

# Waste Audit

## Key Stages 1 & 2

### Objectives

- Identify the main areas of the school where waste is collected
- Plan an audit of the school's waste
- Collect and sort waste into categories of materials e.g. paper, aluminium
- Make careful, accurate and scientific recorded measurements of their school's waste

### Resources

- Helpers, one per group
- Old carrier bags (eight for each group)
- 10-20 large bin bags and labels
- Spring balances or Newton meters
- Ground sheet/floor covers
- Clipboards with copies of the recording sheet
- Rubber gloves (one pair for each)
- Overalls, or old clothing
- Magnets



# Curriculum

## Maths

### Measurement

KS1

- compare, describe and solve practical problems for:
  - mass/weight [for example, heavy/light, heavier than, lighter than]
- measure and begin to record the following:
  - mass/weight

### Statistics

KS2

- interpret and construct simple pictograms, tally charts, block diagrams and simple tables
- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- interpret and present data using bar charts, pictograms and tables

## Science

### Working scientifically

KS1

- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

### Everyday materials

- distinguish between an object and the material from which it is made
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock

### Working scientifically

KS2

- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate



## Forces and magnets

- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials

KS2

## Living things and their habitats

- recognise that environments can change and that this can sometimes pose dangers to living things

## Properties and changes of materials

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

# Activity

*Please note: Parents may be concerned with their children handling waste whilst participating in the waste audit – you may wish to send out consent forms*

## Preparation

Carry out a risk assessment for the activity and let all staff know when the audit will take place. Work with the person in charge of waste collections in your school (usually the caretaker or site manager) to make sure that you don't pick a day when there is hardly any waste or when there is far too much.

## On The Day

Ensure that a number of plastic sheets have been laid down in the hall alongside the other equipment ready for the waste and ask the caretaker or site manager to bag up and label the waste from the various locations in the school and bring the bags to the hall. Any potentially hazardous and perishable waste (i.e. kitchen) should be bagged up separately so they can be weighed safely without opening.

Ask the caretaker or site manager when the last collection was and work out (or get your class to later) how many school days it has been since the waste was collected. You may have to calculate more than one total as different materials may be collected at different times.

## The Audit

First explain health and safety issues to the students, for example, gloves must be worn before touching any waste, students should call an adult if they see any sharp objects in the rubbish etc.



Weigh any potentially hazardous and perishable waste bags (e.g. from the kitchen) with the whole class/group, log the results in grams on the recording sheet before replacing the waste in the appropriate area for its normal collection.

Divide a class/group into three to four smaller groups. Each group should have a fully briefed and capable helper, as well as a ground sheet to work around, a recording sheet and pencil, and a set of spring balances or Newton meters. Each child should wear protective rubber gloves and overalls or old clothes if deemed necessary.

Each group should empty the contents of one bag of rubbish at a time onto the plastic mat and sort it into the different types of waste shown on Worksheet 1. They should fill in the location on Worksheet 1 from the label on the bag. Then sort the waste into bags (a separate bag for each waste type) and weigh them using an appropriate spring balance or Newton meter and log the results on the recording sheet.

Once the contents of the carrier bags in each group have been weighed and recorded, the bags can be emptied into larger bin bags and the smaller bag can be re-used.

When all bags have been sorted and the data has been recorded, replace the waste in the appropriate area for its normal collection.

### **The Follow Up**

The next time the class/group meets you will be able to calculate the daily, weekly and annual waste totals for the whole school. The daily total can be calculate by dividing the totals weighed by the number of school days since they were last collected. Other calculations can include;

- Multiplying the daily totals by five will give the weekly results
- Multiplying the weekly results by 39 (the average number of weeks per year spent at school) will give the results for the year
- You can also work out the percentage of different types of waste produced

Comparing waste data from different areas around your school will help identify waste 'hot-spots'.

You should then discuss your findings;

- What are the most common types of waste?
- Is any of it recyclable?
- Which type of waste would make the biggest difference if recycled?

Use the information from your waste audit to plan or improve your recycling scheme as outlined in the 'Action plan' activity.

