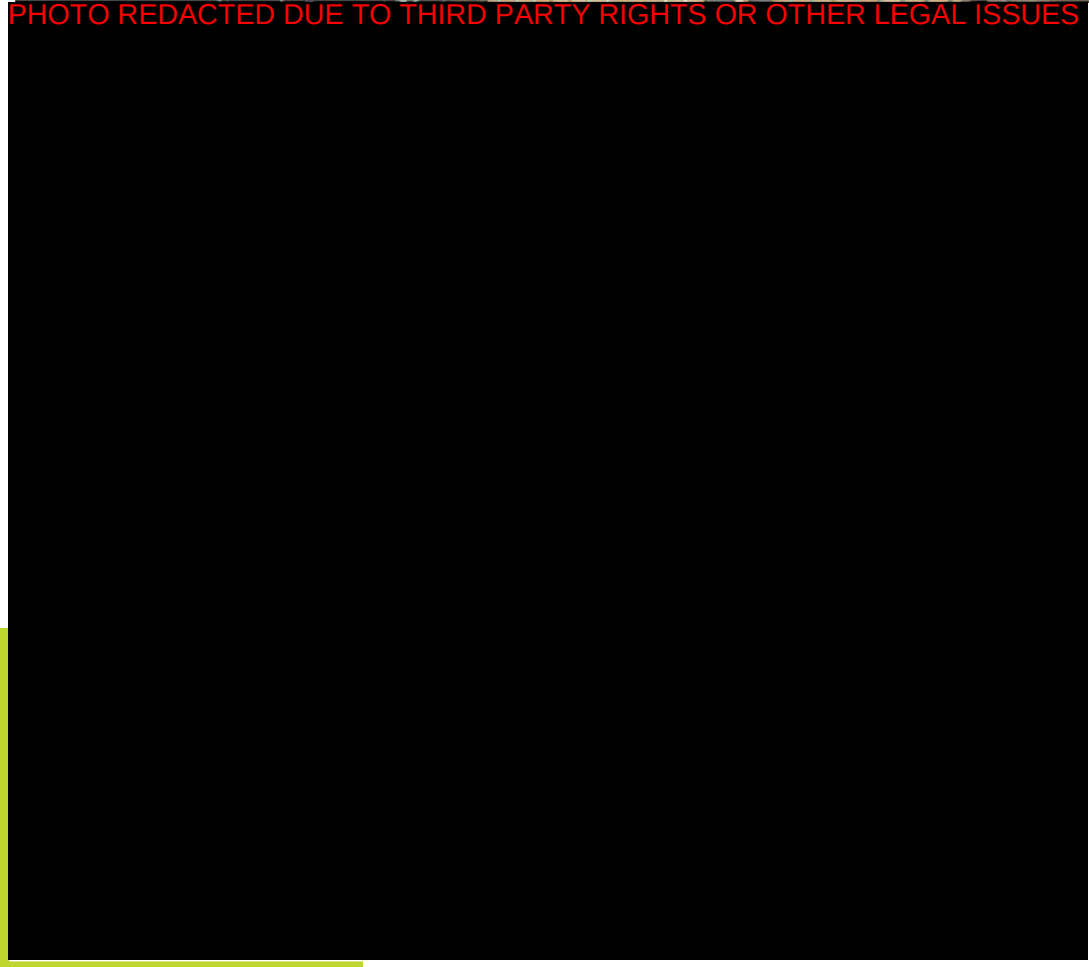


A Bursar's guide to sustainable school operation

department for
education and skills

Creating Opportunity
Releasing Potential
Achieving Excellence

introduction

What is a sustainable school?

It is one that:

- Conserves energy and water
- Avoids the use of pollutants and potential pollutants
- Takes steps to minimise the production of waste
- Enhances and protects plants and wildlife
- Meets local needs while respecting people and their environment through involvement.

It is in everyone's interests to care about sustainability and to understand our impact upon the environment. So we all have an important role to play in ensuring that we find ways of working and living which will improve the quality of life for both present and future generations.

Governments across the world recognise that education is a key solution to the global issues that we face. In the UK, the Department for Education and Skills (DfES) has identified the unique role that schools must play. Through teaching and learning, pupils will be able to understand the impact we all have on the planet as schools themselves become models of good practice, demonstrating ideas of sustainable living and working.

A sustainable school aims to prepare young people for a lifetime of sustainable living.

National Framework

The National Framework developed by the DfES introduces eight 'Doorways' through which schools may choose to initiate or extend their sustainable school activity. It focuses on ways in which sustainable development can be embedded into whole-school management practices and provides practical guidance to help schools operate in a more sustainable way. The doorways are:

- Food and Drink
- Energy and Water
- Travel and Traffic
- Purchasing and Waste
- Buildings and Grounds
- Inclusion and Participation
- Local Well-being
- Global Dimension

Aim of this guide

This guide is a short handbook focusing on two of the doorways (energy and water, purchasing and waste) while touching on aspects of the other six. It outlines measures that can be taken to reduce your school's environmental impact and make real cash savings while enhancing the teaching and learning element of sustainable working practices within the school. These measures would typically be managed by bursars within secondary schools, but could be initiated by teachers or other members of staff at all schools.

