An Excellence in

Business Award was given. An open forum to express ideas about business and make changes if necessary took place at the end of each weekly meeting. The teachers gave feedback to the class and individuals responsible for their car, in the way in which it was treated and whether it had been value for money. To achieve the Excellence in Business Award, the children had to show that their product or area of responsibility worked successfully, and had been delivered on time and within their remit.

The learning environment allowed children to express views without fears or concerns. Confidential comments book could be completed for ideas or suggested changes to the scheme as it progressed. This was discussed at the weekly meetings. Dedicated time in the weekly timetable was provided so that targets were achievable for them.

Practical and immediate resources included the telephone, the fax and the computer. These were available during a dedicated time in the timetable. Product research and gathering equipment helped children to realise what was realistic and acceptable results in the area within which they were working. Carrying out observations of professionals highlights possibilities and problems when seeking a high-quality product, including time to discuss how they can be overcome.

There was discussion about budget implications that have an effect on the type of products purchased and when weighing up benefits of different products in relation to price and effectiveness.

## Reflections on how creativity was encouraged

Creativity was evident in what the pupils did. There were different types of work, encouraging discussion and communication. The pupils reflected themselves on their strengths and weaknesses and gave feedback to others on this. They brainstormed ideas independently and in groups. They used this to show what they felt they had learned about themselves and others.

In achieving the outcomes they had a sense of ownership and success. The importance of the product quality was emphasised particularly when the activity was repeated. The children became much more aware of quality control and its role and success of their company.

The teacher was aware of the extent to which creativity was evident in the pupils in a number of ways. There was observation and participation in group and class discussion. The teacher had discussion with parents and other staff as the children talked about their experiences. It was evident that the motivation levels had improved. The teacher was able to observe the development of their life skills such as telephoning, using the photocopier and letter writing.

Creativity was enabled by the teaching process. The teacher adopted a flexible approach. There were opportunities for responsibility and decision making. The teacher ensured that the context used to stimulate the creativity was relevant to the children. There were opportunities for the children to carry through ideas and learn from experience.

The teacher adopted the role of facilitator rather than participant. She allowed the children to be in control of the process, and gave guidance and support when required. It also gave her more opportunities for observation and informal assessment and to communicate with the children on an equal basis.

#### The benefits of creativity

For the pupils, creativity can be fostered regardless of age and ability. There is a role for each child. Pupils feel able to speak out in class and give their views and express their feelings. Being involved in creativity encourages cooperation and 'real' communication. It helped them to understand their strengths and weaknesses and it raised their self-esteem, supporting the development of a positive self-image.

For the teachers and other staff, it gave them a feeling of being actively involved in the school, in what was going on in other classes and at other stages. It provided the motivation to find out about other initiatives and approaches and to experiment with these in the classroom. It was good that it confirmed that much of what was happening in the school was already fostering creativity and allowed us a sharper focus on the principles and objectives of creativity.

There have been benefits to the teaching methodology. It helped the teacher reflect on their own teaching practice and changed some of the approaches to lessons. It makes the teacher think about the number of lessons that involve some element of modelling or instruction, which seemed to be the majority. It has made the teacher think about how the class is assessed and realised that there should be more teaching and assessment than focusing on an end product. It has asked questions about the rigidity of the assessment that is used at present.

The benefits to the curriculum have shown that there is ample opportunity to foster creativity, but perhaps because the timetable is at present too full, many teachers are more concerned with ploughing through workload. There seemed little time to reflect on teaching methods in this situation.

The classroom ethos seems to have completely changed. It is much more relaxed but at the same time it is much more organised. Also, in the wider school we have become more involved in local issues. It seems that schools are more open to the community and have developed a more positive ethos in this respect.

## 'Toys'

by Slamannan Primary School, Falkirk Council

Focus: developing ideas through self-expression

Class: Primary 1

This activity was part of the Creativity Project in Falkirk Council area, which is in its third year. The project was run by a team of two expressive arts teachers and a nursery nurse, and they were allocated a classroom for the duration of the project, which the children visit four sessions a week. The team worked with Primary 1. The underlying intention was based on the Reggio Emilia approach, the aim being not to replicate but to adopt elements of its philosophy to apply within early years settings. Pupils were offered a wide variety of creative experiences, the direction of the work determined by their interests, and the practitioner acting as facilitator.

The focus of this project was to enable young children to express and develop ideas, allowing self-expression to foster self-worth. Within this context, communication was not confined to language but through the varied expressive elements, for example, movement, music, art and drama.

The emphasis is also on the creative process rather than on an end product. For the purpose of this project specific children were targeted, closely observed and their response documented. This enabled staff to evaluate pupils' interest and involvement on an ongoing basis, and to plan appropriately.

### How it was organised and what happened

Through personal and social development, the aim was to develop interpersonal relationships, a positive regard for self and others and to work on childrens' self-awareness.

Through expressive arts, the aim was to support childrens' cognitive development, with preference to skills such as questioning, problem-solving, and the skills of creativity.

Through environmental studies, the aim was to provide a context within which the children could pursue lines of enquiry and develop skills such as questioning and setting a hypothesis.

