

Office for
Standards
in Education



Taking the first step forward...

towards an education for sustainable development

Good practice in primary and secondary schools

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Office for Standards in Education
Alexandra House
33 Kingsway
London
WC2B 6SE

Telephone 020 7421 6800

Web site: www.ofsted.gov.uk

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Introduction

1. In 1998, the government brought together a panel of experts to provide advice on education for sustainable development (ESD), in particular, to recommend what action should be taken in schools to promote ESD in order to ensure that 'pupils are fully-equipped to be active citizens for the new millennium'.

2. ESD is not a new concept. It has evolved from a mixture of environmental as well as development education ideas and links to a number of related areas concerned with personal, social, economic and citizenship issues. The revision of the National Curriculum in 2000, however, raised the profile of ESD and schools are now asked to promote pupils' commitment to sustainable development. This is defined in the Department for Education and Skills (DfES) publication *National Curriculum Handbook for Teachers* as enabling pupils to:

'...develop the knowledge, values and skills to participate in decisions about the way that we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future.'

3. In 2002, the Qualifications and Curriculum Authority (QCA) produced curriculum guidance for schools, identifying seven key concepts relating to ESD, which provide opportunities for pupils to learn and develop their understanding of ESD and apply it to their lives both within the school and the wider community. These are:

- citizenship and stewardship
- sustainable change
- needs and rights of future generations
- interdependence
- diversity
- uncertainty and precaution
- quality of life, equity and justice.

4. During the period from April 2002 to March 2003, Her Majesty's Inspectors (HMI) visited 14 primary, 2 middle and 10 secondary schools in order to identify the characteristics of good practice in ESD. The inspection took the concepts identified by the QCA as its focus. These concepts are defined in Annex A. The nature of the schools visited and the inspection methodology are set out in Annex B.

Main findings

5. ESD has clear links with a number of subjects where opportunities for its development are presented in National Curriculum programmes of study, notably in geography, science, design and technology, citizenship and personal, social and health education (PSHE). While each school in this survey is unique in its approach to ESD, the factors which most strongly characterise the work of the most successful schools include:

- ❑ A record of experiment over a number of years.
- ❑ A whole-school commitment, led by senior management, to integrate ESD into the work of the school, ensuring that it is able to maintain the momentum and sustainability of initiatives. This occurs most often in the primary phase.
- ❑ A well-developed local support network, for example involving the local education authority in sustainability issues, and/or non-government organisations in providing support across a wide range of projects.
- ❑ Effective use of the community as a learning resource by fostering links with individuals and groups in the neighbourhood. In particular, encouraging pupils and their families to play a part in their local community, developing citizenship through action and using the wider school environment to provide interesting and stimulating contexts for personal development and pupil engagement.
- ❑ Giving pupils both individual and collective responsibility in looking after and improving their learning environment. Most schools which promote ESD effectively have an active school council or eco-committee.
- ❑ An emphasis on inclusion in promoting positive attitudes and values which are intended to equip pupils to develop as individuals and enable them to contribute to a sustainable common future.
- ❑ A well-planned curriculum, which addresses key areas such as environmental issues, alternative energies, rights and responsibilities and sustainability.
- ❑ Clear objectives on the part of the teachers that include physical outcomes (for example, a pond or a recycling scheme) or aim to affect pupils' attitudes and behaviour (for example, looking at attitudes to asylum seekers or developing as active citizens).
- ❑ The active involvement of pupils in initiatives that promote sustainability – for example, to conserve energy, recycle materials and improve the whole school environment, including the school grounds.

Commentary

Evolution

6. In most of the schools visited in this survey, ESD has evolved as part of a developmental process which in some cases has taken many years. Initially, this 'one small step' may have been a small initiative or project initiated by one individual or a small group. The enthusiasm of pupils and staff involved has frequently raised awareness and led to further actions as part of the developmental process.

7. Where the development of ESD is stimulated by a specific initiative, it frequently involves smaller groups of motivated pupils who are engaged in extra-curricular activities. These activities generally have a period of high exposure but are not always sustained. Because of this, the effect across the school is to raise awareness rather than change 'hearts and minds'. However, many schools may have started with an initiative which has created the momentum for further developments. When these start to become embedded in the curriculum, they consolidate and provide a context for learning covering the full range of concepts.

Raising the profile of ESD

8. For many of the pupils interviewed in the schools visited, the profile of ESD is raised when it becomes an integral part of the curriculum. Where heads of department or subject co-ordinators review and, where necessary, revise their schemes of work to include opportunities to promote ESD, this reinforces a greater understanding of the key concepts and continues to develop positive attitudes and values towards sustainability issues across the whole school.

9. The profile of ESD is also raised in schools which have a member of staff with the responsibility to co-ordinate the work throughout the curriculum and in schools where ESD features in its staff development programme. Initially, this may simply raise awareness, but over time it supports new initiatives and especially the development of appropriate teaching and learning strategies. The inclusion of ESD in school documentation and the school development plan provides additional impetus and support for promoting the aspect across the school.

