

Education for sustainable development

Improving schools – improving lives

Ofsted visited 14 schools over a three-year period to evaluate how effectively they had developed pupils' understanding of sustainability and whether education for sustainable development had any impact on improving the broader life of the school. Over three years all but one of the schools improved the overall effectiveness of their provision for sustainable development, with a wide range of positive consequences.

Age group: 4–18

Published: December 2009

Reference no: 090004

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Executive summary

This report builds on two previous publications by Ofsted. *Taking the first step forward – towards an education for sustainable development* celebrated good practice and identified possible starting points for schools that were aiming to become sustainable.¹ *Schools and sustainability* evaluated the extent to which schools taught their pupils about sustainability and the progress they were making towards meeting the expectations of the Government's National Framework for Sustainable Schools.^{2, 3}

This report draws on visits to 14 schools (eight primary schools, one special school and five secondary schools) between September 2005 and December 2008. Each school was visited three times over that period to determine how successful it was in developing pupils' experience and understanding of sustainable development, and whether an increased commitment to sustainability had wider benefits.

The primary schools in the survey made better progress than the secondary schools towards becoming sustainable. However, in both phases, the pupils increased their knowledge and understanding of the importance of leading more sustainable lives and, over the three years, all but one of the schools improved the overall effectiveness of their provision for sustainable development by at least one inspection grade.

In the most successful schools, sustainability was an integral element of a well-planned curriculum and all staff, not just a dedicated few, saw it as their responsibility to develop it. As a result, it imbued the culture of the school.

Learning about sustainability captured the interest of children and young people because they could see its relevance to their own lives. The most successful schools gave their pupils the opportunity to take part in a wide range of practical activities, both within and outside the classroom, and to initiate their own projects for improving sustainability. The pupils reacted very positively to being able to work collaboratively, to conduct research and to take part in debates and discussion. In several instances, this led to more positive attitudes to learning in general, better behaviour and attendance, and to improved standards and achievement.

Over the course of the survey, the schools adopted a widening range of approaches to teaching and learning about sustainability. In particular, there was an increasing emphasis on discussion, creative thinking and persuasive writing. In the first year of the survey, girls tended to show more interest than the boys in the topics being

¹ *Taking the first step forward – towards an education for sustainable development* (HMI 1658), Ofsted, 2003; www.ofsted.gov.uk/publications/1658

² *Schools and sustainability* (070173), Ofsted, 2008; www.ofsted.gov.uk/publications/070173

³ For further information on the National Framework, see: www.teachernet.gov.uk/sustainableschools/

explored. By the third year, however, boys and girls displayed equal levels of interest.

Over the course of the survey, most of the schools succeeded in improving their premises, using energy more efficiently and reducing waste. Revised policies on travel, purchasing and the sourcing of food and materials also contributed to improved sustainability.

The most successful schools were able to show that an increased appreciation of the need to care for the environment also led pupils to take greater pride in the local environment. The pupils who were committed to sustainability in school tended to lead sustainable lives at home and there was increasing evidence of this leading to positive changes in their families' views and behaviour. The commitment, enthusiasm and initiative of young people were also a spur to members of the wider community to re-examine their own lifestyles.

The report provides examples of specific actions that led to improvement. These ideas and strategies may help other institutions in striving to meet the Government's target for all schools to be sustainable schools by 2020.

Key findings

- Discussions with pupils showed that, over the three years of the survey, they developed a better understanding of the impact of their lifestyles on the sustainability of the environment.
- At the beginning of the survey, none of the schools was outstanding in its approach to sustainability. By the time of the third visit, all but one of the schools had improved by at least one inspection grade. One school had improved from satisfactory to outstanding and three that were originally inadequate were good.
- The primary schools visited made greater progress than the secondary schools in improving provision for education for sustainable development.
- In the most successful schools, education for sustainability was an integral element of the curriculum and all pupils and staff contributed to improving the sustainability of their institution.
- Most of the headteachers found that, over the course of the survey, education for sustainability had been an important factor in improving teaching and learning more generally. This was confirmed through lesson observations in a range of subjects across the sample of schools visited.
- Some school leaders identified links between particular pupils' involvement in sustainable activities and improvement in their attitudes and behaviour generally.
- Pupils responded particularly well to education for sustainability when it gave them the opportunity to take part in practical activities within and outside the

classroom and enabled them to research, plan and implement projects that made a clear difference to the school and the local community.

- A common characteristic of the lessons observed, across the full range of National Curriculum subjects seen during the survey, was the high level of engagement of the pupils in work they perceived as relevant to their lives and future well-being.
- The schools demonstrated how greater awareness of the need for sustainability can lead to reduced financial costs and better management of resources and estate.
- The knowledge and understanding that the pupils gained at school contributed to their leading more sustainable lives at home which, in turn, led their families to re-examine their lifestyles and use of resources.

Recommendations

Schools should:

- make sustainability a priority in their improvement plans to ensure they are meeting their commitment to become a sustainable school by 2020
- develop a whole-school approach to education for sustainability in the curriculum to enable it to become firmly embedded in teaching and learning
- ensure that all pupils have access to out-of-classroom learning to support their understanding of the need to care for their environment and to promote their physical and mental well-being
- provide appropriate training and support to inform and engage teachers so that they understand what is required to make a school sustainable
- ensure that they manage the school estate carefully and become models of good practice for sustainable living and working.