Through English language, the aim was to give children the opportunity through talking and listening to develop skills of speculating, discovering, reflecting and evaluating.

Through maths, the aim was to help the childrens' skills development in problem-solving enquiry as well as demonstrating mathematical knowledge in their play activities.

Through religious and moral education, the aim was to help the children in their personal search and their appreciation of the natural world. There was a focus on relationships, moral values and the children expressing views and feelings.

There were different products in the different subject areas. In personal and social development the children experienced the learning aims through collaborative play and social interaction. In expressive arts there was music making, dramatic role play and construction of individual and group projects. In environmental studies the children had storylines in which they used toys, constructed homes and role played with puppets. In English language the children had access to documentation and photographic evidence and had discussions with each other and with the staff. In maths they demonstrated the learning aims through the use of a variety of materials including pebbles and pine cones.

### Reflections on how creativity was encouraged

Creativity was seen in the individual approaches that were taken to the tasks. There was discovery learning by the children with appropriate adult direction. Different learning styles and methods of using materials and processing information were seen. There were divergent outcomes in, for example, dramatic role play. There was creative use of materials.

The teaching encouraged learning through discovery. Adults were facilitators in partnership with the children. Discussion with children and open-ended questions allowed for a more flexible learning environment. The learning approaches ensured that there was time to revisit, consolidate and expand. The learning aims ensured that children had a choice of routes and variable outcomes to encapsulate their imaginative responses to a variety of processes.

The childrens' level of engagement was high; self-esteem and confidence were evident throughout the duration of their tasks. A key factor was a learning environment that helped to produce the creative results.

A separate room was dedicated to this project and this enabled continuity and flexibility for the children. It allowed for revisiting, natural extension and development of storyline. However, the physical location did not easily promote collaboration and transference with other classroom activities. The choice and range of available materials were important to develop the childrens' interests, to stimulate creative responses and to take account of their developmental stages. Many of these resources were recycled and natural materials were introduced into the setting in response to the childrens' interests.

Assessment was mostly through pupils' self-assessment in consultation with staff. It centred on a development of communication and personal and social development. Social inclusion was assessed by adult observation. The focus was on positive reinforcement. Ongoing assessment was carried out through observation and documentation.

### The benefits of creativity

The benefits of creativity have been seen in greater ownership and motivation amongst the pupils, shown in longer levels of engagement and perseverance. Staff have recognised the children as powerful learners and give this appropriate nurturing. The project reinforced belief among school staff in the creative approach to learning.

There was a benefit in using documentation as a tool for assessing and observing learning behaviours. The structure of the project allowed time to engage with the children and become more aware of their conceptual frameworks. Learning seemed to be more purposeful. Drawing on childrens' strengths and interests, it helped to engage children who would otherwise struggle with the formal curriculum. It raised the profile of thinking skills and appropriate questioning strategies. The time and pace of learning accommodated childrens' different paces of learning.

## 'A sensory garden'

by Heathrigg Nursery School, Falkirk Council

Focus: a curriculum framework for 3–5-year-olds

Class: Nursery class

This activity was part of the Creativity Project in Falkirk Council area, which is in its third year. The children at the nursery were offered a wide range of experiences connected to a garden theme, and were involved in the development of a nursery garden. The focus of the project was to develop children's creativity and imagination through the expressive arts and the creation of a sensory garden. Ownership was encouraged through consultation and discussion. Natural materials were widely used, and children were given opportunities to revisit activities. The project ran in the spring term.

### How it was organised and what happened

Through emotional, personal and social development, the aim was to develop a sense of curiosity and wonder. There were opportunities to develop positive attitudes to themselves, others and to the environment.

Through communication and language, the aim was to develop a wide range of communication, including gesture, facial expressions, movement and verbal language.

Through knowledge and understanding of the world, the aim was to provide sensory opportunities of the natural world and to provide time for adults and children to engage with the beauty of nature.

Through expressive and aesthetic, the aim was to give children encouragement to express ideas, feelings and imagination and sound, shape, texture and imaginative play. This promoted self-esteem through the medium of expressive arts, particularly through exploratory play with natural materials.

Through physical development and movement, the aim was to develop skills in using different materials and a range of tools. The intention was to establish safe practices when using some apparatus and tools.

The teaching provided a spontaneous approach that was based on childrens' interest and lines of discovery. Working and consulting with nursery staff ensured that the project was not seen as separate. The exploration of the natural materials was central to the project through planting and growing tasks and a visit to the garden centre. Digital photographic documentation made immediate display available to the children, for group discussion and decision-making. The children were given time to revisit and consolidate their ideas in the teaching programme. The childrens' prior knowledge was recognised and developed through open-ended questioning.

Previous work had identified the overhead projector as a significant resource in exploring cause and effect. The children were made clear about freedoms and constraints through discussion.

Assessment was ongoing through observation, documentation and reflection.

### Reflections on how creativity was encouraged

The products that the children made were not pre-designed, but took on the design that the children wanted. There was discovery learning with appropriate adult direction. There were no right and wrong outcomes and this encouraged ownership and choice. Children were enabled to deploy different learning styles and methods of using materials and processing information.

