

# Using the Pack

This section gives a brief overview of the pack and provides tables summarising the activity sheets and how they link to the National Curriculum.

## About the Pack

Ideally this pack will be used to support a whole school project on waste, where children not only learn about waste issues, but are proactive in setting up recycling systems and making positive changes as to how waste is managed in school and at home.

However, we recognise that schools face different pressures and may not be in a position to effect a whole school programme at that time, which is why we have made the pack flexible enough for an individual teacher to pick and choose individual lessons according to their curriculum requirements.

### Information, teaching notes and activity sheets

There are five chapters providing detailed information (light green tabs) for teachers on waste topics together with teaching notes (dark green tabs) and activity sheets (black tabs) to deliver activities on those topics. It is not necessary to read all the information sections - they are there to provide supporting information for teaching the topic. Where appropriate we have provided sample answer sheets so you don't have to worry about researching answers or testing an activity for yourself.

### How to get started!

If this is the first time that your class is considering waste as a topic then we would recommend that you start with one of the activities from Introducing Waste such as 'Lunch box challenge' followed by activities from Waste in Hertfordshire such as 'Sort Your Waste!' or 'WasteAware'. In this way the children will start to understand what they can do at home to do their bit. If you are feeling a little more ambitious then you could try 'What's in your teacher's bin?' (p.48) or the school waste audit 'How well are we doing?' (p.130) and work with the children and your local Recycling Officer to set up more recycling of the materials used in school.

### Information and Resources

This chapter will help those teachers who wish to tackle the subject in more depth by going on a visit to a waste management facility or who are looking for more information on a particular subject.

### Glossary

The glossary of terms explains key terms and will help teachers to handle the subject matter with confidence.

### Posters

A variety of colour and black & white posters to support your teaching and for use in displays.

## Waste and the National Curriculum

With the tight time constraints that teachers now face we have recognised that the activities presented in this pack need to relate closely to the National Curriculum.

Waste and waste management are very important issues in Britain. Under the EU Landfill Directive we must dramatically reduce, over the next 20 years, the amount of biodegradable municipal waste sent to landfill.

The government has set challenging waste related targets for all local authorities. Topical issues need to be covered in the National Curriculum and waste is one such issue.

Waste should not be ignored in the National Curriculum. It can be an integral part of some of the subject matter, especially in geography and science. For example, in **geography** children "should have a knowledge and understanding of environmental change and sustainable development" and "should be able to identify and explain different views that people, including themselves, hold about topical geographical issues". In **science**, children "should be taught about ways in which living things and the environment need protection".

Waste also provides a context for learning a range of skills and the activity sheets have been designed to cover a number of learning outcomes found in the National Curriculum. The sheets cover a range of subjects including **mathematics, science, geography, history, design and technology** as well as **PSHE** and **citizenship**.

## Key Messages

When developing your programmes of study with this pack, these are some of the concepts to be highlighted.

### The need

The County has to achieve challenging waste reduction targets. It is important that adults and children appreciate the scale of the waste problem, understand the causes and possible solutions and have the motivation to take appropriate actions. This pack is part of an education and information programme from WasteAware to win hearts and minds and offer practical suggestions to help reduce the amount of waste that has to be disposed of.

### Footprints

This is the concept that people require a certain amount of space to supply them with the resources they need to maintain their standard of living and to process the waste they generate. People enjoying a high standard of living require the most space because they consume the most resources and generate the most waste. If everyone had the standard of living enjoyed in Europe, then we would need another three or more Earths! There are websites where you can work out your footprint and compare your footprint with people living in other countries - type in 'Ecological footprints' as a search term. Hertfordshire is in the process of determining its ecological footprint so this should be available at some point on the WasteAware website.

The fewer resources we consume and the less of these resources end up as waste, the smaller our footprint becomes.