10. A majority of the schools actively promote ESD by providing positive messages about sustainability and the environment. For example, pupils' work, photo albums and press releases keep parents and others informed of what is taking place in the school. Prominent displays, frequently in the school foyer, promote the message of stewardship and sustainability. Dedicated days, or weeks, that focus on an aspect of sustainable development also provide opportunities for pupils to explore issues in an active way, producing tangible and sustainable outcomes. These frequently raise pupils' awareness and stimulate further action and involvement.

Learning through the key concepts

Citizenship and stewardship

11. In several schools, a readiness to involve pupils in decision-making processes that affect their own environment is a significant feature of effective learning about citizenship and stewardship. For example, they have an active and well-run school council or eco-committee which has grown in influence and effectiveness over a period of time. Often change occurs as a result of pupils' involvement in the decision-making process. Pupils learn to take responsibility, even from an early age, contributing to plans for development of the school grounds or helping to organise a range of events such as fundraising for charity. By so doing, they show a high degree of maturity in their discussions and actions. Often, a small initial action by a handful of pupils precipitates changes which have required the need for wider participation.

One class in a nursery infant school initially discussed the need to provide suitable play equipment in the school grounds, which were 'open, bleak and very desolate'. The pupils wrote to the local council and, as a consequence, new play equipment was provided. They were involved with the planning and decision-making activities relating to the design of the playground and development of the school ground features. The pupils designed new playground markings, suggested different areas they wished to see created, which included seating, quiet areas, climbing frames as well as playground games areas. External agencies were brought in to work with the staff, providing ideas and possibilities. Areas of the grounds were divided up, giving classes responsibility for different aspects of the grounds and for their own class flowerbeds and, later, vegetable plots. This development of the school grounds built a sense of belonging, ownership and community among pupils, teachers and parents. This initial activity was expanded and strengthened by the formation of a school council.

The school council is now actively involved in discussing and effecting school-based issues, including energy monitoring and the creation of the 'eco code'. Pupil representatives have met with the local MP, councillors and Mayor to discuss local issues and find out about local and central government policies. As a school, the pupils and their families are encouraged to play a part in their local community developing citizenship through active involvement and action. The school has developed a successful partnership with the local council and is recognised for the work it undertakes with pupils, preparing them for adult life. This active involvement at a local level by pupils provides an understanding and an insight into their community and a realisation of their place in it.

12. In the schools where they are empowered, pupils take action, often through the school/eco council, which provides a platform to let them express their views and argue for their rights. In many council meetings, a wide range of issues aimed at

improving day-to-day life in the school is discussed. Where these meetings are well established, pupils are generally familiar with routines and the democratic process, maintaining order and managing the sessions effectively. Often pupils' perceptions are very eco-friendly. For example, in one schools visited, when discussing recycling, they looked beyond the obvious recycling of paper and cans and concluded that they should also collect ink-cartridges. They also advocated monitoring safety around the school through the use of pupil safety officers. Parents are encouraged to park away from the school junction for safety reasons and a walk-to-school week is often promoted because this is 'healthier and will decrease pollution'.

13. In most of the schools visited, pupils take the initiative on ESD issues, writing letters to promote action, as well as producing posters to advertise such issues. Their discussions often reveal much social responsibility, with suggestions revealing a high level of environmental awareness and a genuine concern for their learning environment and each other. Frequently, pupils take the initiative in recycling, energy saving and healthy eating, especially in those schools where they are encouraged to take responsibility and they know that their suggestions are valued and will be acted on. For example, in one secondary school:

A new contract for catering had gone to a firm that offered healthy eating. However, the pupils were appalled to realize that the firm is prolific in creating waste in the form of plastic and foil containers, plastic forks and knives and so on. They discussed this issue through their school council and raised it with the headteacher, who is now negotiating a change of packaging policy with the firm concerned.

14. In many schools, because pupils rather than adults initiate many of the changes, these are accepted and implemented more readily by their peers. In the majority of schools, where councils are playing an increasing role in raising issues and effecting change, ESD has given this process a clear focus. More generally, teachers remark that where pupils feel responsible for their environment, incidents of vandalism have decreased.

15. Frequently, stewardship is promoted through individual subjects, particularly geography and science, the focus on sustainability providing a practical opportunity for pupils to discuss a relevant and topical local issue.

A Year 5 module – Journey to School – was directly linked to a QCA unit on improving the local environment. It involved a number of strands, including pupils mapping and surveying routes to school as well as identifying traffic levels. Pupils suggested ideas as to how the environment around the school could be improved. All this was put together in a 'brochure' for a local bid to improve cycle parking around the school. Groundwork UK became involved and commissioned an artist to design a mural on an inside school wall, as well as paying for bicycle racks to be installed and for cycle training for pupils. These outcomes affected the curriculum in a practical way, and involved pupils in looking actively at their local environment and seeing how it could be improved.