The teaching approach allowed a wide variety of potential outcomes and choice of processes that produced imaginative responses. The staff encouraged this by acting as facilitators, observing, listening and using documentation to plan and reflect. This allowed the children the opportunity to revisit, consolidate, discuss and expand their activities. The children were able to discover things for themselves, rather than it being a directive approach. The flexible learning environment was a key approach to fostering creativity.

### The benefits of creativity

There was a range of skills developed in the children through this approach including self-esteem, motivation, long periods of engagement and perseverance. The childrens' enthusiasm and their pride in their achievements were obvious benefits. There was more parental involvement.

In terms of the teaching methodology, the time to engage with children and to observe their learning behaviours was important. It seemed to make learning more purposeful and teachers were able to reflect on how children were engaging with the processes. The different approaches to teaching allowed for more flexibility. The staff engaged with children who would otherwise struggle with the formal curriculum, tapping into their strengths and interests. Staff confidence increased.

# 'Healthy breakfasts' and 'Design for fun'

by Oban High School, Argyll and Bute Council

## Introduction

In this school the initiative involved two departments that wanted to improve primary and secondary liaison in a rural area. The departments involved were technology and home economics.

Focus: home economics

Class: Primary 7 children

The teachers of the secondary school visited the associated primary schools and introduced the topic to the teachers and the children. When the children visited the secondary school as part of their induction, they pursued the project in the facilities of the home economics department.

## How it was organised and what happened

The pupils investigated the types of convenience foods available and designed a snack meal. They also looked at the importance of breakfasts. They combined both of these aims into the task of designing a recipe and baked a healthy muesli bar for 'young people on the go'.

The teaching process involved the children investigating different types of muesli bars, carrying out a sensory analysis and planning how they would design and make their own muesli bar. The sensory analysis and the associated tests provided good opportunities for the skills and approaches to creativity to be encouraged.

There was lots of practical activity in the introductory lessons, including tasting of food, which provided both enjoyment and motivation. Classroom displays assisted the ownership of the project amongst the pupils.

Although there was a restricted brief provided, imagination and freedom was encouraged through the pupils being given a wider range of ingredients from which they could select.

The teaching approach encouraged confidence and building of success through materials being formally structured and good scaffolding of learning taking place. Pupils who were less secure benefited from this, and also working in groups of different abilities where all children could contribute, and have a role to play.

It was good for the children to see primary and secondary teachers working together.

The teaching approaches helped embrace the pupils' sustained engagement because there was motivation in the drive to produce the product. It was a real experience as the children could see that the products were available in shops. They used real materials both in the

sensory analysis and in the production of their own muesli bar. The materials were designed so that it was always clear what the next step was and pupils had to reflect on the extent to which they had achieved each step. The relationships in the classroom were excellent.

Teachers observed the pupils during the lessons and were able to identify highly motivated pupils enjoying their learning, particularly the practical work. Comments, discussion and feedback from primary teachers added evidence that pupils were engaged in the experience, developing new skills and were boosting their confidence.

#### The benefits of creativity

The benefits to the pupils were their awareness of the scope of the food developed and an increased confidence in their ability and practical activities, including working as a group.

For the teacher it was a great benefit to have highly motivated pupils who wanted to be successful. The practical activity also encouraged the children to engage with the theory more effectively.

Benefits to the teaching methodology included a more focused approach to lesson structure, providing scaffolding to promote creativity. Staff members were encouraged to give children more individual input, which is a benefit to fostering creativity.

The benefits to the classroom were seen in the enthusiasm and energy that was generated amongst the pupils. Their curiosity and interest were stimulated because they were making something new and different. They shared their experiences and mistakes were used positively to help all children learn.

These experiences and processes soon communicated themselves to other areas of the school and to other primary children who looked forward to anticipating both the learning environment and the creative experiences.

#### Technology department

The technology department focused on a design process where the children were to make a skill game.

The technology teachers visited the associated primary schools to talk to the children and the teachers about the design process and explain the activity that they would be involved with.

#### How it was organised and what happened

The design process captured the children's imagination. The children had realistic challenges and were motivated because they know that they can achieve success. The pupils have the opportunity to make something that is different. The criteria are contained in the design process, as it is taught. The processes, the targets and outcomes, are designed to give pupils a high level of success. The pace of work is at a high level, as is the challenge. The learning environment, particularly the emotional climate in the class is important. The relationships, the humour and the care of staff lead to sustained engagement of the pupils.

(It is intended to review the impact of this approach on behaviour management over a two-year period.)

Pupils were encouraged to self-assess against the criteria that they had developed and to which they were working. The assessment criteria were shared with the children – the 'what', the 'how' and the 'why'. In terms of the final product, the aspects of it were assessed by both the learner and the recipient – its aesthetics, ergonomics, the materials, the market and its value.

#### The benefits of creativity

The pupils benefited through learning with enjoyment. They see the outcome, they warm to it, they are motivated and they put in the effort. The connection of what they are doing to the real world was important in terms of this.

An aspect of pupil needs was met where they had a raised awareness of manufacture.