## Reduce, Re-use, Recycle

One of the best ways of reducing our footprint is to minimise the waste we are responsible for by applying the three R's of the waste hierarchy. We can do this by:

1. **Reducing** our consumption of resources by being 'smart shoppers'. Ask yourself "do I really need to buy this?" and if so, "I'll choose the one with the least packaging."
2. **Re-using** or repairing as many of our belongings as possible.
3. **Recycling** is the next best option if an item is beyond repair or not suitable for re-use. By separating your waste for recycling, the material can be reprocessed into a new product instead of creating a waste disposal problem.

## There is no such thing as waste!

In nature waste is a resource. For example, the leaves falling from trees in a wood, become resources for bacteria and other living things and are eventually returned to the trees as nutrients.

## Sustainable development

Taking a responsible attitude towards consumption and waste helps achieve sustainable development. It is now a part of the National Curriculum.

Sustainable development is development that tries to balance the needs of economy, people and the environment - across nations and across generations. It is too large a topic to explore in depth here, but for those interested, there is a sustainable development education website at [www.cee.org.uk](http://www.cee.org.uk).

## Recycling in YOUR school

If environmental learning is to be effective in schools, a school needs to adopt a holistic approach. If the practice of waste management in the school does not match what is taught in the curriculum, then the children receive mixed messages. While they know what they should do, they will probably follow the example they are set.

However, the practicalities of practising good waste management in schools have not always been favourable to this. WasteAware is trying to deal with this problem, and schools wanting to have their separated waste collected for recycling, should contact their local Recycling Officer direct (see section **Information and Resources**).

There are also other initiatives to help schools become more sustainable institutions. One of the most popular is **Eco-Schools**. This is an award scheme run by Encams (see section **Information and Resources**). Schools prepare their own management plans using guidelines and templates provided by the scheme. The Award is not competitive. It is given when a school reaches a certain standard.

## Legal Requirements

There are no legal requirements for schools to adopt sound environmental practices except as regards litter. There are laws against dropping litter and laws that say who has to tidy up and how quickly. The school is responsible for keeping its site tidy. If anyone complains to the County about litter on your site, then you are legally obliged to clear it up to avoid possible prosecution. There is a Government Code of Practice on Litter and Refuse. This states how clean an area should be and if it gets any dirtier, how quickly it has to be cleaned up. It can be viewed in full at [www.defra.gov.uk/environment/localenv/litter/code/index.htm](http://www.defra.gov.uk/environment/localenv/litter/code/index.htm). Schools should never be less than Grade B - "Not much litter apart from a few small items". If it gets worse than this, the school has 24 hours to clean it up.

## Activity sheets and the National Curriculum

The table lists the titles, describes the contents and identifies subject areas where the sheets can be used.

**D&T** = Design and Technology; **A&D** = Art and Design; **Geog** = Geography; **Eng** = English; **Sci** = Science; **Hist** = History; **PSHE** = Personal, Social and Health Education and Citizenship.

Those with **ICT** are Activities in which Information and Communication Technologies can be used.