Part A. Improving schools – improving lives

1. The Government believes that 'sustainable development is a key responsibility for all of us and everyone has to play their part in making it a reality',⁴ and that schools have a particularly important role to play as well. As places of teaching and learning, they can help pupils understand the impact they have on the planet. As models of good practice, they can be places where sustainable living and working are demonstrated to young people and the local community.
2. In 2008, Ofsted published a report on the extent to which 41 primary and secondary schools were teaching their pupils about sustainability and the progress they were making towards meeting the expectations of the Government's National Framework for Sustainable Schools. The current report is based on a detailed study of 14 schools, visited three times between September 2005 and December 2008, to identify what changes they had made and to try to determine the impact of those changes in improving provision for sustainable development. The fact that these schools had volunteered to be involved and knew that they would be monitored periodically meant that their focus on sustainability was sharper than might normally be found. However, each school had a different starting point and had to respond to a range of other priorities and contingencies. Therefore, their experiences should be a valuable resource for other schools wishing to improve provision in this area.
3. During the first of the three visits, the inspector evaluated the overall effectiveness of provision for sustainable development. At that point, none of the schools was outstanding. Four were good, six were satisfactory and four were inadequate. By the time of the third visit, all but one of the schools had improved by at least one grade on Ofsted's inspection scale. One school had improved from satisfactory to outstanding and three that were originally inadequate were good.
4. The schools that made the greatest progress were those that were starting from a low baseline, but which had a clear vision for where they wanted to be. In these cases, senior managers had a firm commitment to increased sustainability which was clearly reflected in their development plans and in their allocation of resources. Where progress was slower, the support of senior managers was less evident or events such as changes of leadership or school reorganisation deflected resources elsewhere and delayed developments.
5. At the time of the first visit, only five schools had a whole-school approach to increasing pupils' understanding of sustainable development. In most cases, the focus was confined to such initiatives as recycling and promoting fair trade products, and relied heavily on the personal drive and initiative of a small group

⁴ *Brighter futures - greener lives: sustainable development action plan 2008-2010* (00339-2008), DCSF, 2008.

of staff that did not necessarily include the headteacher. Pupils' experiences depended on the commitment of individual teachers and therefore varied considerably between classes.

6. The priorities for improvement differed considerably between the schools. Some saw the need to place a greater emphasis on sustainable development by making it an integral part of the curriculum. Others had identified the need to involve the pupils more closely in planning provision relating to sustainable development. In five of the schools, no-one had specific responsibility for coordinating such provision. Therefore, the first priority was to fill that gap so that general principles could be turned into practical reality. Part A of this report provides examples of the actions the schools took to improve provision and evaluates their effectiveness.

Leading for sustainability

7. The Department for Children, Schools and Families (DCSF) has recommended that 'schools adopt a leadership and management style that promotes the core themes of sustainable development across its curriculum, campus and community'.⁵ The schools that made rapid progress over the period of the survey clearly put these principles into practice. Their senior leaders and governors had a shared vision and a clear determination to ensure that sustainability had a high profile both within the school and the wider community. Sustainability was a core principle that underpinned the ethos of the school. It was closely related to other policies and initiatives and all staff, not just a small band of enthusiasts, shared responsibility for ensuring that its influence was felt and developed throughout the school.
8. A strong focus on training and induction ensured that all staff understood how they could contribute to developing a sustainable school. One of the primary schools visited had modified its staff recruitment processes to include questions that explored candidates' understanding, commitment and experience in this area. One of the secondary schools had established a sustainable development team that was very successful in initiating and implementing developments.

The team, which met every half term, included the site manager, a vice-principal of resources and teachers from several subject areas, including citizenship and geography. It had drawn up an improvement plan which also fed into the whole-school development plan. The areas identified for improvement included integrating sustainability into the curriculum; establishing community links; implementing a garden project linked to a sustainable enterprise scheme; and achieving the Eco-Schools Green Flag award.⁶ The team had succeeded in ensuring far better coordination of

⁵ *s3: Sustainable school self-evaluation for primary, middle and secondary schools*, DfES, 2006.

⁶ For further information on this award, see: www.eco-schools.org.uk/

provision and the school was now considering setting up a parallel team to develop its role as the hub of a sustainable community.

9. At the outset, only two of the schools included sustainability in their whole-school development plans. Those that improved most rapidly used the school development plan to give a high priority to sustainability and to link it to other aims, particularly those relating to the Every Child Matters outcomes.⁷ By the end of the study, one of the secondary schools visited required every department to provide a supplementary section to its subject improvement plan specifically linked to sustainability.

The design and technology department's policy on sustainability included strict guidelines on ordering resources to ensure that, where they were available, recycled products were used; that timber was sourced from managed forests; and that products were, as far as possible, biodegradable. The focus on recycling ranged from using the card/paper recycling system to salvaging timber and electronic components from unclaimed projects. There was also a strong emphasis on saving energy and ensuring that students made the most of materials to minimise waste.

The role of the pupils

10. The schools that made good progress in this area ensured that pupils contributed to decisions about sustainability and helped to implement them. The establishment of a school council or an eco council was often a decisive factor in ensuring greater participation by pupils, many of whom were proud of their contributions to improving the infrastructure of the school.
11. Four of the schools visited involved pupils in planning new school buildings and considering how they might be made more sustainable. A particularly good example was found in a primary school.

The Year 6 pupils considered such questions as whether the new building should be single storey, whether classrooms should have internal or external doors, and what sort of roof would be most durable. They also researched the needs of specialised classrooms and communal areas. They constructed a model of the new school, taking their findings into account. Another group considered energy use. They found that there were advantages in having a solar-panelled roof and fewer windows to reduce glare and keep classroom temperatures constant. They also researched the advantages of low-energy lighting, sensor switches, automatic external doors to contain heat, and identified the ideal temperature for hot water taps. This was an imaginative way of giving the

⁷ For further information on these outcomes, see: www.everychildmatters.gov.uk/

pupils ownership of the new school and provided an excellent practical context for learning the value of making buildings sustainable.