The guide is intended to provide practical advice on a wide range of measures within the National Framework for sustainable schools. It complements other initiatives such as **s3** – the **Sustainable School Self-evaluation** tool – and elements of environmental management that are covered in more detail within the Certificate of School Business Management operated by the National College for School Leadership

How to use this guide

The guidance summarises measures you can take with a visual indicator of the degree of difficulty of implementation and the savings that can made:

Difficulty

This represents how difficult a measure will be to implement. One spanner generally means that it is a simple measure i.e. something that requires little or no technical ability and/or at little cost. Two spanners mean that the measure is slightly more difficult to implement but could still be done 'in-house' i.e. by a caretaker. Three spanners mean that a trained/qualified tradesman will be required to implement the measure.

Savings

This represents the potential savings that could be achieved by implementing a particular measure, but these will depend on the size of your utility bill!

Each theme is addressed in a separate section to allow you to tackle each component, depending on your school's priorities and needs. You will find that many of the doorways are interconnected, leading to positive impacts being seen across the whole school.

The recommended measures for each doorway are divided according to cost, allowing you to choose measures appropriate to your budget:

NO COST

LOW COST

MEDIUM COST

HIGH COST

Award schemes?

Did you know that there are four major award schemes that support the progress of sustainable schools?

1. Eco-schools
2. Sustainable Learning
3. Healthy Schools
4. DfES International Schools Award

More information on these schemes and how to apply can be found on page 25 of this booklet.

basic management tips

Understand your bills

Your bills not only tell you how much you owe – they can also be a window into understanding how your costs are split, what you are paying for, and what opportunities you may have to save money.

Check the unit price you are paying, and what the units are

For all metered supplies (energy and water):

- Check that the meter reference number on your bill corresponds with the unique identification number on the meter casing – you do not want to pay for something that you are not getting.
- Inform your utilities supplier of your actual meter readings and query any deviations.

Electricity: Is charged in kWh (kilowatt-hours). Check:

- What tariff you are on – is this the right one for you? If you are on a day/night tariff and use little energy overnight it may be better for you to switch to a day-only tariff.
- The billing intervals – monthly billing is often cheaper.
- Whether you are in a contract – if not, get quotes from a number of suppliers including your existing one.

Gas: Is charged in kWh but measured in other units – usually m^3 (cubic metres) or 100cu ft (cubic feet) Check: that

- The units on the bill are consistent with the information provided on your meter – always compare readings with bills.

Oil: Is billed in litres. Check:

- Delivery invoices against the change in volume in the tank.

Water: Is usually charged in m^3 ($1m^3$ = 1,000 litres) and you are charged for both the supply from the stopcock and the discharge (sewerage). Depending on where you are, you may receive two separate bills from different companies (one for water and one for sewerage) or a single bill for both charges. Sewerage charges are based on the volume of water supplied, so leakages in the supply pipe from the stopcock will result directly in costly water and sewerage charges.

- Check: bills regularly and compare with previous invoices.
- Ask your water company if they provide free water audits.

Waste: For some authorities school waste is classified as domestic and there is no charge, but it is generally charged by weight. If you have a contract with a waste disposal company:

- Check that they are competitive – regularly obtain other quotes, especially when a current contract is nearing its end
- Note that you are responsible for ensuring your chosen contractor acts responsibly with your waste, and holds all necessary licences. Check the Environment Agency website for this information – **www.environment-agency.gov.uk**.

Measure consumption and compare this to your bills

Keep weekly or monthly records of meter readings and the amount and types of waste collected from your school. Use these as a basis to check that your billing information is correct and to help you improve management procedures.

Measuring waste is often more difficult. Keep a record of the amount of waste (e.g. bins or bagfuls) and compare this to the bills you receive. If you are being charged by weight it may be possible to develop a 'rule of thumb' to enable you to compare the number of bags to the bills you receive. You can then start to predict costs more accurately and identify potential savings.

Use your consumption information to improve management

You can compare your annual energy and water consumption from your meter readings against national figures. The Schools Financial Benchmarking online tool can also help you with this – **www.teachernet.gov.uk/schoolfinance/**

- Calculate your total annual use for electricity, gas and oil (in kWh) and divide by the floor area of the school building. This will give your energy use in kWh/m^2. Your Local Authority may be able to help you if you are unsure of your floor area.
- Calculate your total annual water consumption (in m^3) and divide by the number of pupils to give you your consumption in m^3/pupil.

Compare these figures with national benchmarks. The table opposite gives you average national good practice (upper quartile) benchmarks for primary and secondary schools in England. The reference publication also contains statistics on typical performance (median) and best practice (upper decile).

UK PRIMARY SCHOOL GOOD PRACTICE BENCHMARKS				
Utility	**kWh/m²/yr**	**£/m²**	**m³/pupil**	**£/pupil**
Electricity*	26	1.40	_	_
Fossil Fuels*	105	1.50	_	_
Water (with pool)*	_	_	3.2	5.10
Water (without pool)*	_	_	2.9	4.20
UK SECONDARY SCHOOL GOOD PRACTICE BENCHMARKS				
Electricity*	31	1.60	_	_
Fossil Fuels*	104	1.40	_	_
Water (with pool)*	_	_	3.7	5.30
Water (without pool)*	_	_	2.7	4.00

Energy and Water Benchmarks for Maintained Schools in England: 2002-2003, DfES and National Statistics 2004

Once you have compared your utility usage with the national benchmarks, you can identify where your school's performance is above the benchmark figure. Focus your efforts on improving those areas where the difference is the greatest, because this is probably where the biggest savings can be made. The table on the following page can be used to record your meter readings.