For the teachers, the benefits showed in that teaching was much easier, it was more enjoyable. The pupils were motivated following their success. It certainly was harder work at one level but it was much less stressful and more enjoyable.

For the teaching methodology the benefits accrued through a deliberate change in methodology. There was more variety and children worked in groups of four or five. Group discussion and presentation in participation groups and individually were all planned into the process.

The curriculum processes that were previously restricted to S5 and S6 are now introduced into S1/S2, for example, product of analysis is taught in S1. There is the deliberate teaching of the design process in the P7/S1 interface. A great benefit is that this opens up more time in S3–S6.

In terms of the benefits to the classroom, they have been very positive. The relationships are the key and the starting point. The teachers are constantly circulating in the room and doing all that they can to create a positive atmosphere. Choice at all levels of process is built into the course – pupils can choose colour, shape, form, packaging and so on.

The benefits to the wider school showed there is much improved primary–secondary liaison at curricular level. They have a better understanding of assessment and more credence is given to the primary assessment.

The Primary 7 children certainly gained by visiting the secondary school to work in the real situation of the technical department. This working with the staff eases the transition from P7 to S1. Pupils are relaxed. An important aspect is that mistakes are used positively and children know that this is the case. This helps to improve the relationship with the teacher. Staff members have worked hard to establish and sustain an environment and emotional climate that makes creativity possible.

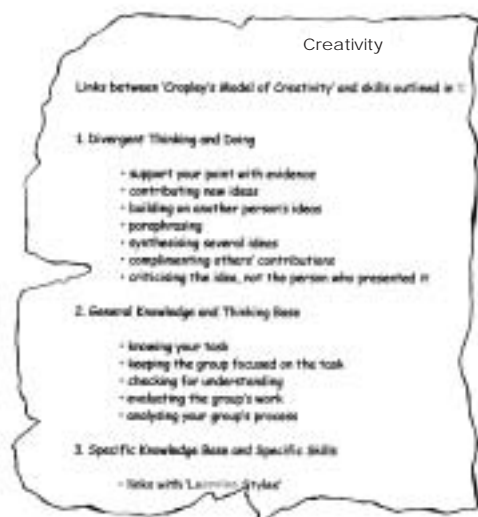
## 'Moving on with creativity' by Wardie Primary School, Edinburgh Council

Focus: learning and teaching

Class: whole school – subject lessons across the curriculum

School development has been the motive for this school's commitment to fostering creativity. Over a period of several full sessions the school, working collaboratively with one of its neighbours, developed approaches to creativity across the curriculum and throughout the school. It also engaged in a programme of after-school sessions. These involved members of the wider school community, including parents, working as coaches for the programme. The commitment to fostering creativity in these was borne out of the belief that creativity is an essential human ability and expression: one that permeates every aspect of life, and, as such, every aspect of school life.

The school decided upon a two-pronged approach. It established systematic support for creativity through ethos development and adopted a developmental approach to collaborative group work and learning through creative challenges including an out-of-school creativity problem-solving club for students. However, the school decided it would also focus on the issue of assessment of creativity and how this could be helpful to students, teachers and the wider school community. Beginning with study into learning styles the school decided to work-up an approach that could be used for self-, peer and guided assessment of creativity. It was envisaged that outcomes of this process could be linked to individual education plans, to further refinement of the programme and to support for individual students' learning through it.



How it was organised and what happened

The National Priorities for Education proved the starting point for this latest phase of development in the school's fostering of creativity. Applying self-evaluation the school

concluded they should develop their ability to measure creativity constructively across the school. The focus for self-evaluation and development of any measurement of creativity was the drive for effective learning and teaching throughout the 5–14 curriculum.

The first step was to have two teachers, working collaboratively to an examination of Gardner's work on multiple intelligences. They developed their own programmes for creativity and collaborative group work and the evaluation employed within them. They also reminded themselves of the earlier research on learning preferences. This led them to recommend that the school use the materials they had developed in the existing learning and teaching programme for creativity and collaborative group work. Further exploration led staff to using a framework for stocktaking creativity developed by Cropley. (*Creativity in education and learning: a guide for teachers and educators*, Learning and Teaching Scotland, 2001).

Cropley promotes cognition, personal dispositions (to be open-minded, adventurous, and reflective, etc.), motivation and a dynamic interaction with the environment. This struck chords with the school since their collaborative group work and creativity programmes were designed to build and support student abilities in social skills in the early years. Young students are supported in identifying and describing the key skills required in group work (being ready for the work, talking in a quiet voice, listening to others within the group, addressing others by name and staying with the group until the work is completed).

Once these skills have been well practised throughout their curriculum learning experiences students are then exposed to a programme that aims to develop their functioning skills. This involves:

- the development of students' abilities to remain focused on the task
- taking turns to speak
- being prepared to contribute to the ideas of the group
- encouraging each other to make contributions
- supporting points made with evidence and complimenting contributions made by other members of the group.

In P6 and P7 higher-level thinking skills are explicitly encouraged. These include:

- asking for and providing clarification
- building upon another person's ideas
- paraphrasing ideas to show understanding
- criticising ideas and not the person suggesting
- arriving at consensus
- reflecting on the group's processes and evaluating the group's work.