Title	Description	Cross-curricular Links	Years	Page
<b>Introducing Waste</b>				
1. Lunch box challenge!	In 1a children survey the waste in their packed lunch, investigate and decide on ways of reducing the waste and then negotiate a change with the person preparing the lunch. In 1b they check at a later date if they have reduced the waste.	Eng, Sci, Geog, PSHE	3-6	17
2. Your future: Your choice	Children construct a collage using waste materials.	A&D, Geog	3-6	21
3. Introduction to materials	The nature and properties of familiar waste materials are discussed as a group.	Sci, Eng	3-6	22
4. Waste vocabulary	In 4a words related to waste are listed and children link them to the pictures and meanings found on the same page. In 4b there are more words and children need to use a dictionary or other sources of information to find out the meanings. 4c is a fun wordsearch activity.	Eng	<b>4a:</b> 3-4 <b>4b:</b> 5-6 <b>4c:</b> 5-6	23
<b>Waste in Hertfordshire</b>				
5. Sort your waste	Children are shown different items of waste, try to remember as many as possible, then sort them into different categories of use.	Eng, Sci, PSHE	3-6	38
6. WasteAware	Children use the Internet to find out about WasteAware and how to reduce, re-use and recycle waste.	ICT, PSHE	<b>6a.</b> 3-4 <b>6b.</b> 5-6	43
7. What's in Your Teacher's Bin?	Children survey waste generated in the home and use the statistics to answer questions and create graphs.	Maths, Sci, Geog, PHSE,	5-6	48
8. What a load of rubbish!	Children use statistical information to choose appropriate styles of graph and then draw them using rulers, compasses, etc or a computer spreadsheet program.	Maths, ICT	<b>8a.</b> 3-6 <b>8b.</b> 3-6 <b>8c.</b> 5-6	51
9. Litter	Children carry out a litter survey in the school, write up the results and assess how much of a problem there is.	Eng, Maths, Sci, D&T, Geog, ICT	3-4 & 5-6	56
10. Follow that lorry!	A flytipping story that children read, answer some comprehension questions and continue in the same style.	Eng, Sci, PSHE	5-6	60

Title	Description	Cross-curricular Links	Years	Page
11. Where shall we put our waste?	Children investigate the advantages and disadvantages of siting a number of waste management facilities in and around a town.	Eng, D&T, Geog, PSHE	5-6	63
12. The Great Bin Debate	Children debate the advantages and disadvantages of different types of waste collection from households using a newspaper style article for information.	Eng, Sci, D&T, Geog	5-6	66
13. I know that word	Children match up some definitions related to waste and waste management with words in a list.	Eng, ICT	5-6	68
<b>Waste, Past and Present</b>				
14. Waste in the 'old days'	The children interview older people about packaging and waste in the middle of the last century and compare answers with today's situation.	Eng, D&T, Hist, Geog, PSHE	<b>14a.</b> 3-6 <b>14b.</b> 5-6	75
15. Waste in history	Children choose an historical fact about waste and illustrate it.	Hist, A&D	3-6	79
16. The average bin	Students learn what is found in the average bin and illustrate this in graphical form.	Maths, Geog, PSHE	<b>16a.</b> 3-4 <b>16b.</b> 5-6	81
17. Understanding the statistics	Children use statistical information in tables to answer questions, comparing the UK with Europe.	Maths, PHSE	5-6	85
<b>Material Types</b>				
18. Paper, Paper Everywhere	Children investigate the uses of paper and card.	Sci, D&T	3-4	89
19. Investigating Paper	Children investigate the texture and properties of paper.	Sci, D&T, A&D	5-6	90
20. Glass lasts for ever	Pictures are cut out and used by the children to build up a story of a number of scenarios for the life cycle of a bottle.	Eng, D&T, Geog, PSHE	3-4	95
21. Plastic sort out	Years 3-4 practice putting plastic waste into different categories. Years 5-6 use a key to sort plastic waste and use the information they collect to draw statistical diagrams.	Sci, PSHE	<b>21a.</b> 3-4 <b>21b.</b> 5-6	99
22. Compost creatures	An investigation into the minibeasts at work in a compost bin or heap.	Sci, A&D	3-6	104
23. What can be composted?	Children investigate how well different materials decompose.	Sci	5-6	106

