

Waste Audit

Overview

In order to identify what your school throws away, and any particular problem areas, a waste audit can be carried out. This involves collecting, sorting and weighing waste from around the school in order to inform an action plan that aims to reduce the waste and improve recycling.

The waste audit is a 3 session activity:

Session 1: Waste Audit preparation

Session 2: Waste Audit (½ day) to be carried out at least 1 day after the preparation session

Session 3: Waste Audit Action Plan

Curriculum links

Science - Working scientifically

- *Everyday materials* – sort and group recyclable items according to the material they're made from

Maths - Solve problems by applying mathematics

- *Measurement*
- *Number – addition, subtraction, multiplication & division*

IT – Data representation

- *Use technology purposefully – information handling*



Session 1: Waste Audit preparation

Resources

- Bin bags (enough for 1 per bin in school)
- Sticky labels (for labelling bin bags)

Introduction

*What happens to the rubbish in school? Do we **reduce, reuse & recycle**?*

What sorts of things do you think normally get thrown away?

How could we find out? (Look in the bins!)

What do you think we could do to measure this? (If children come up with tally idea explain the problem with small/big objects. Lead towards weighing materials)

Planning the audit

- On the board make a list of all the places around school where there are bins and note what types of bins they are (waste, recycling or composting):

Area	Waste (W)	Recycling (R)	Compost (C)
Library	✓	✓	
Class 1	✓	✓	✓
School office	✓	✓	

- Discuss with the group if all the areas on the list are safe to collect from. Areas that may not be safe include:
 - Kitchen – please see note below
 - Playground – you may want to do a simple observational tally during break time to find out what goes in the playground bins. We do not recommend asking the children to sort through this waste
 - Medical rooms – this should **not** be included in the audit
 - Toilet cubicles – this should **not** be included in the audit
- Label a bin bag for each bin that will be collected from –
****The label must include the area of the school to be collected from and the type of waste****
- If a room/area has more than one type of bin (waste, recycling, compost) you should use a separate bag for each, e.g.



- At the end of the school day, the day before the audit is due to take place, waste should be collected in the labelled bags from the agreed areas. (Ask the caretaker **not** to collect waste/recycling as usual on that day)
- The collected waste should be stored in a safe area overnight

Kitchen waste

- If possible, ask the kitchen staff to keep the food waste and packaging waste separate on the day the waste is collected for the audit
- Ask the kitchen staff to weigh the kitchen food waste at the end of the lunch break and record the result. The food waste can then be thrown straight into the bin. Children should **not** be asked to sort through food waste
- If kept separate, the packaging waste can be saved and sorted into material types during the pupils' audit. If it is not separated, then it must be weighed with the food waste and dealt with in the same way as above.

Points to note for the day of the audit

- All long hair should be tied back
- Over shirt/apron may be worn to protect clothing
- Extra adult help will be needed on the day (ideally enough for 1 adult to every group of 5/6 children)
- On the day of the audit all the collected waste should be taken to one large area (the school hall is ideal), sorted and weighed
- Data will be collected on worksheets and the results will be used to formulate the school's action plan

Session 2: Waste Audit

- A large well ventilated indoor space is required for this activity (e.g. school hall)
- The activity takes about 2 hours to complete
- Please allow additional time for set up prior to the activity and clear up at the end
- It is recommended that you divide the pupils up into small groups of about 5/6 for this activity with an adult helper for each group

Resources:

- 1 large plastic sheet per group (to protect the floor)
- Set of 4 spring balances/luggage scales per group
- 1 clipboard & 1 pencil per group
- A pair of gloves for each person
- Worksheets ('Waste check sheet' – see below)
- Plastic carrier/pedal bin bags
- A set of bathroom scales
- Material signs (paper, cardboard, plastic, metal, glass, food & green waste, fabric, other)
- Dustpan and brush
- Buckets and cleaning products for the sheets after the audit

Workstation set up:

- Set up a workstation for each group as per the pictures below:



- Stick the material signs to a wall so that the sorted bags can be placed under the correct sign at the end of the audit

Health & safety discussion prior to activity

- Ensure all long hair is tied back
- Gloves must be worn at all times when handling rubbish (gloves may be removed if writing)
- Do not touch face with gloves
- Empty the rubbish bags gently onto the plastic sheet from a low height
- Make sure rubbish is kept on the plastic sheet (not on the floor!)
- Walk around the edge of the plastic sheets, **not** across the middle where the rubbish is
- If you find anything sharp or dangerous, or if the material is wet or sloppy, tell an adult immediately and do not touch
- If you need any help, ask an adult
- Wash hands when activity is finished

The audit

- Each group should take one bag of rubbish. One person from each group should weigh themselves on the scales without the bag of rubbish and then with it to ascertain how much the bag weighs
- One person in each group should be given the job of writer and complete the top section of the 'Waste check sheet'. The writer may remove their gloves but should **not** touch any rubbish. The job of writer should be rotated throughout the course of the audit
- The bag should then be taken back to the group and emptied onto the plastic sheet
- On the plastic sheet, sort the rubbish into the different material types listed on the work sheet
- Place the sorted rubbish into the carrier bags (use a separate bag for each different material) and weigh with the spring balances/luggage scales. Record the weight of each on the work sheet
- Note any interesting or unusual findings in the bottom section of the 'Waste check sheet'
- The bags of sorted rubbish should be lined up in front of the wall under the appropriate material signs
- Once all the bags have been sorted, the plastic sheets should be washed, floor swept and gloves, clipboards, spring balances and pencils collected
- All completed worksheets should be collected as this data forms the basis of the waste audit action plan

Plenary

Which materials are thrown away most in school? (Use the bags as a visual guide)

Did you notice anything interesting when you were sorting the rubbish?