If your meter readings or your bills appear to show excessive consumption:

1. Take meter readings last thing at night and again first thing the next morning. The difference in readings tells you how much has been used overnight. If this is higher than you expected it may indicate that things are being left 'on' unnecessarily or that you have a water leak.
2. Take meter readings last thing on a Friday and again first thing on a Monday. The difference in readings will tell you what utility has been used over the weekend. Is this higher than expected? Perhaps services can be controlled by timers to prevent, for example, unnecessary heating or urinal flushing over the weekend? Check timer settings and where possible upgrade to 7-day timers.

1. Consumption Record

When taking your meter readings note in the first column the national benchmark figures, which you can calculate using the Schools Financial Benchmarking online tool.

You can then note your performance and see whether you are: exceeding (★), meeting (●) or failing to meet benchmarks (▲). As you gather more data you can also see how performance has changed over time.

	Benchmark figures	Current Performance	Performance against benchmark	Change since last period	Change over 12 months	Change over 3 years
Date						
Time						
Energy (kWh)						
Electricity (kWh)						
Gas (m^3)						
Oil (litres)						
Water (m^3)						
		No of Bags/ Bins per week	**Change since last period**	**Change over 6 months**	**Change over 12 months**	**Change over 3 years**
Date						
Waste	General					
	Metal					
	Glass					
	Paper					

There are currently no waste benchmarks for schools within the UK. So measure your performance using your first volume of waste as a benchmark. Note the number of bins or bags disposed of each week in the first column and then use the following columns to indicate if you are exceeding, meeting or failing to meet your original performance, using the same symbols above.

Walking around your school to identify wasteful habits

Now that you know which utilities (if any) are not performing well against national benchmarks, you can inspect your school to identify why this might be the case. Typical things to look for, and rectify, include:

- **Electricity** – lights, ICT equipment, heaters/coolers and fans left 'on' or on 'stand-by' in unoccupied areas or overnight; external lights still on in daylight, blinds down and lights 'on' to control glare when they are not needed.
- **Gas/Oil** – overheated rooms; excessively hot water from hot taps and associated hot pipework; doors and windows open when heating is 'on;' heating left 'on' out of school hours.
- **Water** –taps and showers left 'on' or dripping; unnecessary watering of school grounds; excessive urinal flushing; leakage.
- **Waste** – uncollected printing and copying paper waste/resources that can be used elsewhere (for example in art classes); excessive left-overs from the kitchens or excessive packaging on purchases.

Setting targets

Once you have identified your consumption from your meter readings and bills, and have inspected the school to see where the wasteful activity is, you can begin to set targets. Make sure these are:

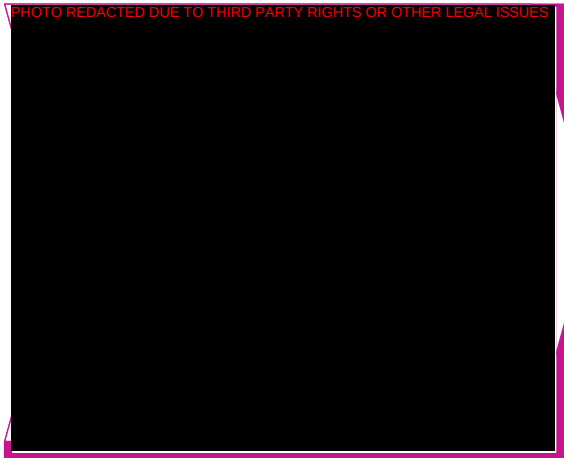
- **Measurable** – for example, a measurable target would be to reduce electricity use by 5% or water use by 15%.
- **Realistic** – a 40% reduction in a year is unlikely to be realistic initially. Moreover, failure to achieve such targets can undermine confidence and reduce enthusiasm in the project.
- **Time-limited** – you need to know when the targets should be met, for example, within 12 months, or by the end of the term.

Develop a plan of action to achieve the targets

From your walk-round you should be able to produce a list of action points to reduce your use of utilities or the production of waste. Also identify the likely level of time/funding required to achieve your action points. The following pages of this guide can help you with to this.

Prioritise your actions, so you tackle the easier, low-cost measures first. When creating your action plan, remember to allocate tasks to specific individuals and set a date for either completion or feeding back information to the group. Regular progress meetings with those involved will help to keep activities from slipping and ensure that everyone feels their actions are important in reducing the overall environmental impact of your school.

Remember to report back regularly to the school users, including governors and parents, on your targets and the progress made towards achieving them.



Energy

Did you know?

From March 2009, an EU Directive (the Energy Performance of Buildings Directive) will require all large public buildings to display an energy performance certificate – this will apply to most, if not all, schools.

Why is it important to save energy?

Most energy use derives from burning fossil fuels which releases carbon dioxide (CO_2), nitrogen oxides (NO_x) and sulphur dioxide (SO_2). The first two are linked to climate change, while the latter causes acid rain. It is vital to reduce these emissions in order to preserve our planet.

On a local level, energy costs directly affect school budgets. Reducing energy use could mean more that money can be spent elsewhere in the school. Moreover, better energy management can involve students, which should lead to improved teaching and learning environments.

Carbon Trust publication GPG057 lists the things to look for in an energy 'walk-round' of a school.

Did you know?

Energy use can be reduced by as much as 20% in many schools, often with little or no capital investment.

