



WWF SCHOOLS' CASE STUDIES SERIES

Working towards Education for Sustainable Development

**Music for better teaching – and a better future**

This case study looks at how music can be used to explore and improve learning about the environment (using water and energy/recycling themes) whilst enhancing personal and global awareness. By reading on, you will discover how these threads were professionally interwoven to provide a context for pupils' learning, thus making a connected whole for the learners. A variety of learning outcomes is illustrated. Some are highlighted on page 10, making the link with those listed in the introductory booklet to these case studies - **"Working towards Education for Sustainable Development"**.

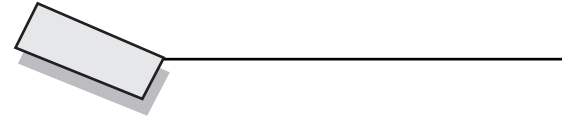
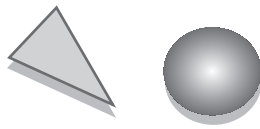
# Environmental Studies – magic with music



**Pupils playing their homemade instruments**

The deep tones of a laboriously played scale on a euphonium or the steady beat and intricate rhythms being practised on the drums are likely to be heard wafting on the air at Roy Bridge Primary School, Lochaber. From the Infant classroom, there may be strains from an instrument that is unrecognisable: not unpleasant, but certainly different. This is one of the homemade variety, as yet not on the market, played and made by these youngest ones; giving them enormous pleasure and satisfaction.

At Roy Bridge Primary School, we aim to make singing and music-making as natural to the pupils as falling off their chairs or riding their bicycles. From P1 (5-6 years), the children in this two teacher school in the Highlands are given every opportunity to express themselves through the medium of music. Most children play an instrument by the time they reach P4 (8-9 years). Music spills over into many other areas of the 5-14 Curriculum beyond its formal place within Expressive Arts, and nowhere more effectively than through Environmental Studies (see 'Background' on page 12).



Roy Bridge is just an ordinary village school and the children are no more musically gifted than any similar group of children. However, as teachers, we firmly believe in the value of music in enhancing many aspects of learning. We have found that it encourages discipline and self-awareness; stimulates memory; aids understanding; promotes self-discipline, and encourages co-operation and communication with others. Through music, children learn in an enjoyable and active way. It provides a powerful platform for delivering messages – and for receiving them. It is an ideal tool in the Environmental Studies programme, where developing informed attitudes for life is an all-important strand for teaching and learning.

***“Underwater World” song***

*“You have seen our garden, our underwater world,  
A paradise of beauty gently was unfurled.  
Now you’ve met the creatures, seen life beneath the foam,  
Help us keep the wonder of our beautiful deep sea home.”*

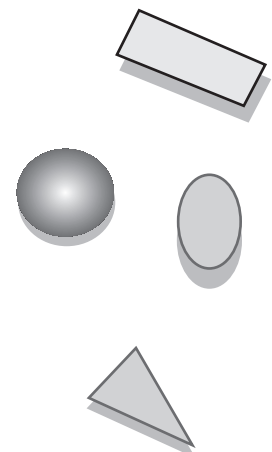
“Music provides a powerful platform for delivering messages – and for receiving them. It is an ideal tool in the Environmental Studies programme, where developing informed attitudes for life is an all-important strand for teaching and learning.” *Teacher*

**Music with everything?**

Music brings life and colour to even the most unlikely topic: it is a magical ‘mixer’. In our recent Bright Sparks projects on ‘People and Water’, and subsequently through Generators (a Bright Sparks extension programme encouraging schools to develop their projects or develop new ones – see ‘Background’ on page 12), we adopted musical approaches wherever we thought it helpful to do so. What follows is an account of how we went about it, and some ideas that you might adopt, or adapt, for your own situation.