Do you think all the materials/items had been placed in the correct bins?

*****Remind the pupils to wash their hands*****

Session 3: Waste Audit action plan

Preparation

- Before the start of this session it is useful to enter the data collected from the waste audit onto a spreadsheet with graphs, so the group can view the results more easily
- It is useful to record the waste and recycling data on separate sheets so you can see how much you're already recycling

Aims of this session

- Identify areas in school where unnecessary waste is created and the type of materials that are wasted most in school
- Calculate weekly, monthly & yearly totals (optional according to age and ability)
- Understand and discuss ideas to reduce, reuse and recycle waste in school and to compile an action plan to take these ideas forward

Explain that in this session you will be looking at the results from the Waste Audit you carried out, using them to identify waste hotspots in school and then drawing up an action plan to improve the use of the 3Rs.

Begin by looking at the graphs and spreadsheets and share totals of waste and recycling. You may want to calculate total waste in school for a day, a week (5 days) and a year (40 weeks). You could also relate this to the equivalent weight in pupils or something else they can identify with more easily. Explain that it's really important to find an alternative because at the moment all this is going to an energy from waste plant.

Identify rubbish hotspots by discussing:

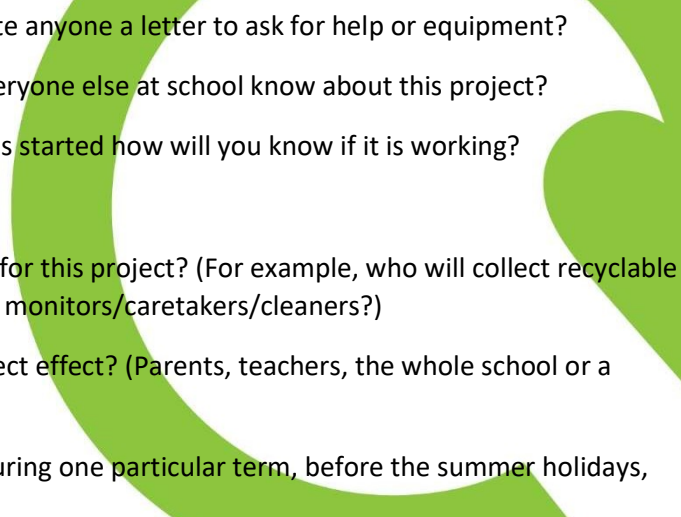
- Which 3 areas in the school throw away the most?
- Which 3 materials get thrown away the most?
- Are any other issues raised by the results?

Use these findings to agree some areas/materials to target.

The children could break into smaller groups and discuss how they will raise awareness in school and encourage waste reduction, reuse and recycling.

Points to discuss for each chosen action:

- Are your ideas possible?
- How will you do it?
 - Think about all the equipment you will need and where you will put it
 - Do you need to ask anyone for permission for this project?

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- Do you need to write anyone a letter to ask for help or equipment?
 - How will you let everyone else at school know about this project?
 - After the project has started how will you know if it is working?
 - Who will do it?
 - Who is responsible for this project? (For example, who will collect recyclable rubbish from bins – monitors/caretakers/cleaners?)
 - Who does this project effect? (Parents, teachers, the whole school or a particular class?)
 - When will your project happen? (During one particular term, before the summer holidays, once a term etc.)

These ideas should form the start of the school's action plan.

e.g.

Action target	How?	Who?	When?	Monitoring/ evaluation
Compost fruit & vegetable waste	<ul style="list-style-type: none">- Place compost caddies in main areas of school- Empty caddies into compost bin- Encourage all staff & pupils to use compost scheme	<ul style="list-style-type: none">- Teacher to order caddies- Monitors to empty caddies- Class 1 pupils to make posters, give assembly presentation	<p>Start summer term</p> <p>Empty caddies daily</p>	

The action plan should be a working document that evolves over time so when it has been in place for a term or so it is a good idea to review it to check on progress, look at whether all the action targets are still appropriate or whether anything new has come to light.

Waste Check Sheet

Names:	
Area of school:	Bin type (please circle): waste recycling compost
Total bag weight:	Date:

Sort the waste into different materials then record the weight of each material type below:

Material	Weight (g)
Paper	
Cardboard	
Plastic	
Metal	
Glass	
Food & green waste	
Fabric	
Other	

Notes – any interesting findings?

Paper

Plastic

Cardboard

Metal

Food & Green
Waste

Other

Glass

Fabric