NO COST MEASURES

Actions	Benefits	Difficulty	Saving
Check that heating timer settings reflect occupied periods and set thermostats appropriately. School premises regulations recommend: • 18°C – normal teaching • 15°C – corridors and sports areas • 21°C – low physical activity areas and areas occupied by very young pupils or those with special needs.	Young people have higher metabolic rates and are more comfortable and alert at lower temperatures. **Fact:** Reducing heating by just 1°C can reduce heating costs by as much as 8%. **Fact:** A thermostat set at maximum does not speed up heating times.	🔧	£ £ £
Switch off unnecessary lights; label switches; keep glazing, lights and sensors clean.	Maximising the use of free, natural lighting can lead to reduced energy costs and more productive staff and pupils. **Fact:** Lighting makes up 25% of a schools energy bill.	🔧	£ £ £
Replace 38mm (1.5 inch) tubes with 26mm ones where possible.	Slimmer tubes use 8% less energy. It can be a no-cost measure if lamps are replaced as they fail.	🔧 🔧	£ £
Switch off ICT equipment when not in use and enable any standby features such as timed automatic power down.	Extensive use of ICT equipment increases school electricity bills and heats rooms which then require cooling!	🔧	£
Ensure catering equipment warm up times are prominently displayed and only switch apparatus on when required and so that it meets recommended temperatures just in time; use pan lids and minimise fridge/freezer doors opening.	Managing kitchens appropriately, can reduce their energy use by 25%, improve food quality and improve the working environment for kitchen staff.	🔧	£
Use swimming pool covers; only back wash pool filters to maintain good water quality.	Pool covers that are fitted and used properly can reduce costs, protect building fabric and save energy and water.	🔧 🔧	£ £

LOW COST MEASURES

Actions	Benefits	Difficulty	Saving
Seal all glazing, roofs, skirting and eaves against draughts. Replace broken windows, seals and door closers.	Reducing draughts improves internal comfort and lowers heating costs.	🔧 🔧	£
Ensure that heating plant is serviced regularly, this should include: replacing filters/strainers; adjusting belts; repairing leaks; checking and replacing damp or damaged sections of insulation.	Early and preventative maintenance often reduces both costs and the risk of plant breakdown. For further guidance on low and medium cost measures for your heating system see Carbon Trust Guide CTV003.	🔧	£
Replace 'normal' light bulbs with 'energy saving' bulbs.	'Energy saving' bulbs last longer and use up to 75% less energy.	🔧	£ £
Replace failed, blackened, dim or flickering tubes, and, if possible, specify 'tri-phosphor' coatings as specified on the bulbs' packaging.	Tri-phosphor tubes provide a more natural, brighter light for the whole life of the tube. For more information on low and medium cost lighting measures see Carbon Trust publications.	🔧	£
Install 7-day timers to communal equipment, but first check with equipment suppliers about service agreements.	Copiers, vending machines and fume cupboards that are left on unnecessarily will increase energy consumption and costs.	🔧	£
Maintain service agreements on printers, copiers, kilns and fume cupboards and follow manufacturer's advice.	Regular servicing reduces running costs and the risk of breakdown.	🔧	£
Fully load kilns and use 7-day timers to fire them overnight or at the weekend.	Kilns use the same energy whether fully or partly loaded. Firing outside of 'peak demand' times (when your school is open) for electricity can reduce energy costs and save you money.	🔧	£ £

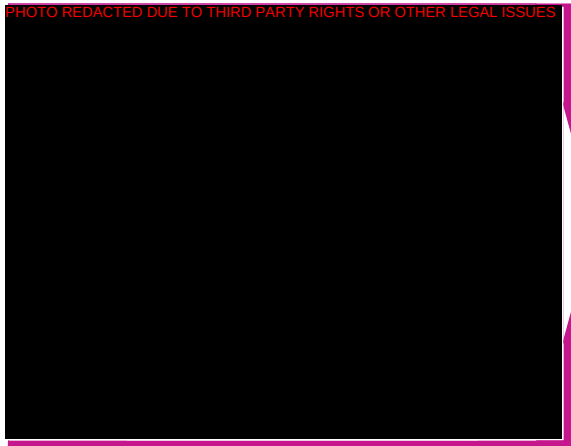
LOW COST MEASURES …continued

Actions	Benefits	Difficulty	Saving
Check for and replace worn fridge/freezer seals and replace as necessary.	Energy use, heat output and defrosting requirements should all be reduced. Food should also stay fresher for longer.	🔧 🔧	£
Heat swimming pool water to 28-30°C and control air temperature to 1°C above water temperature.	Energy use, evaporation and condensation should all be reduced. This will also help to reduce corrosion, damp and mould too. For further guidance on low and medium cost measures for your sports facilities see the Carbon Trust Guide CTV006.	🔧 🔧	£ £ £