Music can be as simple or as complicated as one likes. Straightforward chants and rhythms can be as effective as more elaborate compositions. Here are a couple of approaches we use to enhance topic work:

- **Raps:** We often use raps with a strong rhythmic beat in our project work. The older children especially enjoy this method and learn easily from it. It is particularly suitable for narrative work and the children have composed many raps themselves. There are usually opportunities for individual children to speak a single word or a line, and this is both popular with the children and adds variety and interest to the overall effect. The clicking of fingers can help keep a steady pulse. We introduced our ‘People and Water’ project with a rap describing how it all began with the painting of the old bicycle shelter.





Us and our underwater world mural on the bike shelter

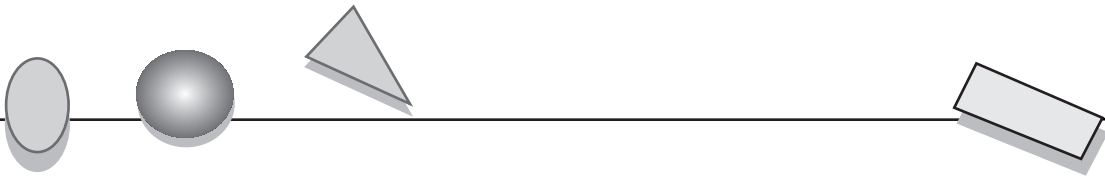
Some excerpts from our rap...

*"When James's mum came up to school,  
She said 'I've got a plan,  
That bike shed is an eyesore,  
Let's paint it if we can'.  
The children met and all agreed  
The plan was really great  
For the corrugated iron shed was in a sorry state.  
'Let's paint the hills!', 'Let's paint the trees!'  
Ideas came thick and fast,  
But creatures of the ocean deep  
Were decided on at last.*

*Then puffins, gannets, cormorants,  
Came diving from on high,  
And leaping dolphins in their play  
Arched up against the sky.*

*An ocean paradise we made,  
Of life, in colours bright,  
Now all who pass, stop by and say  
'It is a brilliant sight'.  
For the ugly, rusty bike shed  
That stood beneath the tree,  
Has been transformed to a living world,  
A kaleidoscopic sea!"*

- **Spoken verse:** For P1 (5-6 years) to P3 (7-8 years), I find an ideal way for the children to absorb lots of facts is to put them into verse form. Let each child take a line and perhaps have them all coming together for the final few lines or punch line. It works a treat! Speaking with accompanying actions, the children absorb a great deal of information quite painlessly, without even realising they are learning. Although they may only have one line each to learn, they soon know the whole verse!



## **Water**

*Philip: Water for the bath,*

*Eirinn: Water for our showers,*

*Martainn: Water for the washing up,*

*Alasdair: Water for the flowers.*

*Donnie: Water for the kettle,*

*Aaron: And a nice cup of tea.*

*Jamie D: Water for my dirty hands, so they're  
clean as clean can be!*

*Craig: Water for the dishwasher,*

*Jamie R: Water for our pets.*

*Rufus: Water for the cooking, carrots and courgettes.*

*Cahal: Water for the fish tank,*

*Catriona: And for flushing down the loo.*

*Jennifer: Water for the washing machine,*

*Jodi: And for brushing my teeth too!*

*All: Water, water everywhere, so much we use each day.*

*But if we had to carry it, would we throw so much away?*

"...'musical poems' are useful ways of communicating information at assemblies, where whole-class participation is important but preparation time may be limited." *Teacher*

Both the spoken methods described above can be enhanced by some simple instrumentation. Perhaps use instruments for sound effects or for emphasising the beat. I find these 'musical poems' are useful ways of communicating information at assemblies, where whole-class participation is important but preparation time may be limited.



## **Adapting tunes to suit...**

The non-specialist music teacher may tend to shy away from teaching songs and tunes, but again you can keep things very simple.