Students are expected to combine these experiences and abilities with the skills developed through the earlier stages of the progressive program.

Throughout the programme students are encouraged to reflect systematically. Descriptions of the skills and the abilities that the students themselves have identified and described have been written up. These are used by students in the middle and upper years, along with pictorial variation developed for use with early years students.

Cropley's framework for stocktaking was then compared with their own approach and the materials for teacher-guided student evaluation. The stocktaking framework employs the following headings:

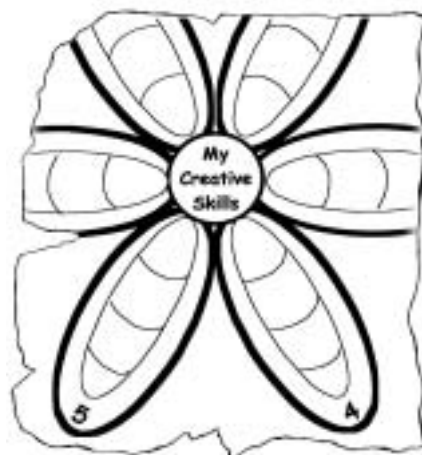
- 'Divergent thinking'
- 'General knowledge and thinking base'
- 'Specific knowledge and specific skills'
- 'Focusing and task commitment'
- 'Motives and motivation'
- 'Openness and tolerance of ambiguity'.

These were used by the teachers as the organisers for their own version that incorporated the work already developed within the school.



They were very clear from the outset that whatever they were to produce, it would have to be accessible to both classroom teacher and the students themselves.

Producing a description of the key characteristics meant the school had a set of guiding ideas that could then be adapted for use by the students at different points in their developmental programme. Although not yet developed, a pictorially presented version that uses simplified language will be produced for use with the very young.



## Reflections on how creativity was encouraged

The area of creativity is quite complex. Creativity is far reaching in terms of its contribution to personal growth and its contribution to social, economic and cultural wellbeing. Creativity is too important for it to be left to chance. We have learned how we can become better at fostering it. The school and everyone associated with it have seen benefits. Our knowledge and understanding of creativity, although requiring much thought has been aided by what we have done.

We took a collaborative approach to exploring creativity and bounced ideas off one another. We learned that if you stick with a task you will eventually feel satisfied when you have good results. We found a resolution to our problem. The assessment materials fitted our particular context: one that we feel will strengthen our knowledge of creativity, its importance to students and indeed to the whole school. In many ways this was an example of creativity in action.

### The benefits of creativity

We have come up with a product that will help teachers in their quest to develop their knowledge and understanding of creativity. It has helped to foster creativity by giving us a focus for building upon the successes of our programmes for collaborative group work and creativity throughout the school.

Another spin-off is one for the whole school: our value-added approach to learning and teaching. We are confident that it will raise attainment and provide skills for life. It provides an insight into how children learn and how to create the right climate for all children.

We have developed a progression and trust that the benefits of creativity, indeed learning, need not be measurable by percentages or summative assessments.

## 'What a game'

### by Headwell Special School, Fife Council

Focus: technology

Class: upper secondary special school – three lessons each of 35 minutes, plus a visit to a toy shop that was built into another activity

The aim of this project was to complement the existing achievements of this upper-secondary age group of children with special educational needs. Particularly, the project focused upon the pupils working cooperatively, making their own informed decisions and through sustained effort (for the pupils) work toward a high-quality solution to a problem that demonstrated each pupil's understanding of the concept of mechanical movement.

The specific challenge, which was negotiated with the pupils, was to design and make a toy or game that moves independently in different ways. The school uses 'Symbols' to aid all forms of communication.

### How it was organised and what happened

Pupils who are autistic need to have considerable structure to their lives. This project, as with all other learning experiences was organised to ensure the pupils had the support they require in order to feel they could express themselves freely. The structure provided was designed to provide all the normal scaffolding that is expected. However, the freedoms and responsibilities had to be clearly expressed. This was achieved during the first lesson when the challenge was introduced. The pupils were involved in discussion about the task. This helped them clarify, enabling each to understand what the problem was so that they could identify with it, and, in so doing, could take ownership for aspects of it.

Pupils knew from the outset that they were to complete the task in three lessons. The teacher believed this meant the pupils knew exactly what was expected of them. Following on from the discussion and introduction of the task, pupils were shown pictures of a number of toys; they also looked at toy catalogues and visited a toy shop in the town as part of another shopping activity.

The ramp for cars on a toy garage gave one pupil an idea. The car moved freely because of the sloping ramp – no need to push or pull the car (remembering the brief for the task). The group was able to make a number of suggestions on how this theory could be tested. A toy garage was borrowed from another class. Pupils soon realised that the idea, although good, did not give the kind of movement required by the brief. Undeterred, pupils decided to make their own ramps from light card. These were then used to test how different kinds of movement might be achieved. Marbles, a sweet and a building block were all used to see what could be done. Pupils improvised with their card models, using string and supplementary strips to create side guides to the ramp so that movement could be controlled back and forth.