Developing the curriculum

12. At the start of the survey, 11 of the schools provided limited formal opportunities for their pupils to learn about sustainability. In some schools, a few interested teachers did focus on it and, in a few instances, subject leaders, mainly in science and geography, had audited their schemes of work to identify where sustainability was already covered or could be given greater prominence. However, this work tended to be uncoordinated.
13. By the end of the survey, the extent to which schools had increased the focus on sustainability varied. Provision remained fragmented in four of the schools. The schools that had made the greatest progress showed many of the following characteristics:
- The plans for each year group included themes related to sustainability.
 - Schemes of work and lesson plans emphasised enquiry and research, and provided opportunities for pupils to put these approaches into practice.
 - Green issues, such as energy saving, recycling and healthy eating, were included in many aspects of the curriculum.
 - Pupils were given opportunities to develop their speaking, listening and writing skills through work on sustainability.
 - The schools periodically held themed weeks and high-profile events to promote an understanding of environmental and sustainability issues among pupils and parents. Examples included a yearly 'Energy Week' when every class focused on how to save water and to recycle more efficiently.
 - Good use of the outdoor environment provided pupils with opportunities to learn in a practical context.
 - Displays and art work around the school highlighted the increased focus on education for sustainability and celebrated pupils' achievements in this area.
14. The schools involved in the survey increasingly took advantage of the range of resources available to support work in this area, including the advice and guidance provided through the Sustainable Schools website and through a wide range of non-governmental organisations.⁸ Generally, they made good use of the eight 'doorways' identified in the National Framework for Sustainable Schools to promote involvement across a range of subjects: food and drink; energy and water; travel and traffic; purchasing and waste; buildings and grounds; inclusion and participation; local well-being; and global citizenship. In

⁸ For further information, see: www.teachernet.gov.uk/sustainableschools/

many of the schools, this led to particularly good work in geography, science and citizenship. In five of the schools, art and design, and design and technology were also in the forefront of developments.

15. The next example shows how one inner-city primary school used the National Curriculum to develop an innovative approach to education for sustainability.

The school had redesigned its new 'sustainability curriculum' to ensure that teaching and learning met the needs of the community. The curriculum was organised into cross-curricular thematic units which reflected the school's core values, including a commitment to sustainability and global citizenship. A whole-school curriculum framework plotted the expected coverage of sustainability within all National Curriculum subjects. It also included the teaching and learning of key concepts, values and skills relating to sustainable development and citizenship. Key features of this curriculum included:

- opportunities in each unit for educational visits
- a focus on the arts
- opportunities for pupils to direct their own learning
- links with other organisations, such as museums and galleries, in the local area
- links with schools and pupils in contrasting localities to develop pupils' understanding of diversity
- opportunities for pupils to make a positive contribution to society and the environment
- opportunities for pupils to participate in decision-making at a number of levels
- a focus on developing the global dimension through links with schools in other countries and the teaching of a modern foreign language.

16. In another primary school, time was set aside once a week for education in sustainable development, using a project that successfully involved all pupils in two year groups in an environmental activity.

This initiative ran every Friday afternoon. Every pupil in Years 4 and 5 was a member of one of five 'planet' companies, each of which was responsible for making a contribution to the school.

- Planet Forest, which was linked to the Forest Schools development, involved pupils in tending an allotment where they grew flowers. This was particularly popular with pupils with special educational needs and/or disabilities who reacted positively to the stimulus of the outdoor environment.⁹

⁹ For further information on forest schools, see: www.forestschools.com/

- Planet Garden gave pupils the opportunity to design and maintain a sensory garden for the partially sighted.
- Planet Paint focused on the creation of murals in specific areas of the school.
- Planet Radio enabled pupils to produce programmes about life in the school and the local community which were transmitted at lunchtime.
- Planet Profit provided experiences of managing and working in a café, a library and the school shop.

17. One primary school set up a special classroom where every class in Key Stage 2 spent an hour every week learning about sustainability. The pupils said that they enjoyed the numerous opportunities to work collaboratively, discuss and discover for themselves and to develop practical skills, outside as well as inside the classroom.
18. Partly in response to the revision of the National Curriculum at Key Stage 3, one of the secondary schools visited was piloting a new integrated course for Year 7 which gave a particular emphasis to developing thinking skills and an understanding of sustainability.¹⁰

The focus was very firmly on the eight 'doorways' identified in the National Framework for Sustainable Schools.¹¹ For example, when studying the topic of food and drink, the sequence of lessons involved themes such as: 'How healthy is our food?'; 'Do we really need bottled water?'; 'Do we really need much packaging of our food?' and 'How can we make our canteen even better?' When dealing with energy and water, lessons considered how we might reduce energy bills; why energy is expensive; where water comes from; why we rely so much on electricity and what problems this might cause. This approach ensured that every year group focused specifically on sustainability.

19. Subject departments in secondary schools also provided examples of successful work in this area.

A Year 9 unit on textiles focused on waste, recycling and re-use. As part of this exercise, students considered the potential for 'reinventing' clothing. They studied the work of a local charity that sold second-hand clothing and designed new outfits out of existing clothing. Several students attended a workshop with this organisation which enabled them to re-design items of clothing, such as t-shirts and second-hand garments. The results demonstrated creativity, sustainability and high achievement.

¹⁰ For further information on the revised National Curriculum, see: <http://curriculum.qcda.gov.uk/>

¹¹ Information on the National Framework for Sustainable Schools can be found at: www.teachernet.gov.uk/sustainable-schools/about/about.cfm?levelselected=2&id=2

20. All the schools in the survey explored ways of making better use of their grounds and locality. By the end of the survey, more of them were using the school campus to grow plants or vegetables, to teach pupils new skills and engage them with the natural environment.

During humanities lessons, pupils looked at how the local allotments were divided up, how crops were rotated and what the arrangements were for disposing of waste. They were encouraged to talk to the allotment owners and ask questions. At school, they discussed the social and environmental benefits of allotments, comparing the use of food grown there with food purchased in shops. This led to a discussion of the concepts of food miles, carbon footprints and sustainability.