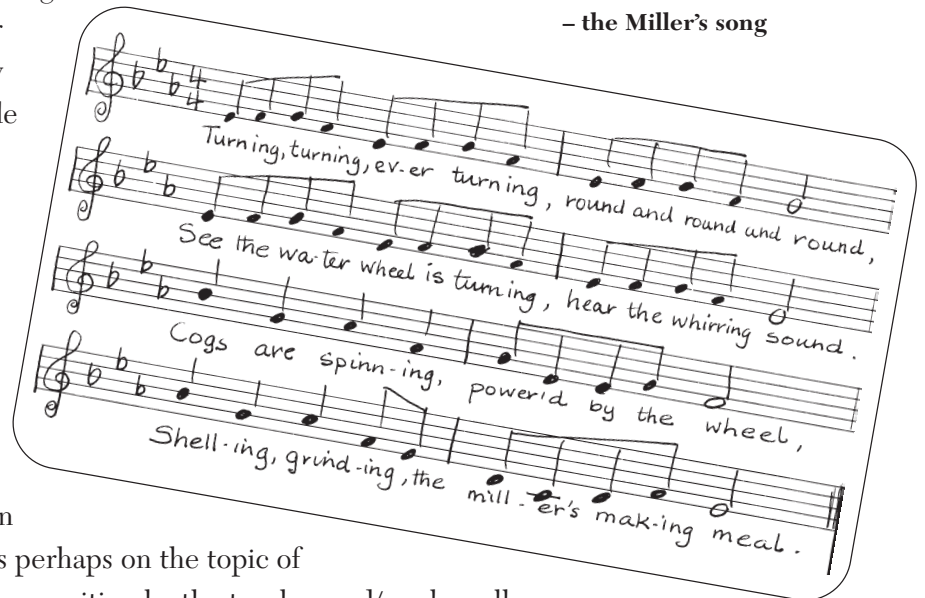
- **Rhymes:** Why not take a well-known tune, a nursery rhyme perhaps, and adapt the words to suit. On the theme of 'People and Water', my class enjoyed singing these words to the tune of "Here we go round the mulberry bush", together with a few simple actions:

*"This is the way we turn the tap...  
This is the way we wash our hands...  
This is the way we brush our teeth...  
This is the way we swim in the sea...  
This is the way we splash in a puddle..." etc.*

- **Action Songs and Rounds:** Children love action songs and where the tune is kept simple, they can concentrate on doing appropriate movements. We devised our own simple action song for our study about hydro-electricity. The younger children simply sang it through, using their arms to imitate the turning wheel of the water mill. The older children were more challenged by singing the song as a round. Simple sound effects were added by brushing their hands in a circular motion over a piece of cardboard.

“Turning, turning...”

– the Miller’s song



**...or composing your own**

There are plenty of songs available on environmental themes but not always perhaps on the topic of the moment. We have realised that composition by the teacher and/or class allows not only for all-important pupil involvement, but also means the music can focus directly on particular aspects of the topic.

For instance, in our investigation of hydro-electricity, we wanted to sing about the monks at Fort Augustus Abbey who produced one of the earliest electricity supplies in Scotland. Not much point looking in the music catalogues for that! So, we wrote our own words and put them to music. Again, some difficult concepts and language seemed to be no problem, even to the youngest child, when presented in a musical context – as a song.

We are fortunate at Roy Bridge that both the head teacher and I can read and write music and play the piano. It is, undoubtedly, an advantage. However, the lack of such musical skills should not be a major obstacle, nor should it deter any teacher from taking a more musically adventurous approach.

If there is a visiting music specialist, or a pupil or parent with musical skills, enlist their help. Ask them either to write down the tunes or perhaps to record themselves playing on the piano on a tape for the children to sing to later. The skills of individual, musically-gifted pupils should not be underestimated. I asked a P7 (an 11 year old) boy, a fluent pianist and cellist, to write a tune for a song we had written in class about the workmen (known as ‘navvies’) working on the nearby Laggan Dam – “The Navy’s Song”. It was excellent and the children loved it.





## Working together

In a school of 33 pupils, it is possible and, indeed, desirable that at times they all come together to work; similarly it can be done in a class of the same size, or even for a combination of such classes – a whole year group. Since our ‘People and Water’ project was a whole school study, it was even more appropriate that we shared some of our experiences. An original dramatic action song – “Underwater World” – proved the perfect opportunity for all age groups to work together.