MEDIUM COST MEASURES

Actions	Benefits	Difficulty	Saving
Upgrade to automatic heating controls to provide optimum internal temperatures when buildings are occupied. Fit: • 7 day timers. • Weather compensators. • Optimum start controllers.	Good controls regulate the heating circuit (e.g. radiator) temperatures to match external conditions, e.g. cooler circulating fluids on milder days – and ensure that heating circuits are only operational when required. For further guidance on low and medium cost measures to reduce your heating costs see the Carbon Trust guide CTV003.	🔧🔧🔧	£ £ £
Install lighting controls and sensors: • Time switches with a manual override can be installed in both teaching areas and infrequently used storerooms. • Occupancy sensors are very effective in intermittently occupied spaces such as toilets.	Reducing the use of electric lights will reduce your energy use and costs. It also reduces the risk of overheating and extends the useful lamp life.	🔧🔧🔧	£ £ £
Upgrade existing PCs before buying new machines and do not over-specify when buying new equipment. Ensure all equipment meets 'Energy Star' specifications as a minimum.	Higher specification machines often consume more energy, increasing running costs and heat output. Replacing old equipment with new, more efficient equipment is an opportunity to reduce energy consumption.	🔧	£
Replace monitors with flat screen (LCD) monitors.	Flat screens use less energy, produce less heat, do not flicker and free up valuable space.	🔧	£
Install pool covers to reduce heat and evaporative losses from the pool, and allow pool hall air temperatures to drop when the cover is in place. Adjust any pool heating/ventilation controls after covers are introduced.	Covers are the single most effective way of reducing pool energy use and can often pay for themselves within 3 years.	🔧🔧🔧	£ £ £

HIGH COST MEASURES			
Actions	**Benefits**	**Difficulty**	**Saving**
Replace broken windows with low-e coated glazing (or apply low-e film). In highly glazed spaces you may be able to replace some glass with insulated blank panels.	Low-e coatings allow light through but block heat (infra-red). Insulation panels can reduce heat loss and gains and help control glare problems.	🔧🔧	£ £
Fit draught lobbies to entrances, especially if entrances are at either end of a corridor.	These reduce draughts, improve comfort and reduce your heating needs.	🔧🔧	£
Consider replacing existing boilers over 15 years old, ensuring that the boiler is correctly sized.	New boilers use less fuel to produce the required heat.	🔧🔧🔧	£ £
Specify high frequency fluorescent tubes and bulbs when replacing any lights in a whole area.	These use less energy, produce less heat and last longer.	🔧	£ £
When replacing large numbers of computers, consider 'thin client' technology – low-cost, centrally-managed computers without CD-ROM players and diskette drives.	These use less energy, reduce heat output and take up less space. They also have a longer life cycle and are less expensive to purchase.	🔧	£ £ £
Specify gas equipment (where possible) if replacing or purchasing new catering equipment. Also consider: • Automatic equipment e.g. pan sensors on hobs • Ovens with large double glazed viewing windows • 'A' or 'AA' rated energy efficient apparatus.	These cost a bit more to buy but have lower running costs and are responsible for less CO_2 emissions.	🔧	£
Consider solar water heating to pre-heat swimming pool water. In pool halls, also consider: • Installing variable speed fans controlled by a humidistat to ventilation fans • Recovering heat from exhaust air to preheat incoming fresh air.	Solar provides a free contribution to pool water heating and showcases renewable energy technology to pupils. Variable speed fans ensure ventilation only occurs when required.	🔧🔧🔧	£
Install sub-meters to pool heating and electricity loads.	These will help you to identify energy use patterns and costs and will allow for charging wen school facilities are made available to the local community.	🔧	£ £



Water

Aim:

Schools in the UK spend £70 million annually on the provision of fresh water and the treatment of waste water. A typical primary school can have an annual water bill of more than £2,000, while secondary schools often spend double this amount. Thus a reduction in water use offers considerable cost savings to schools and lowers environmental impacts by creating less demand on finite resources. It also reduces carbon dioxide emissions (CO_2) – pumping water is very energy-intensive – and results in a healthier school environment.

NO COST MEASURES			
Actions	**Benefits**	**Difficulty**	**Saving**
Establish a 'water savers' monitoring team, involving students reporting on leaks, running and dripping taps and faulty toilets.	Raises awareness within the school and allows pupils to take responsibility for water use. **Fact:** One drip of water per second = 7000 litres of water wasted per year.		£ £
Encourage staff and pupils to turn off taps and showers fully, and not to leave them running for a long time while washing hands or showering.Turning taps and showers on and off too hard also uses a lot more water than is really necessary as well as wearing down the washers.	Conserves fresh water and reduces water bills both in terms of usage and sewerage.		£ £
Encourage grounds keepers to: • Use plants that are suited to the local climate and soil conditions • Avoid over-watering school gardens • Remove weeds as soon as they appear • Water the base of plants, not the leaves • Use a brush (not a hose) to clean paths, paved areas and driveways.	Reduces the amount of water required for irrigation and also provides a more appropriate environment for the school. Manages water effectively and avoids puddles on the playgrounds. Reduces the plants' water demands for irrigation. Reduces water use and prevents litter/gravel entering the drains.		£
Wipe paint brushes with a rag, and then wash them in a bucket rather than under the tap. Take care with paint disposal down drains and sinks.	Wastes less water – avoids running taps and using water to clean sinks.		£