In the second lesson pupils recalled what they had done previously. They then set about exploring how their basic ramp concept could be made into a toy. They asked themselves what else could tilt. After trying cups, trays and a book they decided the tray worked best. This idea was taken further by the teacher showing how some games use a marble in a tray arrangement to create a maze game. All the pupils liked this and decided they would each produce their own version.

Whilst pupils encountered many difficulties in the work that followed, they remained focused upon creating their own solutions. All agreed to use the idea of applying barriers to the tray to create the game and keen to produce a solution in the next lesson, pupils agreed to bring with them something that could be used as the tray base.

The 'marble rollers' were all created in model form using the resources and common modelling materials and equipment that pupils had remembered to bring. Each pupil produced his or her own solution. They helped each other during the construction. The final outcomes were tested. Pupils decided that two of the 'rollers' offered a considerably greater challenge than the others. All worked – all were successful. Pupils took their work to a class with younger pupils to let them test and play with the games. This proved really satisfying and enjoyable for both groups.

Now for the next challenge! The pupils have already decided they wish to design and make a board game.

#### Assessment

Talking mats – pupils used their talking mats to show what aspects they enjoyed and what they found difficult. They picked the symbol of the activity and placed it under a category.

- Symbols: worked together, worked on my own, artwork, thinking of ideas, discussion, designing, trial and error.
- Categories: really enjoyed, good, OK, difficult, too hard, boring.

Pupils' own assessment highlighted the success of the challenge. Pictorial evidence also gave a clear understanding of the pupils learning, as did observation of how they went about the work. A series of questions further established the pupils' enjoyment of the task.

#### Reflections on how creativity was encouraged

Pupils normally need a lot of support. Although much structure was provided to enable pupils to make choices and decisions, they had considerably more freedom to express their own preferences, individually and collectively, than would normally occur. Pupils responded well to additional freedoms. It increased their participation and enthusiasm. They stayed focused upon the task that they helped to frame. They seemed happy and relaxed.

The task and the structure of the teaching provided a good pace for pupils' achievement. The time constraints and the structure of the task provided incentive for the pupils. They responded well to this: demonstrating that they had the aptitude and perseverance to finish the task to their satisfaction.

Opportunities for the pupils to try out ideas and not be put down were extremely important. Pupils did not feel threatened and they were able to suggest and test out ideas with confidence. Discussion with the pupils also revealed that they felt they had real opportunity to make decisions and to stay committed to finding a solution. There was a great deal of satisfaction expressed when the products began to emerge. The sense of success grew when they were able to share what they had produced with the younger pupils in another class.

The teaching methods selected enabled pupils to work collaboratively. This helped pupils to gain confidence in their ideas and in trying them out and talking about their experiences. The discussions held produced support for the pupils to:

- evaluate ideas and experiences
- problem solve, with an emphasis upon the quality of ideas and solutions being produced
- complete the task with success, including the development and strategies of how to make the final product and the new making skills they had to master.

One important factor was that staff members know the pupils extremely well. They, along with the pupils, also know and use to good effect the communication methods adopted by the school and its community. This enabled the support to be given when appropriate. The temptation is to intervene. This task, and the way we set it up, meant we gave more freedom to the pupils. Through the structure they were able to demonstrate a good degree of independent thinking and decision-making. This cross-curricular project was developed for the purpose of creating a powerful and engaging context within which children could learn through natural curiosity, imagination, communication, cooperation and role play.

The benefits of creativity

This project and the way it was structured it enabled pupils to:

- raise their self-esteem, self-confidence and their achievement
- extend their communication skills and sense of independence
- feel valued by adults and their peers
- feel able and willing to express themselves, make decisions
- achieve their potential.

It was good to see pupils thinking for themselves, working together and making decisions. Staff need to stand back more and allow children to express themselves, to let them make their own mistakes, but in a supportive manner. This will come if we let pupils raise their own expectations. This can be achieved by providing more challenge and appropriate questioning rather than by providing inappropriate direction. Staff need to learn that they are not always right.

The project reinforced and encouraged good relationships among the pupils and between pupils and staff; there was a really positive climate. This enabled us to build upon the good work we have been doing on peer and self-assessment. The approach enables us to focus upon improvement rather than merely judging pupils. This is extremely important in a school such as ours!

We now need to look at how we can move forward, building creativity into policy and extending our practice.

## 'The Lothian Bridge'

by Pathhead Primary School, Midlothian Council

Focus: 5–14 environmental studies and technology

Class: Primary 6 and 7 – project spanned eight weeks with 75 minutes per week

The topic was a bridge design and it covered five two-hour sessions per week for four weeks.

The children were to research their project on the design of the bridge and present a design model at the end of the process.

### How it was organised and what happened

The aim was to provide pupils with the experience of a designing and making challenge using specified materials. They were given timescales and required to meet certain criteria.

Their product was to design and make a bridge, with a partner, with a given span using specified materials at given prices. The bridge was to hold a certain weight at the middle point of its platform.

Prior to the design task the pupils visited the Forth Bridge and local arch bridges. They studied and discussed features and properties of different types of bridges using a model-making kit. They researched a real-life designer and, with a partner, over three weeks drew up a poster about the work of the bridge designer of their choice and presented it to their class.

