



WWF SCHOOLS' CASE STUDIES SERIES

Working towards Education for Sustainable Development

Can the concepts that underpin Education for Sustainable Development (ESD) be made relevant to pre-school children? Staff at Raigmore Nursery in Inverness have risen to the challenge and developed a simple thematic framework for learning that provides many opportunities for the development of informed attitudes.

This case study explores how a series of familiar nursery themes can be linked by the common thread of 'environmental number' to encourage pre-school children to appreciate mathematics as a natural part of their everyday lives. Combined with a high expectation of what the pupils might achieve, this approach allows very young children to explore options and begin to make informed choices at a surprisingly sophisticated level.

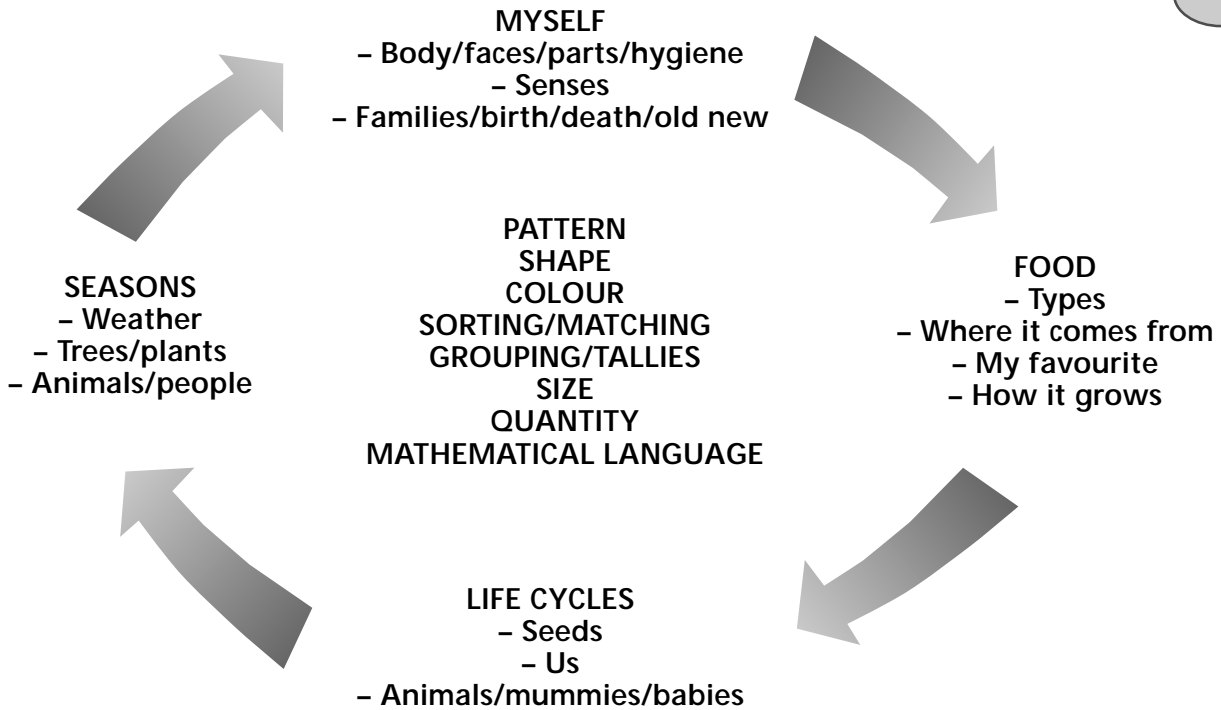
# We all count

## Setting the scene

The first few weeks in nursery are daunting for any child, but at Raigmore we faced additional challenges in that many of our children move abroad in the spring and summer terms, and this can lead to an unsettled class environment. We felt that we needed a framework for learning that would provide continuity of experience and develop citizenship skills in order to give the children a sense of place in the classroom community. Past experience at Raigmore had highlighted the link between Environmental Studies and numeracy. Shopping, baking, bathing and splashing in puddles were identified as common home experiences that involve early pre-number skills. Based on these observations, we developed a series of mini-topics linked by a common thread which we called 'environmental number'.



## GROWING – WHAT AND HOW WE GROW



Each area of the topic web focuses on an aspect of environmental investigation and within that area there are activities that are based on common experiences. All of these everyday experiences involve use of maths. The centre of the web indicates relevant pre-number skills. We start and finish with 'Myself', shifting the emphasis from personal to communal responsibility for the environment.




**Empowering the children**

From the start, the children were given opportunities to explore and experiment with resources in a secure and happy environment. The early setting up of class rules also established an open forum for discussion. It was hoped that the children's growing range of skills would lead to a sense of empowerment and high self-esteem. In turn, these would help them to appreciate the impact that their actions have on the world around them. By adopting this approach we found that nursery children quickly and naturally come to assume that they have a right and a responsibility to be involved with others in caring for their immediate environment, whether indoors or outside.

