

# Earth

## 4. Earth's Resources

### CONCEPT 3

### LESSON GUIDE

## RECYCLING

### PRECISE LEARNING POINTS

#### KNOW

I know what recycling is.

#### APPLY

I can apply my knowledge to describe the advantages and disadvantages of different recycling processes.

#### EXTEND

I can extend my knowledge to evaluate the impact recycling.

### NOTES

It's something that most of us do on a daily basis – but what is recycling?

Recycling is the process of collecting and processing waste materials to make new products. But only certain materials can be recycled!

On average, the total amount of rubbish produced by households in the UK is 82,000 tonnes every day. Weekly, a typical British family will use an average of:

- 7 glass jars or bottles
- 14 cans (food or drink)
- 8 plastic bottles
- 4kg of paper

These numbers fluctuate throughout the year – just think how much more there is around Christmas! Putting this rubbish in landfill sites or burning it is unsustainable, as landfills are running full to busting, and burning releases poisonous gasses to our atmosphere! Recycling is the sustainable alternative. Recycling helps lesson the waste and demand on natural resources as well as helping the environment.

Many materials can be recycled – and recycling bins often show you what they can take! Many of us now recycle plastic bottles, paper, cans, clothes and wood. We currently recycle about 43% of our household waste. Unfortunately, this number varies across the country, with some places not offering households any form of recycling.

Although in general recycling is a great thing, it does have some disadvantages. Recycling sites can also produce pollution and are often unsafe and unhygienic. The initial costs of setting up the recycling plants is very high, and the breakdown of certain materials requires a lot of energy. The quality of recycled products also varies, with some materials like paper and textiles being often low quality.

There is a lot of debate about how efficient recycling really is. The efficiency is dependent on the material in question. In most cases, the energy needed to extract and process the natural resources is much higher than that used to recycle. This means that recycling is better for the environment as that energy doesn't need to be created through the burning of fossil fuels.

Materials such as metals and glass are quite efficient to recycle. It's easy to melt down the glass or metal to reform into a similar product that it came from. However, some materials such as plastic bottles made from PET (a form of plastic) must be 'down-cycled'. This means they don't get recycled to create the product they were originally, and that the product they create can't then be recycled. What often happens is that the plastic gets broken down into fibres of polyester for the making of clothes and carpets.

Unfortunately, there is no economic incentive for people to recycle, the cost is £0 if you recycle or if you put rubbish in the bin. This means that the recycling industry struggles with inconsistent flow of recycling, and you now see countries like China importing recycling to continue the flow. People are becoming innovative with recycling, for example in Brazil old car tyres are cut up to make the soles for beach sandals. The rubber is hard wearing, waterproof and has good grip – so an excellent fit!