21. The most successful work on sustainability linked learning to action, so that pupils knew how they could make a difference. Eight of the schools visited had developed very good links with local councillors and other organisations. These provided pupils with a platform for presenting their ideas on how to improve their local environment and gave them the opportunity to tackle real issues.
22. Most of the schools surveyed were twinned with schools abroad, but the quality of these links varied greatly. Three of the schools were far more ambitious than the rest in bringing the global dimension of sustainability into their curriculum. One of these had established links with a primary school in Kenya which provided rich opportunities for learning about sustainability in relation to water, waste and transport.

Pupils in both schools studied each topic at the same time and exchanged their findings. The pupils from the English school considered themselves to be at the forefront of leading sustainable lives and were astonished to find that, compared to their partners in Kenya, they were very wasteful. Contrasting approaches towards the use of transport underlined differences in lifestyles and attitudes. A Kenyan pupil asked: 'Can you explain why you travel seven miles to get a haircut?' This led to a discussion of 'unnecessary journeys'. Thus the link went beyond exchanging information to a real challenge which set the pupils thinking about their own lifestyles and revising their stereotypical views of Africa.

A focus on teaching and learning

23. The impact of schools' work on sustainable development was seen across a range of subject areas. In this example from a primary school science lesson, pupils in Years 5 and 6 explored the topic of waste.

The pupils looked at a bag of rubbish and discussed what could be recycled or composted. To test the comparative biodegradability of paper and plastic, they buried bags in the soil for four weeks and compared the results. They devised and carried out tests to find out what conditions encouraged growth of mould on bread and other organic materials. They

also emptied compost heaps on to vegetable plots and discussed the composting process.

In the classroom, they analysed the types of waste generated in the school and used spreadsheets to compare their findings with data from previous years. They illustrated and explained the best things to do with each category of waste and looked for further ideas in the local council's 'Sling your bin' publication. They then produced displays about how school waste might be better managed.

24. Lesson observations, discussions with teachers and pupils and evidence from self-evaluation documents showed that, over the course of the survey, the schools adopted a widening range of approaches to teaching and learning about sustainability. In particular, there was an increasing emphasis on discussion, creative thinking, and persuasive writing. The pupils said that they enjoyed these lessons because they focused on real issues that affected them and about which they could do something. In the first year of the survey, girls tended to show more interest than the boys in the topics being explored. By the third year, however, boys and girls displayed equal levels of interest.
25. The most effective teachers succeeded in developing knowledge and understanding about sustainability even among the youngest pupils, as this example from a Reception class illustrates:

The children sat in a circle while the teacher asked a series of questions: 'How do we see at night?'; 'What light do we use at night?'; 'What makes light?' The children understood that electricity might be involved but they did not realise that this relied on fuel. The teacher explained that machines are used to make electricity and that these used a lot of energy. He asked the children to jump up and down. They identified that they needed energy to do this. The teacher then told them how we need food in order to be able to generate this energy. He went on to explain how fuel provides the energy to produce light. The next part of the lesson focused on how, in the days before electricity, people relied on candles. They compared the amount of light given out by candles with the light from 'green' torches. These had to be shaken to generate electricity for the bulb. The children became engrossed in the activity. They were able to make links between light and sources of energy and went on to consider practical ways of generating energy, particularly through the use of alternative technology.

26. The survey found examples of schools that deliberately used sustainability as a lever to develop other aspects of their work. One of the primary schools visited had been given a notice to improve by Ofsted because it was failing to provide a satisfactory standard of education for its pupils. While recognising the need to raise standards in English, mathematics and science, the headteacher was keen to ensure that all pupils in Key Stage 2 continued to study a range of topics on

sustainability. Scrutiny of their work during the survey showed that many of the pupils were making good progress in these lessons because they found the topics interesting and the opportunity to take part in practical activities stimulated their learning. The school made significant improvements and, in just over a year, it had progressed to being a good school. Its most recent inspection report refers specifically to the links between the improvements made and the 'exciting' curriculum of which sustainability was an 'outstanding feature'.

27. There was a danger, particularly in the primary schools visited, that where they did not understand the complexity of sustainability, pupils would take their teachers' views at face value and adopt an orthodox response to the questions raised. The students in the secondary schools visited were more inclined to challenge what their teachers and peers were saying, as a result of which there was an increased level of discussion and debate that led to better understanding.

Managing resources sustainably

28. All the schools visited improved their use of resources over the three years of the survey. The improvements to the premises and the grounds had a particularly positive impact on the morale of the staff and pupils and prompted them to identify further ways of making their schools more sustainable. By the end of the survey, the most effective schools demonstrated many of the following features:
- The managers and governors had introduced energy and procurement policies that were designed to make the school more sustainable and to ensure that the best use was made of all resources.
 - The schools were very adept at reducing consumption and re-using resources, especially paper. As a result, there was less to recycle.
 - The lavatories had been refurbished and re-designed to include devices to save energy and water.
 - All the staff worked regularly with the pupils on a range of projects to maintain and improve the school grounds and to keep them free of litter.
 - Garden spaces were well cared for and used regularly to support learning.
 - The pupils were increasingly keen to recycle materials and reduce waste. They carefully monitored the use of energy by ensuring, for example, that taps and light switches were turned off when not in use.
29. A small number of the schools visited also managed their own catering. They were therefore able to produce their own menus based, as far as possible, on food that had been sourced locally or, in some cases, grown by the pupils on their allotment. These measures, together with the re-designing of the dining

areas and the use of biodegradable packaging, reduced the impact on the environment and also encouraged healthier eating.