16. In most schools, pupils learn to work with other members of the school community and actively participate in improving their learning environment in a sustainable way. Such learning promotes positive attitudes and values towards others and the environment.

In science lessons, pupils had measured energy use around the school, concluding that energy was being wasted. This was raised as a whole-school issue through assemblies and class councils. A decision was made by the pupils to promote energy efficiency through poster campaigns, as well as raising awareness in assemblies and the eco-committee. Over the year, the saving was £200. This was celebrated by the whole school and the eco-committee was given the money saved through energy efficiency. The pupils decided to use this to enhance the curriculum by producing an environmental sculpture funding a local artist to work with the school. They needed to add to the £200, and they organised bring and buy sales and other sponsored activities to raise the extra funds required. The result was four sculptures representing the seasons, which adorn and enhance the school grounds. They represent a lasting testimony to the way in which the whole school worked as a community to improve the quality of the environment, address sustainability and enhance pupils' learning in science, citizenship and art.

Sustainable change

17. Many schools are engaged, to varying degrees, in a range of activities such as waste minimisation, energy conservation and recycling, areas where pupils are able to make a very practical and obvious contribution to sustainable change. However, successful learning occurs best where there is a comprehensive, whole-school approach to these activities which reinforces the sustainable message. For example, in one primary school:

The headteacher originally appointed a private consultant to consider energy consumption. The consultant produced a very good display which included targets and graphs of consumption, a policy for energy saving and how the school could do this, as well as an action plan of ways forward. The display was used to raise awareness among both staff and pupils about energy consumption and also raised wider sustainability issues.

Each classroom now has notes about energy saving and has two eco-monitors whose role is to check that doors are closed and lights are turned off so as to save energy. All classrooms also have a recycling point for paper, managed by pupils. The school encourages full use of paper for example, using the second side rather than recycling it after the first has been used. Pupils are very aware of energy saving and the benefits of recycling. There are various 'gardens' in the school growing organic vegetables and herbs that are used in the kitchen. Materials are recycled in two

wormeries to provide natural fertiliser. Water from school dinners is similarly kept for use in the gardens.

18. Whole-school approaches to sustainable change activities are frequently better organised in primary schools. In many primary schools, there often exists a small group of 'enthusiasts' who collect paper from classrooms for the school recycling bin. The group is also often responsible for litter picking. They are well informed about sustainability issues and are often active in promoting them, for example by producing posters encouraging pupils to 'switch off' electricity and water. Many of these pupils, according to their teachers, have taken ideas away from lessons in school and implemented them at home.

19. In most subjects, there are opportunities to raise awareness about, and for pupils to learn to distinguish between, products which are wasteful and those that are more sustainable. In only a minority of cases, however, do schools develop a wider understanding of the need for sustainable change, as for example in this science lesson:

In a Year 5 class, pupils were learning about shadows that are made when light from a source is blocked by an opaque object. Because the pupils were using batteries to provide the light source, it also provided the opportunity to raise awareness of why it is preferable to use rechargeable batteries than ones that are thrown away. They identified situations around the school where they used batteries and came to the conclusion that the school used a lot of batteries. The pupils also identified that batteries were expensive and discovered that they contained toxic substances which were bad for the environment and difficult to dispose of. They began to discuss alternatives and agreed to investigate rechargeable batteries and their cost, while using the Internet or when shopping with their parents.

20. In lessons in which teachers are clear about the learning outcomes and plan opportunities to discuss the issue in depth, pupils gain a greater insight into areas such as wasteful production and disposal or the benefits and drawbacks of the application of scientific developments.

In a Year 2 lesson, the teacher raised pupils' awareness about the complexities of recycling through a practical activity involving sorting rubbish. Pupils had to sort the rubbish into categories depending on the type of material. In doing this, they began to understand that a glass jar might have a metal lid which also needs separating. This was a good practical demonstration of recycling and associated issues. Some demanding observations were made, for example: 'What do you do with pressurised containers?' The re-use of materials was highlighted when the pupils were asked to consider designing pieces of jewellery from the sorted rubbish. Pupils had to think about their design in relation to the rubbish available. They then had to decide whether they would have to change their design if certain materials were unavailable.

Needs and rights of future generations

21. The idea of 'global footprints' is used effectively in many schools to raise awareness about how people can improve the environment or damage it, allowing pupils to measure their own use of resources and consider the wider implications for future well-being. In so doing, pupils learn that they can influence and change their local environment, and influence the global environment for the better.