From the beginning of the project the pupils had the opportunity to gather information and learn from other experiences, before attempting to build their own designs. They had access to related information, books and websites. There were high-quality building materials available, including appropriate tools. The children had the opportunity to try out six different designs using customised modelling kits. In their assessment, they had the opportunity to try and test out their own design; and to learn from others and evaluate their design attempts.

### Reflections on how creativity was encouraged

A whole day visit to the Forth bridges at the outset of the programme made the project real. This was the springboard that made classroom-based learning highly meaningful and relevant.

We found that the pupils' motivation was enhanced because of the real-life experiences. They had marvelled at the massive structure of the bridge, they had studied and drawn part of the bridges, they had interviewed people who helped to operate the bridges and they had visited the control room of the Forth Road Bridge. So back in the classroom there was a very systematic and structured analysis of the features of different designs, and the reasoning behind them. Research, experiments and investigations were carried out to test or to prove

points. They were able to see the connection between their own prior learning and how this informed their skills to tackle their own design challenge. This was a very high factor in determining motivation.

Planning was a critical factor and this took longer than we had anticipated. A time ratio was adopted to encourage input of high-quality thinking. This was a ratio of nine to planning and one to making. The most successful designs were achieved by pupils who kept closest to this ratio.

Each group presented their design effort. Their peers asked appropriate questions and gave helpful feedback.

At the end the pupils recorded what they had learned through their five weeks' experience and compared these comments with their starting points. They were genuinely amazed at their own achievements.

## 'Creating the future'

by Eastfield Primary School, Midlothian Council

Focus: technology, English language and personal and social development

Class: Primary 2 – three lessons, each 45 minutes

Following work on the topic 'the street', working collaboratively, children were challenged to create a building of the future. Specifically the teacher wished children to use language and pictures to plan and complete the project. Children were also asked to encourage participation by all in each group. A requirement made clear from the outset was that each group would present their work, and their completed model, to the class and the adults during the third lesson.

### How it was organised and what happened

The aim was the development of collaborative learning. To enable this to develop the teacher organised the pupils into groups of three. Being aware of the need to support and monitor work as it progressed, she received the support of two other adults. This led to there being one adult to three pupil groups.

The stimulus for thinking and the generation of ideas was provided by a creative display of buildings from around the world. A clear structure for the three lessons was worked out. This was not seen as being inflexible, merely to provide clarity for the children and to ensure there were some plans to support pupils in their creative working. This structure included an expectation that pupils would present a clear plan and design of what they wished their building to be and why, by the end of the first session. Resources, and in particular the adults were there to support pupils so that they could achieve this requirement. Building to the plan was the focus for the second lesson. The final lesson was structured toward supporting pupils' presentations and project evaluation.

The task was issued by the teacher as a challenge, which treated each group as a prospective building group. Pupils enjoyed this approach and responded with enthusiasm.

Following a period when children asked questions about the task and what they were expected to do and how they could work, they moved into their groups to begin to work toward producing their plan and design. The same resources were provided for each group: namely a large sheet of paper, some paper adhesive and pens and pencils. Groups also had access to suggested building materials, all of which they had talked about before during their topic work.

Having to involve all members of the group in generating ideas and the requirement that there was joint decision-making caused some groups difficulty. The debate and negotiation produced a high quality of interaction as ideas were discussed and adapted. The process took some

considerable time and the lesson had to be allowed to run on to accommodate the social learning, which was clearly beneficial.

Research data was collated from observations pupils made and from their discussion with adults in the room. The depth of discussion amongst the children was interesting. The ratio of adults to groups allowed for close scrutiny of the group negotiations and monitoring of the interactions between group members. Observation of groups took place as did much open questioning. Particular attention was paid to eliciting from pupils the reasons for decisions being contemplated and made.

Overall, the quality of the designs and the work plans produced by the pupils was good. This was put down, in part, to the structured support of groups available throughout lesson time. A great deal of imagination had gone into the designs.

Teaching in the second lesson emphasised pupils' previous experience in working with materials. The class was provided with found materials. Each group was asked to produce a model of their design using their work plan produced in the first lesson. Discussions on how textures and colour can be used to model real materials took place.

During the practical work, in which there was much talk about the best way of doing things, pupils referred to their plans and were encouraged to solve problems they encountered. Pupils could ask for support and when requested it was provided by adults, mostly through questioning and occasionally by making a suggestion.

Pupils appeared to be very aware that they had to present their work and the model and appeared to accommodate this into their work, discussing with other team members every detail as they progressed.

For the presentation the teacher provided a set of guidelines that each group used in their final preparations. This was provided as a set of questions including:

- 'What type of building is it?'
- 'Who made the building?'
- 'What materials would the building be made from in real life? Why?'
- 'What are the main parts?'
- 'What is inside?'

Each group chose to present their work in different ways. Time for questions was built in, encouraging critical thinking and positive feedback. This was received well. The children showed a huge sense of pride in their achievements.