30. The following example shows the benefits that one school had gained by integrating its work on sustainability with its catering provision:

Most of the produce used in the kitchen came from local farms. Any waste was disposed of and composted. This included the egg-shells which were put on the school garden to discourage snails. The menu covered a wide range of tastes and introduced pupils to a number of new and unfamiliar foods. The kitchen also used ingredients grown by the pupils in the school garden, including potatoes, leeks and salad produce.

Increased investment in the breakfast club had led to far more pupils using it. During the week of the national tests, the school provided breakfast for all the pupils, as well as fruit at break times. In order to discourage unhealthy packed lunches, the school provided pupils with two sandwiches, fruit, cake and juices which were served in cardboard boxes to reduce the amount of plastic used.

Improvements to the dining hall included the provision of tablecloths and curtains which reduced the volume of noise. Waste food areas had been removed to make the environment more attractive and hygienic. Pupils eating sandwiches and hot meals were allowed to sit together to encourage new friendships and develop existing ones.

Over three years, the number of pupils using the service had grown from 135 to 200. Despite the rising cost of food and energy, it made approximately £150 profit per week.

Sustainability in the community

31. Schools can have a considerable impact on the wider community.

By focusing on sustainable development in the curriculum, modelling good practices within the school, and promoting positive behaviours in the community, many schools are discovering that not only can they make an extraordinary contribution to society, they become great schools by every other measure.¹²

32. The following examples show how the schools visited progressed from raising awareness about sustainability to promoting clear changes of behaviour among parents and local residents.

¹² *Sustainable schools for pupils, communities and the environment: Government response to the consultation on the sustainable schools strategy (04294-2006)*, DfES, 2006.

In a semi-rural primary school, there was a very strong focus on working with the district council and a number of non-governmental agencies to improve the quality of life in the local community. The school acted as an information centre for the neighbourhood and had trained its pupils to educate their families on how to increase sustainability within the home. This approach had resulted in several clear successes. For example, a survey conducted by the pupils showed that 60% of local families did not understand how their central heating controls worked. One in five families had such a poor grasp that it had led to their having to pay very high fuel bills or living in cold homes. The school produced leaflets with ideas on how to reduce energy bills and cut down on CO₂ emissions. It ensured that the pupils could explain these to their families and neighbours and provide further information where necessary. As a result, 55% of families had switched to a cheaper fuel provider and 86% had taken up an offer for a Grade A 'best saving' refrigerator.

33. One secondary school in an area of high social deprivation had succeeded in gaining the trust of the local community through its focus on sustainability.

As part of its policy on sustainability, the school decided to procure as many services as possible from the local area. This led to increasing numbers of local traders being used to maintain the buildings and develop the grounds. The fact that the school was seen as a employer that supported and contributed to the local economy led to its being viewed far more positively in the neighbourhood. The impact of this was seen in the development of the 'Festival in the Park', a joint venture organised by the school and the local community. From small beginnings, this soon grew into a major event involving two marquees, a large number of stalls run by the pupils and local people, as well as contributions from housing associations and other community services.

34. A collaborative venture on the part of two secondary schools led to improved relationships with the community and a greater awareness locally of the need for sustainable development.

Students from both schools were involved in outreach work that focused particularly on maintaining and improving the environment. As a result, they developed great pride in their area and became involved in a range of further initiatives to improve the quality of life of local residents. The local policeman reported that, as a result, there had been a dramatic fall in juvenile crime rates in the area. Adults living in the vicinity of both schools were very positive about the students' public-spiritedness and took an increasing interest in the projects and improvements which they initiated. These included the sale of school-grown produce at the nearby farmers' market, the establishment of a community allotments scheme, and the landscaping and planting of older residents' gardens.

35. One large inner-city primary school in an ethnically diverse area had made imaginative use of home-school link officers, regular parents' meetings and workshops to raise local residents' awareness of sustainability.

The school's focus on developing community cohesion was particularly strong. Good links were established with the London Islamic network for the environment (LINE) and involved the support of an imam.¹³ Partnership with this network had resulted in strong support for the Action Aid 'Power Down' campaign which particularly engaged Muslim parents.¹⁴ The pledges made by many families to decrease waste and power through more thoughtful actions had led to increased awareness at home and encouraged more families to try to lead more sustainable lives.

Part B. Sustainable development outcomes

Learning about sustainable development

36. Evidence from the schools visited indicated that pupils' knowledge and understanding of sustainability developed over the period of this study. However, the extent of the improvement varied according to how committed individual schools were to sustainability.
37. At the beginning of the study, pupils in 10 of the schools visited had been given very few opportunities to learn about sustainability. What they knew had often been learned at home rather than at school. They had some understanding of basic principles, such as the benefits of recycling, but did not necessarily see how these related to their own lives. Even in some rural schools, the pupils had limited awareness of the impact of human behaviour on finite resources. At worst, some of those interviewed displayed selfish attitudes and had no understanding of the impact their lifestyles had on their community and the wider environment. Three of the primary schools and one of the secondary schools had already made efforts to promote education for sustainability. Initially, the primary pupils were generally more interested in learning about sustainability and lived more sustainable lifestyles than the secondary pupils, who tended to be more indifferent. However, over the course of the study, pupils at both primary and secondary level showed gains in their knowledge and understanding of sustainability.
38. In 10 of the schools visited, an increased focus on education outside the classroom provided pupils with the chance to learn in a more practical way, as

¹³ For further information on LINE, see: www.lineonweb.org.uk/

¹⁴ For further information, see: <http://powerdown.actionaid.org.uk/>

illustrated in the next two examples. An earlier report contains other examples of good practice.¹⁵

The pupils in this primary school had a wide range of opportunities to interact with the natural environment and recognise and understand the diversity of nature. The activities in which they were involved included: hunting for bugs; making wildlife habitats; gathering firewood; making fires and cooking on them; producing charcoal; creating outdoor art works from natural materials; building dens and shelters; and playing a wide range of games designed to develop their problem-solving abilities and team-working skills. Discussions with children from the Reception class showed that these activities had developed their awareness of the plants and animals around them and given them a high level of understanding about why they needed to look after the environment. They also had a good knowledge of the importance of adhering to health and safety rules and the need for good stewardship of the environment.