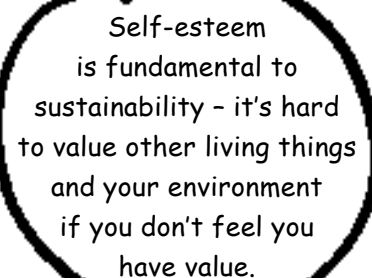
**Encouraging active learning**

We encouraged the children to take responsibility for their own learning through an active learning process, where investigation naturally led to problem solving skills. Practical methods used to start any investigation/exploration were always grounded in familiar activities that could be extended through the use of books, videos, photographs, games, and art and craft activities.

For example, we planted seeds, watered and cared for them using photographs, books and plants to stimulate thought and further investigation. We then examined soil, mixing it with water and observing its separation. We followed up this practical investigation with the provision of small world scenarios involving a variety of props that were linked to plants and planting. The children started to ask lots of questions about food, farming and the weather. A visit to a nearby wooded area allowed the children to use their senses to gain first hand experience of growth and decay of plants in their local environment. Active learning of this kind is progressive and can be extended continuously to become a very useful springboard for future learning. Most importantly, it allows the children to gradually make connections and build up concepts.



Involve children when starting up class rules - it's empowering and encourages awareness of rights and responsibilities.



Self-esteem is fundamental to sustainability - it's hard to value other living things and your environment if you don't feel you have value.



### Education for Sustainable Development in action

It would be impossible to describe all of the changes and responses that have occurred throughout the year. However, the following examples capture some of the outcomes that have surprised and delighted both parents and teachers.

#### Increased awareness

The children have developed a heightened awareness of their local and global environment. Parents have recounted stories of their children confidently (and sometimes embarrassingly!) displaying their knowledge of vegetables to any willing listeners in the supermarket.

#### Health promotion

The children have developed a very good understanding of the importance of hygiene and healthy eating. Our theme, 'Looking after Ourselves', culminated with a visit to a Dental Fair run by Highland Health Board. Afterwards there was an increased demand for milk at snack-time and the parents also reported milk became more popular at home.

#### Maths in fun!

There has been a very noticeable increase in mathematical awareness. Small world and construction play has involved sorting/matching, categorising according to colour, size, pattern and function. Often the children are so engrossed in solving a problem that they have been using maths without realising it.

Role play helps young children to explore complex issues and to develop empathy.

Active learning approaches help children to make connections and build concepts.

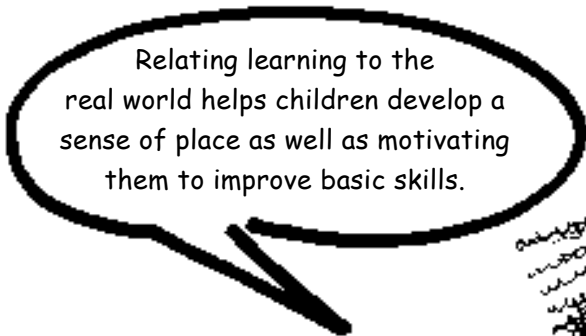


"That's a vegetable you know, it grows in the ground. In our fields here you know. That's broccoli – it's really good for you – did you know that?"

*Stephanie, age 4*

**Citizenship skills**

The children developed a sense of self-worth and value as a member of the class community by expressing choices, planning and taking part in decision-making. This growing collective responsibility was expressed through greater co-operative play and increased acts of kindness towards new, upset or sick children.



**Sense of place**

The children were taken outdoors as often as possible. Each outing was approached as a time for exploration and discovery. Through these experiences, the children became more familiar with their local environment.

**Teachers too!**

The changes in attitudes were not just confined to the children. As staff we were learning too! We gained a greater insight into the value of 'home' knowledge, in particular how it can support and sustain themes in school. We had an amusing example of this when two children were discussing ice:

First child: "I picked up the ice and shoved it in my bag so no one could steal it – and it disappeared, it was magic."

Second child: "No, silly! It melted and your bag got all wet. My mum says you're a silly sausage!"

From this experience we changed our planning to include experiments using ice cubes and water.





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

The following knowledge, skills and attitudes implicit in Education for Sustainable Development were encouraged throughout the project. Of course, these were achieved by working at the level of a 3 to 4 year old. However, we believe that it is very important to lay the foundations for future learning.

### Knowledge and understanding

- how natural processes work
- interdependence – how pupils' own lives and actions connect with the lives and actions of others.

### Skills

- co-operation and conflict resolution
- negotiation
- informed decision-making.