In a Year 2 lesson, pupils were introduced to the term 'global footprint' through the use of a tray of sand and a shoe. They understood that global means the world and footprint means they leave their mark on something. In a circle, the pupils passed around a globe and thought about something they would like to improve, such as preventing trees being cut down or litter on the local high street. Some pupils had to complete their footprint describing how they would improve the environment of the picture they were given, others had to describe how they would improve their local area, others had to draw a picture of something they would change. Pupils shared ideas and made a collection of footprints, deciding which solutions were reasonable and could happen. Pupils also had to decide who would need to do the changing and what people would need to do to influence change. The messages in the footprints revealed that even these young pupils had an awareness of the relevant issues: for example, 'I would treat the world as a friend and pick up all the litter in the school playground' and 'To make this world a better place... I would recycle cans and food and lots of things. I want to make things so much better.'

22. In some secondary schools, pupils are able to go beyond this basic awareness to assess the sustainability of their own lifestyle. In one secondary school:

Pupils accessed a French-Canadian web site to discover 'Ecological footprints – L'empreinte Ecologique' – and 'why might we want to reduce them?' The work involved the pupils navigating a web site in a foreign language and completing the ecological footprint questionnaire in French. This reinforced and supported work in geography but also made use of ICT research and editing skills. Although not as detailed or expressive as in their mother tongue, pupils were still able to articulate opinions in French about problems and solutions from their interpretation of their own ecological footprint and their use of resources, for example, 'À mon opinion, le problème principal c'est le gaspillage d'énergie et les ressources de la terre. La solution c'est il faut recycler et conserver l'eau et l'énergie.'

23. Frequently, schools are involved in environmental and community projects which provide a legacy and enhance the quality of the environment for the use of the school and the community now and in the future. In one school, for example, this involved a wide range of activities, from planting and refurbishing an area of waste land and developing footpaths and play areas to transforming and regenerating an area within the school to create a quiet space for reflection or relaxation. Most

schools attempt to improve their school environment in a variety of imaginative ways, including the use of art and sculptures. In one secondary school, this was achieved by using only recycled materials. The pupils were made aware that improvements must be low maintenance and have low water consumption, and that features such as seating must be from a sustainable source. This provided a powerful message about their responsibilities to follow a more sustainable lifestyle.

Interdependence

24. In several secondary schools, much successful work on interdependence revolves around issues such as world trade, industry and consumption. In primary schools, the concept of interdependence is frequently developed through the study of the pupils' own world, for example the impact of natural cycles and biological and ecological systems. In one school, good work with the youngest pupils helped to develop their understanding of the consequences of people's actions for the places they live in, and for the other people, plants and animals who also live there.

25. In most of the primary schools, teachers make effective use of texts to explore a range of issues and provide opportunities for pupils to develop reasoning skills through talk and discussion, as in this outstanding example:

In a Reception/Year 1 literacy lesson, the teacher used the poem 'The Black Pebble' to consider the seaside environment. A picture of a beach scene stimulated discussion of the type of activities pupils could do. Initially, the teacher deliberately focused on the fun of the beach. Gradually, she changed the focus to consider how people might make the beach unsafe.

Pupils suggested that broken bottles on the beach could lead to the danger that people might cut themselves. When one pupil said that the sea would wash the problem away, another responded that this would only lead to danger for someone else on another beach further down the coast. In this way pupils showed social responsibility as well as developing reasoning skills. Other issues that were discussed included the pleasures and dangers of powerboats. One pupil linked the fishing boat and the powerboat in the picture and understood that, 'the powerboat would scare off the fish and hinder the livelihood of the fisherman, who would not be happy'. Pupils then produced their own picture of the seaside as a 'nice' place, with an overlay of tracing paper to identify how this could be spoilt. This was effective in making the contrast and consolidating their understanding of human impact on the environment. Additionally, pupils were able to apply the situation to their own school environment.

26. In some primary and secondary schools, through effective geography, religious education (RE) and citizenship lessons in particular, pupils are able to consider the notion of global interdependence from a variety of perspectives, including fair trade and the role of individuals in the world economy. By looking at trade in a particular commodity such as bananas or chocolate, pupils understand how consumer choices affect people and environments around the world, and develop an awareness of the

complexity of international trade. In one secondary school, pupils investigated the relationship between producers and consumers through a simulation, analysing data provided by the teacher and researching on the Internet. In another, through similar activities, pupils understood the economic realities of consumer demand for cheap food and the links with exploitation of workers in producing countries. They expressed concern about 'trade wars' and their impact on the livelihoods of thousands of small Caribbean farmers and vulnerable Latin American plantation workers. Elsewhere, pupils studied the role of multinational companies and supermarkets, learning to look critically at the way the media influence consumers – for example, contrasting advertisements for healthy eating with information they had gathered about the effect of pesticides. Through critical discussion about this issue, they learned not to take adverts at face value.

Diversity

27. Most primary schools approach diversity through well-planned use of the school grounds to enable young pupils to observe the varieties of animal, insect and plant life. Many have made special provision through the creation of a wildlife area, for example a butterfly garden.