By tending and maintaining the land and growing a wide range of crops in the school allotment, pupils from Years 3 and 4 built up an excellent understanding of the natural environment. For example, they were able to identify a wide range of plants, animals and insects. They could explain where their food came from and appreciated the effort required to produce it. By growing and cooking their own food, they also learned about healthy eating.

39. The following example from a secondary school shows how work related to sustainability had raised the aspirations and achievements of low-attaining students.

Time was set aside within the curriculum to give these students the opportunity to work in the school gardens where they received expert advice and training from local horticultural experts and prize-winning gardeners. They clearly thrived on being given the responsibility for digging the trenches for a newly installed automated watering system and for spreading and turning over manure in the beds set aside for soft fruit and vegetables.

The school had recently acquired an allotment where the students grew vegetables and flowers which they sold at a local farmers' market. This gave them the opportunity to establish good relationships with farmers, stall holders and market staff and to gain the skills and satisfaction of organising and running their own enterprise. A Year 10 pupil commented:

¹⁵ *Learning outside the classroom: how far should you go?* (070219), Ofsted, 2008; www.ofsted.gov.uk/publications/070219

'I really liked working at the farmers' market because we did all the work to get it ready and it was good seeing people buying our stuff'.

The school reported that these experiences had improved the students' behaviour and raised their self-esteem. Some of them had presented talks on their project to groups of adults. Others had developed the skills of managing and motivating others and of making decisions on their own.

40. Classroom-based work on sustainability gave pupils the opportunity to extend their knowledge and understanding through research, for example into the relative merits of different solutions to an environmental problem. Pupils in a Year 5 class developed their skills in writing persuasively by presenting different viewpoints on the exploitation of the rainforests.
41. It would be impossible, without more detailed research, to make a strong link between education for sustainable development and improved attainment. Nevertheless, nine of the headteachers cited examples of work on sustainability leading to higher levels of commitment and engagement and to improved performance on the part of their pupils. Some attributed this to the way that research into topics on sustainability had extended the pupils' critical thinking skills. Schools also commented on how pupils were motivated by the realisation that their efforts could lead to change.

Year 9 students who were studying water-related topics in geography decided to raise money to provide a hand-dug well for a Ghanaian village through the charity Water Aid.¹⁶ They set up a social enterprise project and, within weeks, had produced an action plan to sell bottled, locally-sourced water to their fellow students, reflecting their water-related topic. At first, simple tasks, such as making a telephone call to the potential suppliers proved a hurdle for most students. However, as the project developed, they grew in confidence and began to act on their own initiative, becoming more at ease with dealing with adults in authority.

The project grew beyond expectations and led to several unforeseen outcomes. Initially, they had sold the bottled water at break-times and lunchtimes for 50p. This gave them a 40% profit. However, the plastic bottles were left lying around the school. To solve this problem, they decided to increase the cost of the water to 70p, with buyers being given a 20p refund if they returned the bottle. This solved the problem of litter but produced a new problem of disposal. The group did not want the bottles to go into landfill sites and therefore began to investigate what else they could do with them. They were shocked to find that the county council did not recycle plastic. A local business agreed to take the bottles

¹⁶ For more information, see: www.wateraid.org/uk/

but not to collect them because that would not be commercially viable. By negotiating with other organisations, the students were eventually able to arrange a regular collection.

Having identified that there was a wider problem about plastic recycling, the school council arranged meetings with the council's director of waste and the local MP. This led to a change of policy. The council now recycles plastic bottles. The research and intervention of these students had clearly made a difference.

42. Through links with schools abroad, and an increasing international dimension in the subject and cross-curricular work in which they were involved, the pupils in the survey showed an growing understanding of their responsibilities as global citizens.

Personal development – positive behaviour change

43. All the schools visited placed an increasing emphasis on the social dimension of sustainability. This was particularly marked in the most successful schools, where the pupils displayed very high levels of responsibility, maturity and concern for the environment, as the following example illustrates.

Members of the school council in a primary school expressed concerns about the amount of damage and litter in the local area. They were particularly annoyed by the amount of dog mess on the school fields and neighbouring pathways. They launched a 'paint to clean up' campaign where they sprayed brightly coloured paint on any dog mess in order to draw attention to the problem. They also tidied around the school and set up a system of junior wardens who took responsibility for keeping the grounds tidy and picking up litter.

44. Teachers and headteachers referred to the marked impact that work on sustainability had on pupils' attitudes and willingness to accept responsibility. Some went further and linked this to improved behaviour and attendance.

Pupils who had difficulty relating to others were given the opportunity to work in the bio-diversity garden on a series of projects that included making a bird table, planting bulbs and designing a mural. They spoke very enthusiastically about the experience and clearly enjoyed looking after the animals and plants. Their attitudes and attendance had improved as a result.

45. The most effective schools encouraged pupils to eat healthy, locally sourced food.

As part of their work on carbon emissions and air miles, the pupils in a primary school had visited the local supermarket to look at labels and to estimate how far their food had travelled before it reached their plates.

Their understanding was developed further through their links with a school in Kenya. The pupils realised that, although the Kenyan children had a less varied diet, most of their food was grown locally which was in stark contrast to their own situation where virtually nothing that they ate came from the area, despite the fact that it was famous for its fruit and cheese.

As a result of this study, the school changed its policy, encouraging its pupils to drink apple juice and eat yoghurt from the neighbouring farms. The pupils responded very enthusiastically and proudly talked about the wide range of tastes offered by the local produce. This enthusiasm had also spilled into the home where their families were increasingly buying organic and locally sourced food.

