

Eco-Schools Waste/Resource Efficiency

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ECO-SCHOOLS

The Waste/Resource Efficiency topic is very beneficial to your Eco-Schools programme and provides a real practical and measurable way to make your school more environmentally friendly.

Waste is becoming an increasingly pressing issue for schools and society to find an environmentally positive solution to. Every school has an excellent opportunity to make a real difference to the waste they generate and to encourage and educate pupils to make constructive waste choices both in school and at home. The WWF Living Planet Report shows the demand on natural resources has doubled since 1966 and we are currently using the equivalent of 1.5 planets to support our activities. In the UK this is worse; almost **3 Earths** are needed to support the way we live.

Relative waste costs: landfill and recycling



Landfill bin



Recycling bin

What is Waste?

Although waste can relate to a misuse of any resource, this booklet focuses on items that have been discarded, ie. your rubbish. Waste discussed here is in particular reference to rubbish that is being sent to landfill. We would like to encourage you to view waste as a resource and think of ways to reuse or recycle it, and ultimately through good resource efficiency, reduce it.

Why care about Waste?

Waste that is sent to landfill causes many negative environmental impacts such as -

- it is unsightly and smelly
- it creates litter
- landfill emits dangerous greenhouse gases
- litter harms wildlife
- runoff pollutes ground water
- it takes up a lot of space

It is also expensive. Because landfill taxes are so high and because recycling materials is more cost effective it is much more expensive to dispose of waste to landfill than to recycle it. It costs around £1,000 pounds to empty a bin lorry of waste compared to only £100 pounds for recycling. Material for



recycling is valuable to manufacturers. This cost is reflected in the price to lift your general waste bins at school which are more expensive for the school than a recycling bin.

Why Recycle?

By switching some of your school bins from waste to recycling you could save your school money.

You will also help the environment in lots of ways, not just in reducing waste to landfill but also by saving the use of raw materials to make new products.

Interesting facts about waste and recycling:

- In Northern Ireland we recycle less than 50% of our household waste even though around 70% could be recycled.
- One-third of the food produced in the world is wasted. This would take an area the size of China to grow each year.
- On average over 50% of school waste is paper.
- Recycling paper saves 70% more energy than making new paper.
- Plastic is not biodegradable. A plastic bottle in landfill will take thousands of years to breakdown.
- In Northern Ireland we use an average of 95 plastic bottles per person per year.
- 25 plastic bottles can be recycled to make a fleece.
- One tonne of recycled paper saves around 17 trees.

The Waste Hierarchy



Recycling and reusing materials are great options; they are easily implemented and make an immediate impact on your waste. An overall reduction in waste created is always the very best option, as a certain amount of raw materials will always be needed to make new paper and plastic, the less we use the better it is. Also a reduction in consumption could be reflected in a cost saving to your school – for example a reduction in paper being ordered. The environmental impact of burning or dumping waste will always make them the least desirable options.



Waste/Resource Efficiency topic ideas



Paper

Lesson idea

Introduction

Explain that paper is made from trees which convert our carbon dioxide emissions into oxygen which we need to breathe. This of course means that trees are very important to us. Every household uses around 3 trees worth of paper every year.



'Paper Forest' activity

Using scrap paper, old magazines, newspapers or junk mail that the pupils have brought to class have each pupil cut out and make 3 tree shapes about 12 cm tall. Pin all the trees to a notice board to represent the forest of trees that the pupils use each year. Calculate how many trees there are for the class and how many there would be for the whole school.

Have the pupils work in pairs or teams to discuss ideas about why forests are important and what the consequences would be if they were all cut down (include prompts for habitat loss, oxygen loss, flooding and erosion).

On one side of the 'forest' on the notice board pin up good things about forests and on the other pin up the consequences of deforestation the pupils have discussed.

Practical actions for paper

- 1 Put paper recycling into place in school
- 2 Put a scrap paper tray in each classroom for rough work
- 3 Encourage double sided printing
- 4 Reduce font size and use narrow margins on documents you print
- 5 Explore the possibility of electronic messaging home by text or email instead of notes
- 6 Monitor the amount of paper ordered by the school and attempt to reduce it year on year
- 7 Families could sign up for the Mail Preference Service, a free service which can reduce your junk mail by up to 90%. www.mpsonline.org.uk

Plastic

Lesson idea

Introduction

Explain that plastic is made from oil. Oil is a non-renewable natural resource. Plastic production uses 8% of the world's oil. Worldwide we use around 100 million tonnes of plastic each year. Plastic makes up to 90% of the rubbish in our oceans and is posing an increasing threat to wildlife.

Ask pupils what they think a non-renewable resource is. Explain the



implications of wasting a non-renewable resource. Have the pupils look around the classroom and write down or say everything they can see that is made of plastic.

'Garbage Graveyard' activity

Give small groups of pupils an item of 'garbage' - select a variety of materials to give out. Have the pupils match up the decomposition times you supply to their 'garbage' item – let them first guess which goes with which. Label each item showing their decomposition time and place them all in a creative 'Garbage Graveyard' display. The pupils can discuss what they have found out. What has surprised them? Will some of the materials still be around long after their lifetime?