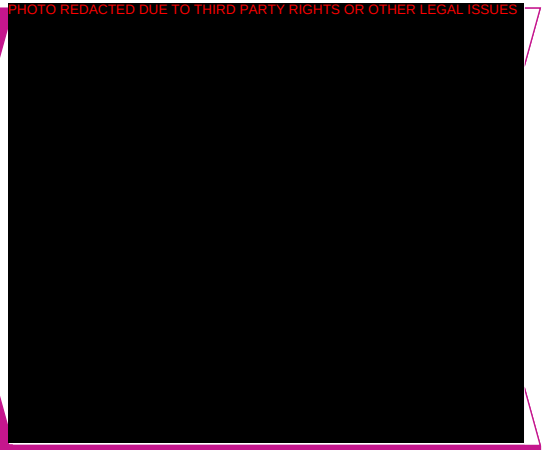
LOW COST MEASURES

Actions	Benefits	Difficulty	Saving
Ask pupils to design and create signs giving hints and tips on how to save water both in school and at home. Place them near taps/toilets/showers, reminding users to turn water off when it is not being used.	Enhances understanding of the benefits of minimising water use, and also raises awareness around the school for staff, pupils and their parents.	🔧🔧	£ £
Install tamper-proof taps in outside locations.	Avoids acts of vandalism and reduces the risk of outside taps being left on overnight, wasting water.	🔧	£
Lock toilets at night and at weekends.	Avoids misuse of the facilities outside of school hours and reduces the risk of water being wasted.	🔧	£
Insert a water displacement device into the toilet cisterns, but only if they are single flush. In some cases your local water company may be able to provide water displacement devices free of charge; otherwise they can be purchased.	Reduces the volume of water used during each flush.	🔧	£ £
Install leak detectors and fix all leaks promptly.	Minimises the amount of water being wasted and paid for but not used.	🔧🔧	£ £
For toilets with valve-operated flushing devices, check for leaks by placing a couple of drops of food colouring or dye into each toilet cistern. If colour appears in the bowl within 15 minutes without flushing, then a leak exists. Try cleaning any limescale off the flushing mechanisms or resetting the drop valve. If this does not stop the leak, the system should be repaired.	This can be done as part of a classroom activity to help pupils understand about leaks. It will raise awareness and also highlight any problem areas requiring maintenance.	🔧	£ £
Apply a layer of mulch at a depth of 7-10 cm around plants.	Reduces the amount of water evaporating from the soil surface and results in healthier plants.	🔧	£

MEDIUM COST MEASURES			
Actions	**Benefits**	**Difficulty**	**Saving**
Install flow restrictors, aerators and/or mixers on all taps.	Results in reduced flow through taps, and can avoid large quantities of water being wasted through running the taps until a comfortable water temperature is reached.	🔧🔧	£ £ £
Install water-efficient aerated showerheads/flow restrictors and slow-release push buttons on all showers or mixer taps. [NB: but not on electric showers].	Reduces the amount of water used in showers by limiting the running times. This also reduces the energy required to heat the water. **Fact:** An inefficient showerhead can use more than 20 litres of water every minute. A more efficient model will provide a high quality shower, using a maximum of 9 litres every minute.	🔧🔧	£ £ £
Fit solenoid (motion) sensors/infra-red controls on taps to ensure that they stop running when not in use.	Can save up to 70% of hot and cold water and also saves energy.	🔧🔧	£ £
Install water-efficient dishwashers in the kitchens. **www.waterwise.org.uk** has a list of dishwashers ranked by their water-efficiency. Encourage kitchen staff always to fully load the dishwasher before use and if possible use an 'economy' cycle.	Dishwasher consumption can range from 1.6 litres to 4.8 litres per place setting, with efficient machines using 18 litres of water or less per cycle. Dishwashers use the same amount of water per cycle irrespective of whether they are full or not.	🔧	£ £

HIGH COST MEASURES			
Actions	**Benefits**	**Difficulty**	**Saving**
Add water crystals to any soil surrounding plants.	Enhances water retention by up to 40% and creates better conditions for the plants, while reducing the volume of water required to keep them healthy.	🔧	£
Replace all toilets with single 4.5 litres low-flush toilet or 6/3 litre (or even lower capacity) dual flush toilets. A range of lower capacity dual flush toilets (4.5/3.0 litres, 4.5/2.6 litres, 4/2.6 litres) are expected to be on the market later in 2007. If replacement of the entire unit is not an option consider replacing the cistern on an old toilet with a 9 litre/4.5 litre cistern, or consider replacing the flush mechanism, turning a single flush toilet into a dual flush one.	Reduces the volume of water used per flush of each toilet. Don't forget to label the cisterns as dual flush, with instructions on how they are to be used.	🔧🔧🔧	£ £
Adjust the flush valves in cisterns.	Ensures that only the minimum amount of water required is used.	🔧	£
Install urinals with integral flush controls.	Ensures that they only flush when somebody uses them.	🔧🔧	£ £
Install proximity detection shut-off to the water supply to all urinals and WCs.	Prevents waste water from minor leaks by shutting off the water supply to the entire toilet block when the toilet is unoccupied.	🔧🔧	£
Install rainwater collection tanks (water butts) where possible to collect rainwater from school roofs. In some cases your local water company may be able to provide water butts at a subsidised cost.	This rainwater can be used to water schools grounds.	🔧🔧	£ £
Install a water meter with a pulsed output on the main supply and sub meters to each building.	Meters are able to record water consumption, at half-hourly intervals if required, and can therefore identify any wastage.	🔧🔧🔧	£ £

Purchasing and Waste



Schools dispose of over 600,000 tonnes of waste each year, spending between £300 and £1000 per year on waste disposal, depending on their size. Defra has produced a top ten tips for managing waste in schools, which you may also find useful. This can be found at **www.defra.gov.uk/environment/waste**

Follow the waste hierarchy:

Prevent How can you eliminate waste from your school?