46. It was clear that pupils who had been given the opportunity to study environmental issues were ready to accept changes to their lifestyles. Nine of the schools visited had capitalised on the campaign of a well-known chef for better eating by involving their pupils in debate and consultation on how to improve their diet and eat more locally produced food.

The quadrangle of the school included a garden where the pupils grew tomatoes, potatoes, lettuce, herbs, strawberries and other produce which they cooked and served or sold at the farmers' market. They also sold preserves, such as tomato chutney, that they had made in their food technology lessons. As a result, these pupils had developed a good understanding of the advantages of growing food locally, of eating healthily and of using resources wisely. They also noticed that, since they had started producing and selling their own food, there was far less boisterous behaviour around the school.

47. Over three years, all the schools in the survey noted an increase in the number of pupils who walked to school. In some cases, this had been actively promoted through the curriculum or by organising a 'Walk to School Week'.

Pupils on the school council had made a film about the journey to school in which they questioned the need to use cars. They had assessed the good and bad points about traffic near the school, focusing particularly on how many drivers ignored speed limits and other road signs. Following this, they organised a 'Walk to School Wednesday', the success of which led them to press for a daily 'walking bus'.¹⁷ They discussed safety issues, identified how many adults would be needed and, with the aid of a

¹⁷ A 'walking bus' is a way of enabling large groups of pupils to walk to and from school. Each 'bus' has an adult 'driver' at the front and an adult 'conductor' at the rear. The 'bus' takes a set route, picking up additional 'passengers' at specific points along the way. Everyone wears a high-visibility reflective jacket.

questionnaire to pupils and parents, decided where it should start and end. By the time of the last survey visit, the 'walking bus' was in operation.

A travel plan to encourage more pupils to walk and cycle to school had also led to the establishment of a walking club to encourage children to explore the local footpaths. Almost half of the school was involved in this fortnightly activity. Parents reported that this had also prompted a change in their own lifestyle and, encouraged by their children, more and more of them were now going on walks in their spare time.

48. In rural areas, where distances to school prohibited walking, other ways of improving travel had been introduced, including sharing cars and cycling. Travel plans were most effective when they had been drawn up in consultation with parents and pupils, as illustrated in this example from a primary school.

The pupils used graphs to plot data about travel behaviour. They identified a number of locations within the village where better traffic management, such as crossing facilities, would improve safety and give greater confidence to those who were considering walking or cycling to school. The school also installed parking provision for bicycles and introduced cycle training for all pupils in Years 5 and 6. As a result, many more pupils were cycling to school and the proportion that came on foot had risen from 52% in 2001 to 70% at the end of the survey.

49. Creative use of travel plans could have further benefits, as this primary school showed.

In organising its walking bus, the school planned the route so that it passed the homes of those pupils who were persistently late. As a result, the number of late arrivals fell and attendance improved. The number of pupils taking advantage of the walking bus rose from 20 to 30.

50. Pupils' commitment to sustainability can lead to a considerable reduction in fuel consumption and costs.

Students in a secondary school conducted a sustained campaign to switch off lights, computers and other electrical equipment when they were not being used and to close windows and doors to conserve heat. They identified that adults were often the most wasteful in using resources and they were therefore given permission to point out to staff when they were being lax. Their actions and commitment contributed to a 20% reduction in energy costs, the equivalent of about £12,000.

51. Over the course of the survey, there was increasing evidence that pupils who were committed to sustainability at school were leading more sustainable lives at home and influencing those around them.

Responses to a questionnaire produced by one school showed that, influenced by their children, many families were now recycling, composting and installing low energy light bulbs and were supporting the 'cycle to school' initiative. Parents were also responding to their children's requests for healthier snacks and the amount of packaging used for school lunches had been cut by 60%. The parents and governors were very positive about the way in which the school was promoting sustainability and acknowledged the influence that it was having on their own as well as their children's lives. They commented on how the children now looked healthier and how the incidence of obesity in the school had fallen.

52. The schools that had a strong existing commitment continued to build on their success and to embed sustainability in their life and culture. This ensured the continuity of developments, irrespective of any staffing changes. The work of the four outstanding schools visited was also beginning to have a positive impact on their wider community, as well as on other schools and institutions locally.

Notes

This survey was conducted by one of Her Majesty's Inspectors. A sample of 14 schools from across England volunteered to take part in the study: eight primary schools, one special school and five secondary schools. Three visits were made to each school between September 2005 and December 2008. The initial visit was used to establish a baseline against which to map progress over the following three years. During the visits, the inspector observed lessons across the range of the National Curriculum, scrutinised documentation, and attended assemblies and school council meetings. He held discussions with pupils, parents, governors and members of the community and met representatives of organisations supporting the schools in their work on sustainability.

This report stands alongside a parallel study, commissioned by the Department for Children, Schools and Families, into the attitudinal development of pupils in the same schools.¹⁸

¹⁸ C Grayford, *Learning for sustainability: from the pupils' perspective*, World Wildlife Fund, 2009.

Further information

Ofsted publications

Taking the first step forward – towards an education for sustainable development (HMI 1658), Ofsted, 2003.

Learning outside the classroom: how far should you go? (070219), Ofsted, 2008.

Schools and sustainability (070173), Ofsted, 2008.