Title	Description	Cross-curricular Links	Years	Page
24. Clothes line jumble	Children investigate the different types of materials used in clothing and differentiate between natural and human-made fibres.	Sci	<b>24a.</b> 3-4, <b>24b.</b> 5-6	110
25. Life of a can	Children arrange pictures in patterns to show the manufacture, use and disposal of metal cans.	Eng, Sci, Geog	<b>25a.</b> 3-4, <b>25b.</b> 5-6	116
26. Re-using and recycling words	Children carry out a number of short activities to improve their knowledge of waste materials and waste terminology.	Eng, Sci,	3-6	120
<b>Making a Difference</b>				
27. Decisions, decisions!	Children work in groups to decide the best answer to questions for which there are no totally right or wrong answers.	Eng, Geog, PSHE	5-6	125
28. Personal actions	Some practical suggestions for minimising waste are suggested. Children use these and their own ideas to make a pledge.	Eng, Geog, PSHE	3-6	127
29. How well are we doing?	Children carry out a waste audit in the school to identify what is being done well and what could be improved. Followed by a fun activity to discover a message by cracking a code.	Sci, Maths, Geog, PSHE	5-6	130
30. Becoming a Waste Free Zone	This is a questionnaire to find out how conscious people are of waste issues.	Eng, Maths, Geog, PSHE, ICT	5-6	133
31. Swap shop	Children consider different ways of how unwanted clothes, toys, etc can be 'disposed of' without putting them in the bin.	Eng, Geog, PSHE	3-6	136
32. Buy recycled	Children design a poster or leaflet persuading people to buy recycled products and carry out research on the web.	Eng, ICT, D&T, Geog, PSHE, A&D	3-6	138
33. Challenge Waste! game	Children play the Challenge Waste! game in groups of 2-4. It is similar to Snakes and Ladders.	A&D, PSHE	3-6	140

## Health and Safety

A number of the activities for children involve investigating waste, either picking it up or sorting it. Waste is messy stuff and so precautions are needed.

When picking up litter in the school grounds, provide the children with **plastic gloves**, a **litter picker** (costs about £8.00 from County Supplies) and a **plastic sack** or other container. This way they do not have to touch the waste. Working in pairs, children can take it in turns to use the litter picker and make any recordings necessary. Many schools have told us that litter pickers are very popular pieces of equipment and children are always keen to go litter picking!

It is possible to arrange visits to waste collection and disposal sites. You will be told of any special health and safety requirements before your visit but you might like to make a visit on your own to assess the risks for yourself. Your school will have its own procedures for assessing risk for out of school activities, and these should be followed. At the end of this section there is a risk assessment record based on one used by Groundwork Hertfordshire. This can be used as a guide if required.

## Visits

Visits may be a visit to the school by an education officer, an officer of the local council or an employee of a waste management company or a visit to a waste management facility by the class. Visits should be an integral part of a programme of work and it will be necessary to talk to the staff to state what the children have already done, what you want them to get out of the visit and how you intend to follow it up.

### Visits to the school

Often speakers have a number of standard talks they can offer. None of these may meet your requirements precisely and you may need to negotiate some changes, but this needs to be done when the talk is being booked. The speaker will also have questions such as what facilities do you have, how many children will there be in the class, how long should the input be and will there be questions during the talk or afterwards?

### Visits to a site

It is possible to arrange visits to waste management sites, see **Information and Resources** for details of different types of sites that Hertfordshire schools can visit. There is nothing better than first hand experience to learn what happens to waste. There will always be someone there to look after your group and provide the educational input. However, the teacher remains responsible for the behaviour of the children. It is always advisable to arrange to visit the site in advance so you can talk to the person who will receive your class and also to find out what facilities are available at the site, for example is there a classroom available or a place to shelter and put coats? Are there toilets?

Schools normally have established procedures to help plan out-of-school visits dealing with parental permission, health and safety, number of adult supervisors required, transport, costs and so on. At the end of this section there is a form to help you assess the risk of an out-of-school visit.

## Sources of Support

- **Information and Resources** provides a list of organisations and websites that can provide information and / or support for learning about waste.
- A useful first contact is the WasteAware website - [www.wasteaware.org.uk](http://www.wasteaware.org.uk)

## Sample Risk Assessment Record for Activities and Visits

P = Probability	S = Severity or consequence	Risk Level (L) = P x S
1 = improbable occurrence	1 = trivial injury	0 - 9 low risk
2 = possible occurrence	2 = minor injury	10 - 18 moderate risk
3 = occasional occurrence	3 = major injury	19 - 27 substantial risk
4 = frequent occurrence	4 = major injury to several people	28 - 36 high risk
5 = regular occurrence	5 = death to one person	
6 = common occurrence	6 = multiple deaths	

### Working out the risk

For each potential hazard:

1. Assess the probability of an accident and write down the number from the chart above (P).
2. Assess the severity of the accident should it occur and write down that number (S).
3. Multiply the two numbers together (PxS) and write down the answer.
4. Compare the number with the risk level (L) above.