### Values and attitudes

- a sense of identity
- a commitment to the well-being of all living things
- empathy and awareness of the points of view of others
- a desire to participate
- a belief in a positive future.

## Evaluating

We felt that evaluation was very important. This was carried out in a number of ways including:

- We held meetings of the nursery team to review each daily plan to identify any gaps that had developed and to evaluate new activities.
- We asked for feedback from parents, verbally or via our system of 'Home from School Books'. This gave the parents a private opportunity to reflect on their child's learning and development within the nursery, and allowed them to share views and ideas.
- We developed a system of tracking sheets where we could record play preferences and each child's interest in props and activities. We also used the Highland Council Nursery Profiles to chart learning and development.
- We shared information with interested and involved colleagues. This provided us with very useful objective feedback.



Systematic, shared evaluation is the best way to ensure that the children are learning what you think they are learning!

## Challenges

One of our main challenges was the disruption caused when children and staff were absent due to illness. During the year flu, chickenpox and various tummy bugs all had an effect on the class dynamics. While this is inevitable in a group of young children, we tried to address this by stressing the importance of health and hygiene, and linking this into our project work.

Visits from placement students were also inclined to disrupt class routine. Of course, help in a busy classroom is always welcome, and we tried to ensure that disruption was kept to a minimum by informing visitors of our project aims and methods. For example, we changed our planning sheets to include clearer instructions and more detailed information that helped students and supply teachers keep on track with our projects.

Clear aims and approaches on planning sheets ensure that the sustainability focus isn't lost during staff changes.

## The way forward

We believe that the project has put together 'building blocks' which will form an excellent solid foundation for future learning and we are confident about the long-term benefits to the whole school community.

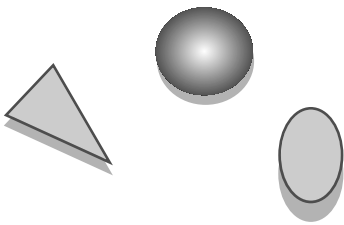
***"In Raigmore, the nursery class is very much at the heart of the school and the work done there is always of interest to the whole school. The most striking effect of the project was the enthusiasm generated by the pupils, parents and staff – not only at the start but sustained throughout the various topics during the year. It is very heartening to see such sound partnerships being formed at this early stage – partnerships which will further develop as the children move through school and beyond."***

***"Youngsters obviously come to us with attitudes already formed during their years at home. 'We all count' has allowed them to think about these attitudes and to further develop them in a very structured, secure and positive environment – a great investment for the future!"***

***"This project has kindled the children's excitement about environmental number, and increased their knowledge, skills and confidence. It is the responsibility of the whole school to build on this superb start. We need to ensure that they can grow up with well informed and positive attitudes towards their environment, knowing their place in it and how they can take responsibility – albeit in a small way – for its safe keeping."***

***Moira Leslie, Headteacher***





#### Valuable resources

*Sharing Nature with Children*, Joseph Cornell, Exley Press. ISBN 0 905521 366.

*Sharing the Joy of Nature*, Joseph Cornell, Dawn Publications. ISBN 0 916124 525.

*The Wee Green School Pack*, Gill McKinnon & Sudheer Carroll, Lothian Regional Council/Royal Mail/SNH, 1994.

*Grounds for Learning: a celebration of school site developments in Scotland*, Kate Kenny, Learning through Landscapes, 1996. ISBN 1 87286 517 8.

#### Acknowledgements

Case study written by Joyce Gilbert, Gillian Symons and Lynnette Borradaile, based on a report written by Kip Clark, Nursery Teacher, Raigmore Primary School, Inverness.

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## The school and its project

Raigmore Nursery in Inverness has 40 pupils aged three to five years from a mixed catchment area. It is situated in the main Primary School building and benefits from being part of the normal routines of the school.

Like many nurseries, Raigmore faces the challenge of bridging the gap between the home environment and school, whilst delivering a comprehensive nursery curriculum. Building on the natural spontaneity of the children, this project has not only given maths more relevance, but has also made the children more aware of their own environment, allowing them to develop a sense of place. Regardless of geographical location, it is through the place that we live that we construct personal identities and determine what is important in our lives. Developing a sense of place is therefore an important foundation which allows children to play an increasingly valuable role in sustainable development as they grow up.

This case study aims to share some insights into how a pre-five nursery has developed a sense of place and made Education for Sustainable Development relevant to very young children.

*For further information on the project, contact Moira Leslie, Headteacher, Raigmore Primary School, Inverness.*

## 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 and Generators Award Schemes – managed by WWF-Scotland and sponsored by Scottish Hydro Electric – between 1996 and 2000. The schemes focused on the 5-14 Environmental Studies 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 schemes 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 and acting in ways supporting the goals of sustainable development.