Publications by others

Every child's future matters, Sustainable Development Commission, 2007;
www.sd-commission.org.uk/publications.php

A governor's guide to sustainable schools (00445-2007BKT-EN), DfES, 2007;
<http://publications.teachernet.gov.uk/>

Valuing our future: a toolkit for developing sustainable schools, NCSL, 2008;
www.nationalcollege.org.uk/index/leadershiplibrary/leadingschools/leading-change/key-initiatives/sustainable-schools/developing-sustainable-school.htm

Planning a sustainable school: driving school improvement through sustainable development (DCSF-00245-2008), DCSF, 2008;
<http://publications.teachernet.gov.uk>

Sustainable development in action. A curriculum planning guide for schools (QCA/08/4039), Qualifications and Curriculum Development Agency, 2009;
<http://orderline.qcda.gov.uk/bookstore.asp?Action=Book&ProductId=9781847219053>

Websites

www.teachernet.gov.uk/sustainable-schools

This gives information on the Sustainable Schools Programme, including links to publications, tools and other resources.

www.schoolsnetwork.org.uk/Pages/default.aspx

This is the website of the Specialist Schools and Academies Trust. The programme, Leadership for Sustainability, launched by the Specialist Schools and Academies Trust, helps those with responsibility for leading the agenda for sustainable development in schools to develop their own action plans for progress within and through the eight 'doorways'.

www.ncsl.org.uk/sustainableschools-index

This provides information on sustainable schools from the National College for Leadership of Schools and Children's Services.

Annex A. Schools visited

School	Local authority
Alphington Primary School	Devon
Argyle Primary School	Camden
Bishop Challoner Catholic Collegiate Girls and Boys School	Tower Hamlets
Bowbridge Primary School	Nottinghamshire
Durham Community Business College for Technology and Enterprise	Durham
Fyndoune Community College	Durham
Glebe School	Bromley
Glebelands School	Surrey
Meare Village Primary School	Somerset
Moorside Community Primary School	Calderdale
The Academy of St Francis of Assisi	Liverpool
St Nicolas Church of England Aided Primary School ¹⁹	Surrey
Southwood School	Milton Keynes
Staunton-on-Wye Primary School	Herefordshire

¹⁹ Closed on 31 August 2008.

Annex B. Evaluation schedule

These criteria were used during the three years of the survey to maintain continuity.

<p>Outstanding (1)</p>	<p>The school has embedded learning about sustainability within the curriculum and life of the school and is working with the community to advance a whole-school approach to sustainability. Parents and governors are important partners in this process. There is a coherent and systematic programme of continuing professional development which supports the development of sustainability and includes opportunities for feedback on current issues. Staff are working as a team to implement commonly agreed aims and objectives. The school monitors and reviews physical, procedural and attitudinal changes and adjusts its plans accordingly. Effective use is made of the wider school, local environment and neighbourhood community to foster an active involvement in practising the principles of sustainability. Pupils play an integral and often leading part in this process. There is a clear understanding of the issues raised at both local and global level. Approaches to teaching and learning actively promote the development of environmentally and socially responsible values and behaviour. There is a high degree of consistency between the school ethos and the values which underpin sustainability. As a result of participating in democratic processes within the school and the locality, pupils frequently take the lead in creating the impetus for sustainable change. There is a policy which achieves high rates for reduced consumption, re-use and recycling of resources. Water and energy conservation is taken fully into account in school planning and development. There is a purchasing policy with criteria which take into account cost versus impact on the environment, sustainability and fair trade. Pupils take informed action at home and in the community.</p>
<p>Good (2)</p>	<p>The school has identified a minimum entitlement for learning about sustainability across the curriculum. The staff development programme supports training on aspects of sustainability. There is clear coordination of sustainability with a named person responsible. Staff are consulted and sometimes involved in setting aims and objectives for sustainability. There is a clear programme of wider use of the school and community to support sustainability principles and learning. There is a well-established programme of activities which enables pupils to play a role within their local area. Links are being established between local and global issues. There are opportunities to investigate, enquire and debate the principles which underpin sustainable development. The promotion of sustainability is clearly planned within the informal curriculum provision. Pupils have the opportunity to debate the complexity of issues associated with sustainability and, on occasions, are able to act purposefully. The school actively encourages reduced consumption, re-use and recycling of a wide range of materials on a regular basis. There is a clear policy and practice to minimise the use of water and energy. The school purchases, whenever possible, materials which minimise damage to the environment. The school helps pupils to develop an understanding of the principles underlying greener lifestyles.</p>

<p>Satisfactory (3)</p>	<p>The school has developed an appreciation of how learning about sustainability can be used within the curriculum. Individual staff identify training courses they wish to attend in order to familiarise themselves with aspects of sustainability. Information is shared between interested staff. The school is aware of the need to clarify objectives which support the development of sustainability. Individuals use the wider school environment to develop active learning. The school has some involvement in working in the local community and the local area. There is an awareness of the global perspective. Enrichment opportunities linked to sustainable development are evident in some school planning. Activities outside lessons complement and raise the profile of sustainability. Pupils debate issues linked to sustainability but outcomes are less tangible. The school is aware it should re-use and recycle, so it provides facilities for the collection of some materials. Pupils and staff are encouraged to conserve energy and water. Some materials are purchased which minimise damage to the environment. There is awareness of the basic principles underlying greener lifestyles.</p>
<p>Inadequate (4)</p>	<p>There is an acknowledgment of sustainability principles in some areas of the curriculum. There is little evidence of, or interest in, raising awareness of sustainability which is not perceived as having relevance to school priorities. Few staff are aware of sustainability concepts. Little use is made of the wider school environment to promote active learning. Links with the community do not support sustainability principles and pupils have only a basic understanding behind the reasons for their involvement. The global perspective is discussed in some curriculum areas, but often without clear links being made to the local agenda. Enrichment opportunities rarely reflect sustainability values, and sustainability has a very low or non-existent profile around the school. Pupils have limited opportunities to contribute to changing and improving their learning environment. The school is aware it should re-use and recycle but little is achieved in this direction. The learning environment is often drab and unwelcoming. For example, litter is a problem, and displays inside and furniture outside are neglected. There is little tangible evidence that pupils are encouraged to conserve energy and water. The school does not have a clear purchasing policy and there is a general lack of awareness of the basic principles underlying greener lifestyles.</p>