Reduce How can you avoid creating waste?

Reuse Can an item be used again for its original purpose or an alternative one?

Recover (Recycle, Compost, and Recover Energy) Is your trash another person's treasure?

Disposal Last resort!

Did you know?

Waste production can be reduced by as much as 20% in many schools, often with little or no capital investment.

NO COST MEASURES

Actions	Benefits	Difficulty	Saving
Start an awareness campaign promoting waste as a resource.	This will help change the mindset of staff and pupils into thinking of their waste as something that can be put to good use.	🔧	£
Waste audit part 1 – get pupils to conduct a 'what is in the bin – source, quantity and material?' project for science.	Raises awareness, establishes a benchmark and allows progression of the waste strategy. This information can also be used when tendering for waste contracts.	🔧	£
Waste audit part 2 – how is waste managed within your school – storage, collections (who, when and at what cost)?	Enables effective decisions to be made and may identify a number of efficiency opportunities.	🔧	£
Encourage pupils and staff to cut down on waste produced by packed lunches; promote double-sided printing; allow children to submit work electronically.	Reduces the amount of waste being generated, leading to reduction in disposal costs.	🔧	£ £
Recruit waste monitors – teachers, caretakers, cleaners and pupils can all take part.	Waste monitors can champion waste awareness and take responsibility for new initiatives.	🔧	£
Have a stationery amnesty between staff and pupils – Clear out all the unnecessary pens, envelopes, highlighters, paperclips, etc from desk drawers. These can go back in the stationery cupboard and save a fortune.	Encourages the idea of waste as a resource.	🔧	£
Reuse materials in the art/craft department, in the school grounds as planters, or unwanted paper as scrap paper.	Reduces amount of waste going to landfill; reduces landfill tax charges; and promotes waste as a resource.	🔧	£ £
Hold monthly 'no-waste days' to see how much waste can be reduced.	Raises awareness as well as educating pupils and parents and it may prove habit-forming.	🔧	£ £

LOW COST MEASURES

Actions	Benefits	Difficulty	Saving
Start a wormery or compost bin for ground and kitchen waste, including tea bags, fruit scraps and some leftover school dinners. Ask your local authority recycling officer if cut-price composting bins are available. Incorporate composting activities into science lessons.	This reduces the amount of waste leaving the site and also generates a valuable commodity that can be reused on site or sold. More information on making compost can be found at **www.gardenorganic.org.uk** **Fact:** Food and green waste make up almost one fifth of the weight of waste in schools.	🔧🔧	£ £
Conduct a market research exercise to highlight options and markets for recycling school waste. Where more than one company are in competition, try negotiating for free resources. You could also collaborate with other local schools to improve your purchasing power for waste contracts.	Ensures that the school will get the best value for its waste products, and reduces the amount of waste going to landfill. **Note:** Your Local Authority may be able to provide you with more information on local resources.	🔧	£ £
Segregate waste in-house, if possible, using bins. These could contain materials such as scrap paper, exercise books, cardboard and cans and could be brightly decorated to differentiate them from ordinary bins. With some schemes you can even generate income from recycling cans and toner cartridges.	Find out more about recycling aluminium and how your school could benefit from **www.cashforcans.co.uk**, **www.thinkcans.com** and Alupro **www.alupro.org.uk** Recycool could give you money in return for used printer cartridges and mobile phones **www.recycool.org** **Fact:** Every can made from recycled aluminium saves enough energy to power a TV for three hours.	🔧🔧	£ £ £
If there are constraints on in-house segregation of your waste then appoint a waste contractor who will segregate for you at their depot.	Reduces the amount of waste going to landfill and reduces the landfill tax that you have to pay.	🔧	£
Buy recycled products, products with a high recycled content, or products that can be recycled. For recycling to be successful, we must consciously choose to buy products made from recycled materials.	Buying recycled products allows pupils, staff and parents to see what happens to their waste when they recycle it and proves how valuable it can be.	🔧	

HIGH COST MEASURES			
Actions	**Benefits**	**Difficulty**	**Saving**
Organise a school trip to a local landfill site and a recycling/compost site. Ask pupils to make group presentations to discuss the environmental impacts of landfills.	Enhances understanding of the impacts of landfill sites and the benefits of recycling/composting. These visits will raise awareness of the importance of reducing our waste production. They could be used in all parts of the curriculum, including poetry, art, science and maths.	🔧🔧	£
Link up with local community groups to identify uses for waste streams generated by the school.	May result in more waste being diverted from landfill. It could also generate good links with local businesses and may result in the sale of some waste products generated by the school. Several charitable organisations will accept old school furniture for reuse overseas.	🔧	£ £
Invest in a baling machine or a compactor for your waste.	If you have a lot of cardboard and plastics, it may be financially feasible to invest in a baling machine and sell the bales for cash for recycling. Putting waste into a compactor may allow you to extend the interval between collections , therefore saving cash.	🔧🔧	£ £
Ask your Local Authority to book 'Recycler', a rapping robot developed by the Waste Resources Action Programme (WRAP), to visit your school.	Recycler can spend a week working with your school, providing a fun, interactive show that communicates the 'reduce, reuse, recycle' message.	🔧	£

Note

Legislation now exists surrounding the disposal of electronic equipment, including ICT equipment, and hazardous waste, such as fluorescent light bulbs. It is your responsibility to ensure that these products are segregated accordingly. See the Environment Agency website for more details on the Hazardous Waste Regulations and the Waste Electrical and Electronic Equipment (WEEE) legislation. **www.environment-agency.gov.uk**

celebrating your achievements

Celebrating your achievement

Once you have implemented some if not all of the actions listed above, why not promote and advertise all of the good work and success that your school has achieved? Do you have a school website? If so, why not publicise the savings and benefits online! Use posters, monthly newsletters, and the website to feed back results to pupils, staff, parents and the local community. Why not apply for an award to gain recognition for the measures that you have taken to achieve a more sustainable school.