28. In this example from an infant school, the colour of flowers was the starting-point for study:

The teacher used the big book 'Planting a Rainbow' as part of a guided reading session to explore the idea of colour in the natural world. Pupils identified colours in plants, using photographs on packets of seeds, and became aware of their diversity. During a guided walk around the extensive school grounds, pupils used paint colour charts to find plants and natural materials which matched the colours on their chart. Pupils were aware that only loose items could be stuck on their chart and they picked flowers and leaves only after asking an adult. As well as recognising colours, the pupils were learning to respect the natural environment around them and developing a sense of wonder about the diversity of nature on their doorstep.

29. Frequently, primary schools develop a global dimension to their work, for example using the Internet as a resource to find out more about people of other cultures and nations. In some schools, international links enable pupils to celebrate as well as understand cultural diversity, both highlighting similarities and emphasising their own individuality. However, productive links remain relatively underdeveloped in the majority of both primary and secondary schools. Where these links are well managed and have a clear curricular focus, they provide a relevant context within which pupils enrich their understanding of other countries and cultures and their study becomes more real and relevant. The correspondence and exchange of curriculum ideas and materials help break down cultural barriers and many pupils are able to develop a critical ability to challenge bias and stereotyping. One secondary school, for example, established a two-way link with a Kenyan secondary school as part of a wider project sponsored by a local education authority environmental centre.

The aims were 'to share knowledge of countries, cultures and ways of life; assist education of students in both schools; share views and opinions of local, national and international events; link both communities in spirit through exchanges; and share visions of a global community.' The exchange took many forms:

- *pupils exchanged letters in English lessons and in their 'enhanced creative writing' extra-curricular sessions*
- *the Creative Arts area recorded and exchanged traditional songs and music*
- *the geography department exchanged meteorological data and information on soil erosion and its prevention, as well as a photographic record of how the school grounds change over a 12-month period. Pupils gained first-hand experience of soil erosion prevention measures while developing joint tree-planting schemes in exchange for information on their own biodiversity projects*
- *an exchange of information on recipes and cooking methods widened pupils' knowledge and understanding*
- *an exchange of cultural and religious information helped break down preconceptions and stereotypes*
- *the eco-club in the English school and the conservation club in Kenya shared information and advised on reducing, re-using and recycling waste in each school. The pupils in England soon discovered how much more waste they created in their school in comparison and how much more of the waste was re-used in Kenya.*

30. The diversity of the natural landscape frequently provides a source of inspiration in a variety of subjects. One teacher used it as a stimulus for creative writing and poetry and, although there was no specific teaching about ESD, the session was valuable in raising the awareness of the pupils of their immediate environment.

Pupils in a Year 5/6 lesson had gone for a walk in the school woods to collect ideas and imagery to write a poem about the environment. They listened to the sounds, looked at colours and reflected on their feelings while walking through the woods. They also collected twigs, grass and leaves for stimulation and decoration. The high quality of the poetry produced reflected the value of the first-hand experience in using the local environment to stimulate imagery and ideas.

Uncertainty and precaution

31. In most primary schools, pupils are beginning to develop the ability to make informed decisions after weighing up the evidence carefully. This often involves listening to others and valuing their contributions during the course of a debate.

Effective teaching and learning strategies that focus on pupils being more 'informed and independent learners' link well with ESD because it involves 'creating unique positive learning environments' and 'valuing individuality and difference.' In one primary school, for example:

The pupils used de Bono's thinking hats to articulate a problem and provide a solution. They were encouraged to write to the council about issues which affected their school, for example, traffic issues in the surrounding streets. On this occasion, they were asked to consider the problem of a dangerous gap in the wall on the school periphery. Having weighed up the evidence carefully, they were asked to find an environmentally viable solution that would improve the area.

 The facts about this wall are that it is jagged and it is very old. It has a broken fence next to it. It is not very safe for children and adults. It also looks very untidy. The headteacher does not want people coming this way.	FACT KNOWN	 Our school wall looks unsafe and looks very untidy. In winter when children climb over it they could get hurt because it's got ice on it. There is a broken gate and muddy rubbish. There is overgrown grass and parents and children use it all the time.
 The good points about this wall are the parents think that this wall is positive because no road is behind it	GOOD POINTS	 Some children think it is a short cut and quicker to get to school and they think it is safe and that it's very useful for them
 The bad points about this wall are that it has sharp edges on it, which could cause a very serious injury. The broken fence next to it can make someone hurt. It is very dangerous. There are broken stones and a few pieces of smashed glass too near it	BAD POINTS	 The wall has got loose stones and broken glass on it. The children could get hurt because it's icy in winter. There is a broken fence, which is dangerous.
 I feel worried for children who may have been injured by both the fence and the wall. Many people are ashamed of the environment	EMOTIONS	 People are getting worried and concerned people are getting hurt and it is an ashamed environment. Children are glad and think it's useful
 One solution for this broken wall is that you could rebuild the wall and make a path leading to the playground instead of people having to climb over. We could contact people who may be able to solve our problem	SOLVING A PROBLEM	 A good thing to do is make a proper metal gate so people won't get hurt. Also, make a path to the playground. The last thing to do is contact a building company
 We are going to ask our school council reps to ask the school governors to make a plan. A plan that would solve this problem. Me, myself, personally hope that something gets done about this wall	EVALUATING	 We can ring the school council and ask the government to make a good plan for us. I think they should build a new wall so no one gets hurt.