**Use the form below or a similar one for completing the risk assessment.**

Activity description			
Name of teacher		Age of children	
Potential hazard	Risk (P x S)	Preventative measures	Revised risk
Total		Revised total	

# Background to Pack

## Major Contributors



### **WasteAware**

WasteAware is a campaign which aims to increase public awareness of the problems surrounding household waste disposal and seeks to encourage residents to minimise the quantity of waste they produce by reducing, re-using and recycling their rubbish. Launched in April 1997 by the eleven Hertfordshire Councils the campaign targets schools, families and individuals across Hertfordshire.

WasteAware recognises the importance of education in its campaign work and has been fortunate to receive funding from SQ Environmental Trust through the Landfill Tax Credit Scheme to produce this pack for use in schools.



### **Groundwork Hertfordshire**

Groundwork Hertfordshire is part of a UK-wide Federation of Groundwork Trusts that works with all sectors of the community to improve the environment and to encourage the development of sustainable communities. Working with schools to deliver environmental education projects is a key part of this role. This pack was piloted by our Environmental Education Officer, Sandie Taylor, working in partnership with Theresa Edwards at St Philip Howard Primary School, Hatfield and Graham Roberts at Holwell Primary School, Welwyn Garden City.



### **Main sponsor: SQ Environmental Trust**

SQ Environmental Trust was set up by in 1998 by SQ Environmental, a Hertfordshire based quarrying and waste management company. Its main objectives are to distribute funds raised from the Landfill Tax in support of local community and environmental projects. Since introduction of the Scheme, the Trust has distributed £2 million to schemes ranging from footpaths and bridleways, wildlife habitats, and churches to children's play areas and school grounds.

Mrs Hilary Burningham, a Director of SQ Environmental Trust said "The Trust is delighted to support this exciting initiative. Piloting the specially commissioned Education Packs in two primary schools and one secondary has afforded the opportunity to assess and revise the packs in the light of teacher and pupil reaction. Hertfordshire has an excellent record in environmental education, thanks to forward-looking schemes such as this. The Trust looks forward to seeing these teaching and learning materials in all primary schools in 2005.



### **Welwyn Hatfield Council**

The Council made a financial contribution and were actively involved in the production of this pack.

# Acknowledgements

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The following people also helped to develop the pack

- Barbara James and John Baines from the Bureau for Environmental Education and Training
- Peter Christmas and Linnea Ranger from Groundwork Hertfordshire
- Clare Haworth, Hugo Van Kempen, Faye Clamp, Rebecca Dolton, Natalia Rita, Jo Lines, Helen Gresswell and Jennie Moore from the WasteAware Partnership of Hertfordshire Councils

## Why the pack has been produced

The purpose of this pack is to enable schools to increase their awareness of the issue of waste management and find out what is being done locally to **REDUCE, RE-USE and RECYCLE** waste. Children are concerned about the environment and through the WasteAware **Challenge Waste!** pack they can be encouraged to play a part in influencing their local environment.

## Who it's for

This pack has been prepared for use by Key Stage 2 Teachers and Recycling and Education Officers in Hertfordshire schools. Every primary and special needs school in Hertfordshire will receive a free copy as well as being able to view it on [www.wasteaware.org.uk](http://www.wasteaware.org.uk). Other authorities and organisations may obtain a copy by contacting the **WasteAware helpline on 08457 425000**. (A charge will be made to cover printing and administration costs).