With the children themselves making numerous suggestions, we actually composed two versions of the song on a similar theme. In the first version, the children sing and act out the different underwater creatures in costume. In the second, the children sing and accompany themselves on instruments. The children performed both versions at the local Music Festival to large, appreciative audiences.

The value of this sharing was soon apparent. The children worked in mixed age groups and the P3 seaweeds (7-8 year olds) were soon swaying as gracefully as the P7 ones (11-12 year olds). The P1 shoals of fish (5-6 year olds) were shown how to twist and wriggle by their older brothers and sisters, and the young puffins took no time at all to copy the older ones in tossing sandeels in their beaks, while waddling around the stage! There was a great sense of togetherness and of each individual contribution being an important part of the whole.

The instrumental version provided further opportunity for shared activity but also took into account individual talent and ability. So the tiny P1 (5 year old) cellist played just a few notes carefully but to great effect, whilst the more advanced P6 (10/11 year old) pupil performed a most haunting melody in the “Whale’s Song” on his cello.

The beauty of original composition is that one can write for particular children in the school/class. You can assess their needs and abilities and allow them the chance to take part at their own level. In this way, everyone feels useful and needed. In the event, every child played something; the P1s (5-6 year olds) using old film canisters filled with rice and peas as maracas. At the same time, they were learning another important environmental lesson on saving energy – reusing and recycling!

for a puffin likes nothin' more than a tasty fish.  
And a beak that's full for stuffin' is every puffin's wish!



### Excerpt from the “Puffin Song”

“The value of this sharing was soon apparent... there was a great sense of togetherness and of each individual contribution being an important part of the whole.”

*Teacher*

The outcome of these two musical activities was very obvious. In a disciplined but enjoyable way, the children were learning so much about the various sea creatures: their habitat, lifestyle, appearance, peculiarities, feeding habits and lots more. They had not made a conscious effort to learn, though – it just happened, as easily and naturally as it did for them to learn the songs.

**Links with Developing Informed Attitudes and Education for Sustainable Development**

We take great care within the school to raise an awareness of the need to live more environmentally sustainable lives; participating in activities demonstrating how this can be done and integrating it into school practice generally. The 5-14 Environmental Studies guidelines provide many opportunities within which environmental, as well as social and economic awareness, can be developed. This can be a useful basis on which to build a climate for developing informed attitudes. Occasionally, and we hope increasingly, these attitudes will lead to action – stemming from a desire to change what has been going on as a normal but, we now realise, less sustainable practice.

**Reducing our impact – to creative effect**

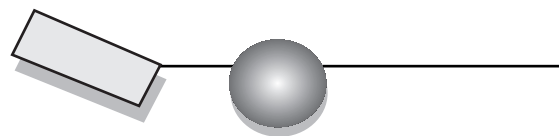
During our 'People and Water' project, the need to conserve energy and reduce our impact on the environment was also discovered. The children found that a good way of doing this was to reduce our consumption of materials, and to reuse or recycle materials as much as possible. As a result, we have set up a recycling centre at school. Here, likely items of waste material are collected, sorted and stored for use, for example, in our Expressive Arts or Science work. In particular, we have been making our own musical instruments from what was just 'rubbish', and for which we have now found a new use.

The children are amazed themselves at the lovely instruments they can make – where time, imagination and some bits of 'rubbish' are the only resources used. The 5-8 year olds use cardboard tubes, balloons and old newspaper to construct sturdy, colourful maracas. I watch, fascinated by the absorbed expressions as the children work, and by the increasing nimbleness of their fingers as they master the technique of papier mâché.