Pupils' suggestions were drawn to the headteacher's attention, through the school council, and resulted in a gate and pathway being built which solved the problem, removing an eyesore and giving improved access.

32. In most schools, opportunities are found in a range of subject areas for pupils to appreciate that 'there is a range of possible approaches to sustainable development issues.' In one secondary school, for example, through carefully planned tasks, pupils began to understand about the environment and that 'our relation to it is growing changing and uncertain.' In doing this, they were able to 'listen to, critically evaluate and learn from a range of voices and opinions on sustainable development issues'. Elsewhere, where pupils studied the indigenous American peoples in history, they gained a profound insight into the ways in which they influenced how their environment and systems are viewed. Most pupils were amazed to learn how these peoples had a close affinity with their environment and how they treated the land in a sustainable way. They contrasted this critically to the case studies of unrestrained development they had covered in recent geography lessons.

33. In many primary and secondary schools visited, pupils were asked to think critically and systematically about sustainable development issues through the analysis of statistics and case studies, and to propose solutions and develop an informed sense of the urgency and challenge of sustainability. In these mathematics lessons, pupils were asked to use real environmental data, classifying these through spreadsheets before analysing them:

In a primary school Year 5 lesson, pupils used statistics about rubbish to understand percentages while, at the same time, examining the history of waste and how this could be reduced. Using a chart showing the increase in rubbish between the 1930s and the present, pupils calculated percentages of different types of waste. They discussed the implications of the growth in the amount of waste and began to start to think about waste minimisation.

Following a Year 7 survey on household consumption, pupils analysed a range of statistics related to domestic energy and water use, the amount of domestic waste and so on. They learned about spreadsheets and charts and how to analyse them but, at the same time, the ESD context made it practical and relevant. Similarly in Year 8, maths was used practically to analyse oil spills and their effect on the environment.

34. In all cases, these exercises led to a greater understanding of environmental issues, with most pupils relating to the work and seeing it as being particularly relevant. For those pupils who were not generally good at evaluating, this cross-curricular approach put things in context and helped develop understanding as well as reinforcing learning in other subjects such as geography. Local case studies provide opportunities for pupils to explore issues in depth and, in an active way, produce tangible and sustainable outcomes.

35. A small number of schools liaise effectively with local planning departments, involving pupils in consultations about local planning issues. In such cases, pupils' suggestions are valued and through their involvement in specific projects they learn much about the development process and related environmental issues. The 'real' nature of the project enthuses and motivates them to become involved in a practical way.

In one school, pupils participated in an Open Space project linked to the development of a locality close to the school. Developers were building 150 houses next to school on a vacant green field site which had an informal use, for example, for dog walking and motor bikes. This area was a 'green wedge' linking the housing estate to a forested area. As part of the housing development, developers had agreed to help improve the 'green wedge'. The planners involved had been carrying out surveys to determine the local community's views. The pupils became involved in a variety of ways and the project was integrated into existing lessons. Using photographs and maps of the area and working in pairs/groups, all pupils in Key Stage 2 had the opportunity to put forward their own ideas for the area. They constructed maps of possible uses and provided an explanation of their choices. The pupils had to write formal letters to the planners describing and explaining their suggested usage of the land. They were also asked to prepare a presentation for two of the planners who visited the school for half a day. The best presentation was undertaken in PowerPoint and involved the pupils in scanning maps and providing an audio commentary.

Quality of life, equity and justice

36. Most schools in the survey successfully enhance their quality of life by improving the school environment. In many cases, they are supported, and frequently funded, by one or more outside groups or non-government organisations. The range of projects in which this happens varies considerably, from covering old and unsightly mobile classrooms with brightly painted murals to establishing a butterfly garden or a nature reserve, or providing play furniture to improve nursery outdoor areas. Many schools report that, because the projects are 'owned' by the pupils themselves, this results in less vandalism around the school and on school property. One school took the idea of improving the school environment a step further, so that it was also of benefit to the local community.

The school is situated in an urban area which was originally derelict, and much of the school grounds were an eyesore. The starting point for the development of the ESD initiative occurred over 20 years ago, when a pupil suggested that 'it would be nice to clean up the valley'. A community action day was organised and the valley was transformed to become an important resource for the school. Since that time, the area has been landscaped, with paths laid and access points for the disabled. The result is a secluded nature reserve within this area of dense housing. The area is now maintained by pupils on a regular basis, for example by controlling bramble growth and

renewing fences and pathways. They have replaced two benches in the valley with new ones made from recycled plastic. There is an annual bulb planting day and regular school tidy days. In general, there is no evidence of litter. Pupils have also repaired a broken fence facing the main road, renewing steps and working in the different school gardens. A spin off from this activity is that the school is regularly involved in 'tidy days' in the local community where pupils, teachers and parents tidy up the local streets and environment.