## Reflections on how creativity was encouraged

### Encouraging creativity

The task was really interesting to the pupils. They did not waiver in their enthusiasm to come up with their suggestions and their solutions. Key to the success of the task was its real-world nature, authentic to the children.

The group work was interesting. Observation made by adults included the following.

- The structure of the task and the support given enabled pupils to use previous experiences creatively, and enabled many to build upon previous learning with confidence.
- Negotiation and the clarification of rights took place in some groups. This was done through democratic means in response to the requirement that all members of all groups were involved in all aspects of creating ideas and decision-making.
- Even though there was guidance for groups to consider windows, doors, roofs, etc., pupils had freedom and many showed considerable imagination when suggesting ideas.
- The mixed-ability, mixed-sex groups worked well. Once the groups had begun to focus more upon the task and less on each other, there was a considerable amount of support for individuals being provided by the children themselves.
- Some children, who might have required help in other circumstances, were noted as being particularly strong negotiators, providing much peer scaffolding.

Each group chose to present in different ways. Feedback came from children and the adults present. This allowed all children to reflect upon their achievements, in particular what they gained from working collaboratively and the enjoyment and motivation expressed throughout the task and in producing their suggestions for a building of the future.

Assessment was undertaken through:

- observation of the group work, and in particular the way in which each group responded to the challenge of involving all members in the generation of ideas and in decision-making
- evaluation of the product and of the presentations.

### The benefits of creativity

The teacher's confidence in letting the children expand upon tasks, and to experiment within the remit of a lesson, was enhanced by this experience. More time was provided for children to air their views, to experiment and to talk about their experiences.

The children responded well to the challenge of presenting their work although they were only 6 or 7 years old. They spoke strongly, with obvious enthusiasm. They appeared motivated to express themselves and listened to others with focused attention, asking valuable questions when the opportunity arose. It was very rewarding to witness children responding with open communication, between themselves and with adults. They all produced high-quality, finished products of which they were extremely proud and could talk about at length.

## 'Biodiversity for all'

by Longforgan Primary School, Perth and Kinross Council

Focus: interfacing science and the arts

Class: all pupils from a small rural primary school

This project is a collaboration between the primary school and its associated secondary school. The theme of biodiversity was agreed and there was a series of workshops on art, drama, dance and music to illustrate the biodiversity theme.

### How it was organised and what happened

The aims of the project were to promote science and the arts and to raise awareness of the possibilities for integrating both curricular areas. It was important that there would be fun and excitement as well as developing informed attitudes about biodiversity in the community.

The intention was to encourage creativity, initiative, responsibility and interdependence.

Before the event the science teacher from the secondary school visited the primary school and talked to the children in Primary 4 to Primary 7 about biodiversity. This led to further work in the class, including home activities. Primary 4–7 pupils buddied Primary 2–3 pupils and together produced information leaflets on biodiversity. Pupils spoke on the theme at assembly. Posters and information leaflets were displayed around the school.

This activity led to an evening event involving the children, visiting specialists and the teachers. There were workshops in each of the areas of music, dance, art and drama. The pupils were challenged to produce a presentation to an audience of their peers, teachers, parents and members of the wider community.

Pupils chose which of the workshops in which they wished to participate. They worked with the volunteer teacher to consider how they could portray their theme through their chosen expressive art.

On average pupils spent about four hours in pre-event activities leading up to the 45-minute workshop, the outcome of which was presented to the parents and wider community.

### Reflections on how creativity was encouraged

Staff worked with the pupils facilitating them to learn through team working, problem solving and self-evaluation. The children were encouraged at every opportunity to be independent learners. The children were given information on the theme and thereafter initiated all the ideas themselves with guidance from the staff, which was mainly to do with organisation. Pupils brainstormed, buddied, planned, experimented and decided on final ideas.

In terms of the product outcome, the presentations at the end were of a high standard and were well received. The standard of the final presentations was evidence that the pupils had solved their problems, met the challenge and task specifications. Team working was evident throughout, but especially in the final presentation with all the children working together to produce it. The encouragement of adults was important to the children.

#### Benefits of creativity

Creativity promoted a positive class and school climate by giving the children the opportunity to express themselves, to be independent and responsible learners, and to gain pride in their achievements. They have been able to develop skills in team working, communication and leadership. The pupils and adults were working together on a range of activities. Importantly, there was an increased enjoyment and fun of the school experience.

For the teachers and other staff it increased the understanding and value of creativity and gave it a higher profile. It showed teachers what is meant by creativity and that it is not necessarily only covered by the expressive arts. It has given the teachers the confidence to allow the pupils to be more creative. The teacher recognised the benefits of fostering creativity in, for example, a more positive ethos, development of pupil confidence and esteem, and improved relations with the parents and the community.

There has been improved pupil consultation and more acceptance of talking with pupils rather than at them or to them. There is increased use of buddying and of independent learning.

## Creativity portraits of practice

School:

Local authority:

Contact name:

Contact details:

Title of project:

Who was involved (pupils, teachers, members of the community, etc.):

Timescale for the project:

Subject/curriculum areas covered by the project:

Brief overview:

What happened and how it was organised:

Reflections on what happened

- Encouraging creativity

- On the benefits

When completed please forward this to:

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