"I would hear snatches of tunes being hummed quite spontaneously in the classroom and gradually they would be taken up by those around until the whole class was singing the song with great gusto and obvious enjoyment. They still sing the songs and mums tell me they do at home too. This is how I know for sure the value of these activities and why I believe music helps children remember things they have learnt – far longer and more vividly than they might otherwise do." *Teacher*

**Making our maracas**





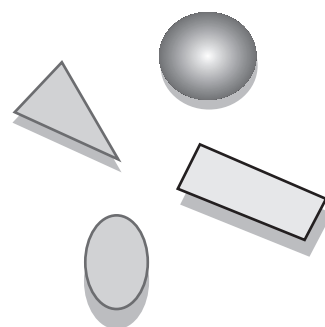
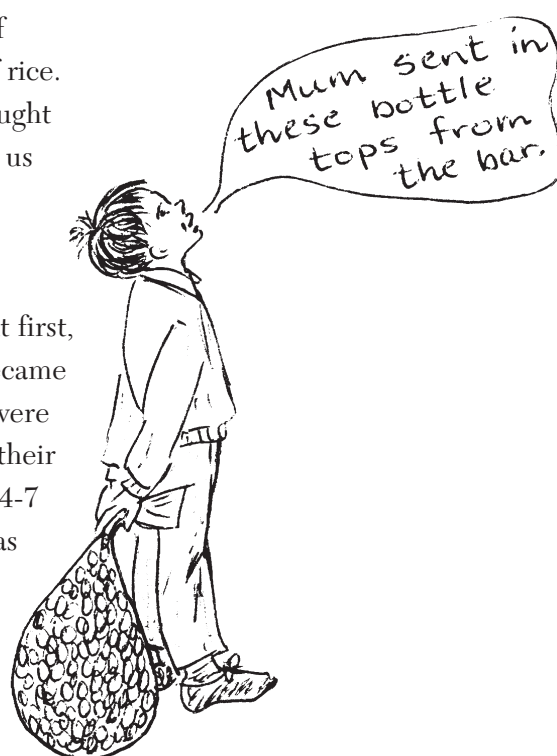
The finished product!

By varying the filler materials, they are able to produce a range of sounds, from the low rumble of nuts to the high pitched shiver of rice. Sixteen maracas filled with eight different sorts of fillings (all brought from the food cupboard because they were out-of-date) provided us with a reasonable octave of ascending sounds – not quite a scale, but not far off.

We worked out the tune of “I hear thunder” using the maracas. At first, we sang “pasta, peas, barley, pasta...”. As each pair of children became familiar with when it was their turn to shake their maracas, they were able to sing the words of the song and accompany themselves on their own hand-made instruments. This was no mean achievement for 4-7 year olds and their pleasure at realising it was immense. There was the added satisfaction of feeling they owned the sound because they had made the instrument – a good reason for full participation.

Meanwhile, the older children (8-12 year olds) have also been very busy with a ‘load of rubbish’. They, likewise, have produced some very attractive working models: guitars from tissue boxes; maracas from washing-up liquid containers; drums from papier mâché, and beautifully decorated rainmakers. The instruments do take a great deal of time to make as there are various stages in their development – at least four or five layers of papier mâché for the maracas and drums, and the designing and printing of their decorations. However, we have no doubt the final product, and the learning and skill outcomes for the children, are well worth the time, effort and patience required.

We have since made many more and different instruments – including the slipper pipes! The instruments have been used in presenting an original musical drama on the theme of ‘rubbish’ (a Generators project which will be the subject of another case study from Roy Bridge), taking our message to all the Primary Schools in Fort William. It is through





involving the children in such music-based projects that we are able to encourage them to think about things and understand the importance of sustainability in our world. In particular, they seem to understand the need to minimise our consumption (and resulting waste) of the planet's resources, both as individuals and collectively in society.

**Music – a language understood across the globe**

Allied to these and other projects is our on-going liaison with Kakamega School in Kenya. The children have corresponded with the Kenyans for over a year now and there has been a valuable exchange of information. The children are coming to understand the similarities and differences that exist between the two countries – social, cultural, environmental, technological and economic.