Garbage decomposition times

- Plastic bottle: 450–1,000 years
- Plastic bag: 10–20 years
- Laminated paper: 10–20 years
- Paper: 1–12 months
- Nylon fabric: 30–40 years
- Disposable nappy: 450 years
- Cigarette butts: 2–5 years
- Aluminium can: 400–500 years
- Orange or banana peel: up to 2 years
- Glass bottle: forever
- Styrofoam: forever

(Decomposition times will vary depending on environment and size of item)

Practical actions for plastic

- 1 Put plastic recycling into place in school
- 2 Encourage pupils to reuse bottles before recycling them - explore the idea of sourcing school branded reusable water bottles for pupil use
- 3 Laminate less – use reusable poly pockets instead if possible
- 4 Use a reusable lunchbox instead of sandwich bags
- 5 Always use reusable shopping bags – could you produce and sell a school branded reusable bag to raise funds for your Eco-School activities?
- 6 Make a plastic bottle greenhouse



www.ecofriendlykids.co.uk/build-greenhouse-plastic-bottles

Composting

Collecting compostable waste in school is a great way to reduce your landfill impact. Food and compostable waste creates on average the second largest waste stream in schools by weight. Compostable waste in landfill also creates a large proportion of methane gas, a dangerous contributor to climate change.

Here are 3 options for disposing of compostable waste at school:

- 1 Contact your local council or waste collection company about the possibility of having a brown bin / compostable bin collection from the school.

② Start garden composting and use the resulting compost in your school grounds.

③ Use a wormery as a fun and educational way of disposing of small amounts of compostable waste. The by-products from a wormery are also excellent for plants.

Both garden composting and wormeries are lots of fun but require a little bit of foreknowledge so make sure you research what you can use and how much you should use before you get started.



Contact your local council waste department for advice on garden composting and wormeries or visit www.rethinkwasteni.org for more information on what goes in your composter. Information can also be found for composting and wormeries on the Royal Horticultural Society website advice page www.rhs.org.uk/advice

Food

Food waste is a serious issue. We throw away millions of tonnes of food each year and waste billions of pounds on discarded groceries. Money isn't the only issue though – wasting food causes a massive environmental impact not only in landfill but also the amount of energy that has gone into growing, preparing, transporting and storing your food.

Correct portion sizes and careful planning can help prevent so much waste. For more information, ideas and resources go to the Love Food, Hate Waste website ni.lovefoodhatewaste.com

Your school could take steps to prevent food waste by taking part in the Eco-Schools Food Waste Challenge. Contact Eco-Schools for more information eco-schools@keepnorthernirelandbeautiful.org

Other waste

Why not set up textile recycling at your school? Cookstown Textile Recyclers run a 'Cash for Clobber' scheme with schools which could see your unwanted clothes raising a little bit of money for school funds while helping people in need. They also run an annual schools competition with the winning schools collecting the most clothing per pupil. Go to their website at www.c-t-r.com for more information.

Over 45 million printer cartridges go into landfill each year. Recycle your empty ink-cartridges from printers and photocopiers with www.emptycartridge.co.uk/school-recycling-services

Batteries pose a chemical danger to the environment if not disposed of properly. European Recycling Platform will provide a free recycling service to your school. Find out more information on www.erp-batteries.co.uk/schools

Monitoring and evaluating

Step 4 of the Eco-Schools programme requires keeping track of the impact your actions have had through monitoring and evaluating your progress. It is a good idea to do a baseline audit of how waste is handled in your school before you even do anything to improve the situation.

Your waste can be monitored by how many bags or bins you have or by how much weight is collected. The easiest way to see what is happening with your waste is to take a walk with your caretaker to have a look at what bins are collected from the school, what size they are and how often they are collected. Your caretaker can probably give you an idea of how full they usually are too. Take a peek inside – can you see recyclable waste going to landfill?

Make a record of the results you have discovered in your School Zone, Data Zone by logging into the website www.eco-schoolsni.org. Your waste collection company may be able to supply you with the weight of waste being lifted from the school.

Now you have your baseline audit done you need to think about what improvements you can put in place and how to communicate what you want to do with the rest of the school.

Setting up recycling

After you have had a look at the current bin situation in the school, and found out who lifts the waste from your school, you should chat to them about the possibility of switching a waste bin to a recycling bin. This should be cheaper and actually save the school some money as you will be sending less waste to landfill. They may be able to simply switch the allocation of one of your current bins so no extra cost should be incurred. Internal bins in classrooms and staffrooms for dry recyclables can simply be cardboard boxes to begin with – a perfect reuse of paper delivery boxes!



It can be worth shopping around to see which waste suppliers will be able to provide you with a service which is best for your school.

Contact Eco-Schools

eco-schools@keenporthireland.beautiful.org for help and advice.

Once you have a recycling collection organised let everyone in the school know what you are hoping to do and why it is so important. An assembly and/or poster campaign would be a good idea. Make sure your recycling bins are labelled and keep an eye on the contents as you are emptying them. Keep reminding everyone what to do and monitor your progress. Share your waste reduction successes with the whole school and keep note of the results in your Data Zone.



DAERA

Department of Agriculture,
Environment and Rural Affairs
www.daera-ni.gov.uk

For further information,
ideas and waste/
resource efficiency in
schools case studies visit:

www.eco-schoolsni.org

www.eco-schoolsni.org/Case-Studies.aspx

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