

Metal recycling and electromagnets

Introduction

We use metals to make a wide variety of products, from cars to food cans, but there are limited supplies of metals on Earth. People are encouraged to recycle metals as often as possible, and electromagnets are used in the recycling process.

In this activity you will use your research skills to find out about:

- the types of metals that can be recycled
- the benefits of recycling metals
- how metals are sorted in recycling plants
- how electromagnets are used in scrap yards.

You will be using your literacy skills to produce a leaflet for a recycling company to give out to members of the public who want to learn about recycling.

Brief

You are going to produce a leaflet for a recycling company to give out to members of the public who want to learn about recycling.

Your leaflet should:

- begin with an explanation of the benefits of recycling metals
- include a few examples of how recycled metals are used
- mostly be about the use of electromagnets in metal recycling
- describe some types of metals that can be recycled, with examples
- fit on one folded piece of A4 paper
- be interesting for members of the public.

Step 1

Before starting your research, remind yourself what an electromagnet is and how its strength can be changed.

Step 2

Research the following topics:

- the benefits of recycling metals
- how recycled metals are used
- what types of metals can be recycled
- what a recycling plant is and how electromagnets are used there
- what a scrap yard is and how electromagnets are used there.

Step 3 (extension)

Some people say that more energy is used to recycle metals than is saved. Carry out some further research to find out whether energy is saved overall if we recycle metals.

Step 4

Plan appropriate sub-headings to structure your leaflet and the important information you want to include.

Step 5

Make your leaflet, including pictures where appropriate.

Sources**Why should we recycle metals?**

This site explains the benefits of recycling metals:

<https://www.recyclemetals.org/about-metal-recycling.html>

What metals can be recycled?

This website describes the types of metals that can be recycled:

<http://www.lessismore.org/materials/14-metal>

How are metals sorted?

This website describes how metals are separated in recycling plants; it includes a video:

http://www.recycleaid.co.uk/metal_recycling/metal-recycling-process-2/

Electromagnets in scrap yards

This website explains how electromagnets are used in scrap yards:

www.zephyrus.co.uk/useelectromag.html

Is it worth recycling? (extension)

This site is about the costs and benefits of recycling metals:

<http://large.stanford.edu/courses/2012/ph240/micks2/>

Writing frame

You are going to produce a leaflet for a recycling company to give out to members of the public who want to learn about recycling.

Summarise your research findings on the key areas below.

What are the benefits of recycling metals?

What are recycled metals used for?

What metals can be recycled?

How are electromagnets used in recycling plants?

How are electromagnets used in scrap yards?

Is energy saved overall if we recycle metals?
(extension)

Important points

- Make sure your leaflet fits on one folded piece of A4 paper.
- Your leaflet should be interesting for members of the public and easy to understand.
- Use sub-headings to organise your leaflet, and include pictures.

Your work

You have now made a leaflet for a recycling company to give out to members of the public who want to learn about recycling.

Look at the questions below and check whether you have met all the criteria given in the brief.

- Does your leaflet begin with an explanation of the benefits of recycling metals?
- Have you included a few examples of how recycled metals are used?
- Is most of your leaflet about the use of electromagnets in metal recycling?
- Have you explained what a recycling plant is and how electromagnets are used there?
- Have you described some types of metals that can be recycled, with examples?
- If you have done the extension task, have you included some information on whether energy is saved overall if we recycle metals?
- Does your leaflet fit on one folded piece of A4 paper?
- Is your leaflet interesting for members of the public?
- Have you included pictures, and used appropriate language?