Most recently, the Roy Bridge children have written to their Kenyan friends describing their recycling project and the instruments they have made. They have asked for information and advice regarding African musical instruments. We know they are masters of recycling materials and this no doubt applies to the instruments they use. So far we have been sent some pictures of their instruments, together with descriptions and explanations of their uses.

The Highland youngsters have learnt that their Kenyan counter-parts have fewer possessions. They will therefore not be surprised to hear that the Kenyans have no formal or bought instruments. This knowledge will help them view their own violins, flutes and trumpets with new eyes, and to appreciate their own good fortune in having such instruments so readily available. (Further ideas on associated themes can be found in the case study “Developing an understanding of sustainability through music”.)

The exchange is also developing their growing awareness of global and social justice. They see their Kenyan friends enjoying a good quality of life without the possessions they, themselves, have taken for granted until now. Thus, they are beginning to appreciate the difference between standard of living and quality of life. They are so proud of their homemade maracas (which their Kenyan friends might take for granted) that they have sent some to them, as well as to children in Romania whom they are sponsoring.



**Euan (P1 pupil) shows Father Alfred, visiting from Kenya, his pine weevil**

“We have really enjoyed learning about life in Kenya and we are going to write to our friends in Kakamega telling them more about life in Scotland...”

*Roy Bridge pupil*



## **What's this got to do with Education for Sustainable Development?**

Some important learning outcomes achieved and built on throughout the project:

### **Knowledge and understanding**

- about natural processes (the water cycle)
- about the diversity of living things (...dependent on water)
- about the needs of animals and plants and the ways they adapt to their environment
- about the ways humans use and manage resources (specifically water) to meet their needs, and the environmental impact of such activity – locally and globally
- what is involved in providing for human needs and wants
- how everything we do is connected to and impacts on the natural environment
- how our lives and actions connect with those of others – locally, nationally and globally.

### **Skills**

- co-operative working
- communication – using words and actions
- information handling and interpretation
- using memory
- problem solving
- creativity – using music, words and hands
- informed decision-making
- application of practical skills.

### **Values and attitudes**

- encouraging self-awareness and how each of us affects others
- encouraging self-discipline and respect for others' points of view
- a desire to participate
- a sense of identity and self-esteem
- a commitment to the well-being of all living things
- an understanding that 'quality of life' is not just dependent on 'standard of living'
- a commitment to social justice and equity
- a belief that working together, people can make a difference
- a belief in a positive future.

**Who hears the message?**

Parents, friends and the village community at large are fully involved in our activities, and music provides a wonderful opportunity for communicating in an enjoyable, entertaining manner. Concerts in the Village Hall and at the Lochaber Music Festival provide both small and larger local platforms for presenting our dramatic action songs, such as “Underwater World”, “The Song of the Birchwood” and others of an environmental nature. As with the children, the audiences are left with important messages buzzing in their heads. The families are also involved in the collection of reusable waste materials and soon learn about sustainable living from their enlightened offspring!



**Performing our  
'Underwater World'  
musical drama**

**When you sing, people understand**

We have taken our environmental messages via music to other Lochaber schools. We plan to provide a professional development session for local teachers as part of the Live Wires programme – an extension of the Bright Sparks Award whereby a small number of schools are supported by WWF to share their Bright Sparks experience with other teachers and schools, in a variety of ways. We will continue to use the voice of music because we find it such a powerful and effective means of communication. In the words of a song heard recently:

There are many other ways we incorporate music into the life of the school. Perhaps what is most uplifting of all about our music-making is the sheer fun and enjoyment it engenders – and the enormous sense of achievement. We can all take part and we can share it with others – and isn't that, after all, at the heart of Education for Sustainable Development?

*“Music speaks louder than words,  
It's the only thing that the whole world listens to.  
Music speaks louder than words,  
When you sing, people understand.”*  
*(from a published tape recording of songs sung by Mary O'Hara)*

**M**EMORY

**U**NDERSTANDING

**S**ELF-DISCIPLINE AND SELF-AWARENESS

**I**NFORMATION HANDLING

**C**O-OPERATION, COMMUNICATION AND CONFIDENCE

### Further information

For copies of this and other Bright Sparks case studies, or for information on current initiatives for Scottish schools, please contact: WWF Scotland, 8 The Square, Aberfeldy, Perthshire PH15 2DD.