37. In one infant school, pupils began to understand that individually and collectively they could 'make a difference', and that their actions could have a positive effect on the quality of life for themselves as well as others.

The school uses a community grant to grow organic vegetables on its premises and harvests them for sale to the local community. Profits go to help local homeless people (charity work and understanding the needs of others), with some food kept by pupils to cook meals for the elderly in a local centre. The 'elders' visit the school to help with garden projects and talk with pupils.

38. Many schools include lessons in PSHE and citizenship to promote learning about how to lead lives that value equity and justice. Although pupils are asked to consider the implications of actions for the future in these lessons, in many cases the practical opportunities are linked to their own experiences in school or in links with the local community. Many schools strive to create a stimulating environment which encourages an 'awareness and respect for self and others'. Frequently, especially in primary schools, pupils are effectively taught about the things in their lives that they value most, such as family, friends and nature. They provide good opportunities for pupils to care about their fellow pupils in the school to ensure that every pupil is made to feel a part of the school community. In one school for example:

A 'Buddy Scheme' was in operation where pupils learnt to care for and respect each other. The 'Buddies' received specific training to be 'polite, kind, helpful, caring, understanding, responsible, enthusiastic and resourceful'. Their role was to care for the pupils in the school, especially at play times, to ensure that every pupil was made to feel a part of the school community. They were there if one of the pupils needed someone to talk to and could be identified via an armband or a yellow baseball cap. Essentially, this was part of an anti-bullying strategy. The training raised awareness of physical, verbal and emotional bullying and the importance of responsibility and friendship.

39. In most primary schools, such messages of care and consideration are often reinforced through the subjects of the curriculum.

In a Year 1 literacy lesson, the teacher had previously read numerous non-fiction books about butterfly and caterpillar life cycles, but also included a specific ESD objective in her planning 'to understand that all creatures are important and that we must care for them'. During the introduction, she read from the 'Snail' book and

asked the pupils 'Where are you most likely to find snails?' 'Have you ever touched a snail?' and 'Why is it important not to hurt God's creatures?' The pupils built up a snail specific vocabulary, for example, 'shell', 'feeler', and so on. The teacher engaged the pupils by having a real snail sitting visibly on her hand. During the course of the lesson, pupils learnt basic information about the snail and at the end released the creature back into the wild; this reinforces the message that people need to care for all creatures.

Conclusion

40. Clearly, the evidence from this survey indicates that while good practice exists there is much still to do, even in these successful schools, before they can claim to have met their own aspirations for ESD or, indeed, implemented their policies in full. However, it is equally clear that such schools can provide inspiration for other schools to take the first steps towards a fully integrated model for ESD that permeates the whole curriculum.

Annex A: the seven key concepts of ESD

Citizenship and stewardship

Recognises that people have rights and responsibilities to participate in decision making and that everyone should have a say in what happens in the future. This involves a willingness to act as responsible citizens while developing the ability to engage with and manage change at individual and social levels. Pupils are expected to know and understand the connection between personal values, beliefs and behaviour and how the school and community can be managed more sustainably.

Sustainable change

Promotes an understanding that there are limits to the way in which the world, particularly the richer countries, can develop. The consequences of unmanaged and unsustainable growth might include increasing poverty and hardship and the degradation of the environment, to the disadvantage of everyone. This involves pupils in understanding how their home and school may be managed more sustainably and beginning to question decisions, practices and processes that affect sustainable development issues.

Needs and rights of future generations

This concept is about learning how we can lead lives that consider the rights and needs of others and recognising that what we do now has implications for what life will be like in the future. This involves pupils in discussing the way they live and the products and services they use, to distinguish between actions and products which are wasteful and those which are sustainable. This should enable pupils to begin to assess the sustainability of their own lifestyle.

Interdependence

Involves an understanding about the connections and links between all aspects of people's lives and places at a local and global level, and that decisions taken in one place will affect what happens elsewhere. Pupils should develop an understanding that living things depend on each other and should acquire a sense that all living things have value. This should lead to an understanding that what people do elsewhere affects them, the places they live, other people, and plants and animals. They should become increasingly aware of the global context within which trade, industry and consumption operate.

Diversity

This concept is about understanding the importance and value of diversity in people's lives – culturally, socially, economically and biologically – and realising that

all our lives are impoverished without such diversity. Through learning, pupils should appreciate cultural and biological diversity in the school and locality and eventually be able to reflect critically on, and engage in, debates and decisions on political, technological and economic changes which impinge on diversity and sustainability.