Awards

We would encourage all schools to work towards achieving an award in recognition for their hard work and progress made in minimising their environmental impact. The following award schemes present good opportunities for gaining staged recognition for your efforts in reducing your impact upon the environment:

Eco-Schools – A simple framework to enable your school to analyse its operations and become more sustainable. By following the programme, your school will become a more stimulating place in which to learn, while reducing environmental impacts and raising the profile of your school in the wider community. There are three award levels:

- Bronze and Silver Awards – self-assessed via website leading to a certificate
- Green Flag – externally assessed leading to a certificate and flag.

Sustainable Learning – Helps schools to manage their energy and water use by providing a step-by-step programme that, if followed, can help reduce schools' utility bills by at least 10%.

Recording progress on the site will allow your school to apply for and download colourful certificates to promote successes to all school users and your local community. There are three levels of award:

- Level 1 – self-assessed via the website leading to a downloadable certificate
- Level 2 and 3 – externally assessed by the programme managers leading to a downloadable certificate.

Healthy Schools – A Healthy School promotes the health and well-being of its pupils and staff through a well-planned and well-taught curriculum, through a learning environment that promotes learning and healthy lifestyle choices. National Healthy School status requires schools to meet criteria in four core themes. These criteria relate not only to the taught curriculum but also to the emotional, physical and learning environment that the school provides.

DfES International Schools Award (ISA) – The ISA scheme offers a framework within which to form and develop international partnerships and achieve curriculum goals. It recognises and rewards the integration of global issues and awareness into the curriculum at a number of levels.

Future Proofing – Schools that will be rebuilt or refurbished

The Government is committed to a major investment programme to improve the condition and functionality of school buildings. For example, Building Schools for the Future (BSF) will replace or refurbish every secondary school in England over the next 15 years, ensuring that pupils learn in 21st-century facilities. There are similar initiatives for primary schools.

This presents many schools with opportunities to include sustainable features during the building of a new school or during the refurbishment of an existing one, such as investment in low-volume WC cisterns to reduce water consumption, and better control of lighting and heating systems.

Building a sustainable school is not only about technology or architecture but is about understanding needs and creating spaces that are fit for purpose. Sustainability begins with finding out what people need and want in their new school. Not only should this include obvious things like pupil numbers, site details and space for storage, but also meeting occupiers' expectations for control and usability of the schools systems, such as lights, blinds and heating, and the integration of information and communications technology (ICT).

More complex technologies may also prove beneficial, such as renewable energy installations, or systems that collect and use rainwater. These technologies can be expensive, but where monitored for effectiveness they also provide a potential teaching resource.

BREEAM Schools

The Government is keen to ensure that sustainability is at the top of the agenda for all those involved in the construction of schools. BRE (Building Research Establishment Ltd) has developed an environmental assessment method – BREEAM Schools (**www.breeam.org/schools.html**) – which will help schools and LEAs to set environmental targets for new and refurbished school buildings. It also serves as a useful tool for designers who want to demonstrate the environmental performance of their designs.

DfES requires the following new build and refurbishment projects to achieve at least a BREEAM 'very good' rating:

- Primary school projects costing £500k or more
- Secondary school projects costing £2m or more
- And which involve remodelling or complete refurbishment of more than 10% of the total gross internal floor area of a school.

Smaller-scale projects are also encouraged to use the methodology and it may be an opportunity for you to gain recognition for the successes achieved at your school.

Sources of information

BREEAM Schools:
www.breeam.org/schools.html

Carbon Trust:
www.carbontrust.co.uk

Defra recycling and waste:
www.defra.gov.uk/environment/waste

Department for Education and Skills:
www.dfes.gov.uk/valueformoney/

DfES International Schools Award:
www.globalgateway.org.uk/default.aspx?page=1343

Duchy Originals Garden Organic for Schools:
www.organicgardening.org.uk/schools_organic_network

Eco-Schools:
www.eco-schools.org.uk

Environment Agency:
www.environment-agency.gov.uk

Healthy Schools:
www.lhsp.org; **www.wiredforhealth.gov.uk**

National College for School Leadership
(see Certificate in School Business Management):
www.ncsl.org.uk/

Ofwat:
www.ofwat.gov.uk

Recycle More:
www.recycle-more.co.uk

Schools Financial Benchmarking tool:
www.teachernet.gov.uk/schoolfinance/

Suschool:
www.suschool.org.uk

Sustainable:
www.sustainablelearning.info

Sustainable Schools on Teachernet (see 'tools' for details of S3 and other products):
www.teachernet.gov.uk/sustainableschools

Sustainable Water Management in Schools
(downloadable publication):
www.ciria.org.uk

Waste Watch:
www.wastewatch.org.uk/education/

Water in the School:
www.waterintheschool.co.uk

Waterwise:
www.waterwise.org.uk

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