For information on the full range of titles within the WWF Schools Case Studies series, please contact: WWF-UK, Panda House, Weyside Park, Godalming, Surrey GU7 1XR.

### Valuable resources

Most of the inspiration for this project came from the children themselves as a consequence of the variety of people who visited the school to speak with the children about aspects of their project, and the many visits made by the children to local sites.

### Acknowledgements

Case study written by Lynnette Borradaile, based on a report written by Margaret Sargent, class-teacher at Roy Bridge Primary School, Roy Bridge, Inverness-shire. Published by WWF-UK on behalf of WWF Scotland. © WWF Scotland, May 2000. Registered charity no. 201707.



WWF -UK  
Panda House  
Weyside Park  
Godalming, Surrey  
GU7 1XR  
tel 01483 426444  
fax 01483 426409  
www.wwf-uk.org

WWF Scotland  
8, The Square  
Aberfeldy  
Perthshire  
PH15 2DD  
tel 01887 820449  
fax 01887 829453

### The School and its project

Roy Bridge Primary School is a two teacher, 33 pupil school in the Lochaber district of the Scottish Highlands. With an annual rainfall of between 1,000 and 4,000mm (depending on the altitude), water is a prominent feature of the pupils' lives, and the livelihood of the local community. Their first Bright Sparks project on the theme 'People and Water' in 1997, considered many aspects of the importance of water in our lives including a study of local streams, rivers and sea lochs, and issues of water pollution. Following on from this successful project, and as so much of the pioneering work of hydro-electric power was carried out in the area, the school decided to investigate further in their second 'People and Water' project the following year. Both projects were awarded runners up in the Bright Sparks Awards.

Although the magic of music is the theme of this case study, the project involved a huge variety of other study – including History, Geography, Science, Technology, Mathematics, English, and Personal and Social Education. Classroom work was balanced with a number of visits locally and further afield to experience firsthand even 24 hours without electricity. Their investigations took the pupils from an overnight stay in a Lochaber glen, to a number of hydro-schemes; from the earliest to the most modern. They also went to see associated industries dependent on water power: flour mills at Bunroy and Blair Atholl; evidence of the old Fort William Electric Lighting Company, and Alcan UK, the aluminium smelter near Fort William. A wonderful blend of research, visiting speakers and 'hands on' experiences led to much effective, enjoyable and exciting learning.

A confidence based on a feeling of self-worth and belonging is abundant amongst the children. This is a sound foundation on which to build a greater awareness of global issues, feeling positive about the future, and an ability for critical thinking and analysis of some complex concepts.

This case study aims to share some insights into how a small rural school has taken up the challenge of ESD – the real world relevance behind Environmental Studies, and hopes to stimulate others to take these or other ideas forward.

*For further information about this project, contact Margaret Sargent, Roy Bridge Primary School, Roy Bridge, Inverness-shire PH31 4AG.*

### Background

This case study is one of a series published by WWF-UK. Each one describes aspects of work undertaken by schools across the UK, whilst involved in WWF professional and curriculum development programmes.

In Scotland, support was provided through the Bright Sparks Award Scheme – managed by WWF Scotland and sponsored by Scottish Hydro-Electric – between 1996 and 2000. The scheme focused on the 5-14 Environmental Studies national guidelines (for those outwith Scotland, this is the curriculum context for teaching Science, Social Subjects and Technology) which provide an opportunity for integrating the principles of Education for Sustainable Development. In particular, the scheme aimed to stimulate good policy and practice demonstrating ways to integrate the 'Developing Informed Attitudes' strand within the guidelines. This is one way in which WWF helps develop ideas for new teaching and learning approaches – equipping students for thinking about and acting in ways supporting the goals of sustainable development.