Uncertainty and precaution

Involves a realisation that because people are learning all the time and that their actions may have unforeseen consequences, they should adopt a cautious approach to the welfare of the planet. This implies understanding that different people want to do things in different ways and are able to listen to arguments and weigh evidence carefully. Pupils should thus be able to think critically, systematically and creatively about sustainable development issues, solutions and alternatives.

Quality of life, equity and justice

Recognises that for any development to be sustainable, it must benefit people in an equitable way. It is about improving everybody's lives. At a basic level this involves understanding the essential difference between needs and wants and developing a sense of fairness. It involves understanding the difference between quality of life and standard of living and seeks a good quality of life for all people, at local, national and global levels and an appreciation of why equity and justice are necessary to a sustainable society.

Annex B: inspection methodology

Schools inspected

The 26 schools visited were chosen because they already been identified through Section 10 inspections as likely to exemplify good practice in the promotion of ESD, or were schools working closely with their local education authority or with national agencies concerned with ESD projects. They reflected a range of contexts, from small to large schools in inner city, suburban and rural areas.

Methodology

A small working group of HMI and experts working in the field of ESD was constituted and consulted in order to provide guidance for the inspection notebook. These inspection instruments focused on the broad spectrum of possible areas where ESD could be developed.

The intention was to identify effective practice given the unique and individual pathways chosen by many of the schools. These visits assessed the quality of teaching and learning within curriculum areas as well as the value of any specific ESD-related initiatives that a school was involved in and, in particular, the impact ESD might have on the general school ethos and learning environment.

During the course of these visits, HMI assessed several key areas:

- **Management** – focusing on the school mission statement; ESD policy statement; senior management involvement and support; references in the school development plan; allocation of resources; role of the governing body; guidance on implementation into the curriculum; relevant professional development; ESD audit; monitoring of ESD; the sustainability of ESD projects
- **Curriculum** – focusing on planning; inclusion and identification within current schemes of work and lesson planning; evidence of cross-curricular mapping
- **Teaching** – focusing on positive role models; use of local case studies; engaging local issues; links with, and use of, ESD associations; use of topicality; active learning; exploring issues leading to action on behalf of pupils; evidence in displays of work, for example, letters to decision makers; global links; field visits
- **Learning** – focusing on independent styles of learning; children developing their own reasoned points of view; pupils as active

citizens within the classroom, school and community; active participation in reducing waste; active decision-making

- **Decision-making** – focusing on active involvement in a school or eco-council; examples of whole school participation and co-operation; playground committee; active environmental group; networking and community involvement; fundraising; feedback mechanisms for students to talk about school issues; pupil-parent-teacher working groups
- **Specific projects** – focusing on details of specific initiatives that the school may be involved in; links with NGOs or other areas of funding/support; details of each project context, funding, success indicators
- **General environmental indicators** – focusing on an eco-code; waste minimisation and recycling schemes managed by pupils; incentives and schemes in place for staff and pupils, e.g. to travel by means other than by car
- **Purchasing** – focusing on recycled paper; fair trade products; fresh food on offer; local produce sourcing policy; environmentally friendly purchasing throughout the school; energy efficiency measures in place; pupils' involvement in purchasing policy
- **Grounds and learning environment** – focusing on the use of school grounds and facilities; wildlife garden; use and upkeep of green space; nature set-aside; recycling facilities; use of school grounds for teaching and enhancing the taught curriculum; diversification of school buildings and grounds outside school hours, for example for community education.

The cumulative evidence from these visits provides the basis for this report.

Annex C: a checklist for school self-evaluation

In evaluating their progress with regard to ESD, schools might find it helpful to ask questions relating to the following 10 areas:

1. Could the school promote a culture and ethos which values the development, knowledge, attitudes and skills in pupils to enable them to participate individually and collectively to improve the quality of life in a sustainable way?
2. Has the school produced a policy statement for ESD which sets out the aims, priorities and targets for promoting ESD as a whole-school initiative, and identified strategies to promote and raise the profile of ESD within the school and the wider school community? Has it co-ordinated and monitored ESD initiatives and activities throughout the school to ensure a consistency of approach?
3. Is there a programme of staff development in place to raise awareness of ESD and develop teachers' competency and skills?
4. Have subject leaders identified opportunities within their schemes of work to enable ESD to be delivered and reinforced through the curriculum? Does the teaching approach promote active learning to develop pupils' understanding of sustainable development?
5. Does the school develop active and responsible citizenship and stewardship through pupils' involvement in active decision-making through a school council or eco-committee?
6. What links has the school established to support and develop a global and international dimension within the curriculum?
7. How does the school involve, and make use of, the wider school community to enrich learning and pupils' personal and social development including the effective use of business, local authorities, non-government organisations and community groups to support their work in developing the sustainable agenda?
8. In what ways does the school respect and value diversity?
9. In what active ways is the school involved in improving performance against sustainability indicators, including waste management, fair trade and a green purchasing policy?
10. Has the school embarked on, or maintained, a programme of ground development and improvement to support learning, promote stewardship and improve the quality of life?