

Materials and the Earth

Lesson 13: Recycling Resources

Science

Chemistry - Key Stage 3

Miss Willett



What have you learnt already?

1. **What is a composite material?**
2. **Where is crude oil extracted from?**
3. **What is a fossil?**



Reducing materials What am I?!

Customers now have to buy carrier bags they can use every time they shop

Metal from cans is collected and melted into liquid. It can then be made into something new.

Plastic bottles can be collected and used to make the walls of a greenhouse; it has the same effect as glass!



Reducing materials What am I?!

Sometimes old pieces of furniture can be improved, using other unwanted items (like clothing you were going to throw away)

Polystyrene from packaging can be processed in a factory and turned into plastic for photo frames

More people than ever now use water bottles that can be refilled, instead of buying new ones each time



Reducing waste:

Answer the following questions:

1. What is meant by recycling a material?
2. What is meant by reusing a material?
3. What is meant by upcycling a material?
4. Give an example of a material that has been upcycled.
5. Why might reusing a material be preferable to recycling or upcycling?



Reducing waste:

Answer space:

1.

2.

3.

4.

5.



Recycling Pro or con?

Reduces air and water pollution

Saves energy, so cuts down on greenhouse gas emissions

Council recycling collections means regular waste is only collected once a fortnight, increasing the risk of vermin

Can cost more than using a landfill, due to processing and sorting



Pros and cons of recycling:

Complete the following:

'There are many advantages to recycling, for example...'

'However there are also disadvantages, such as...'

'Overall I think recycling is because...'



Which town is better at recycling?

Calculate using the equation:

	Town A	Town B
Total paper waste (kg)	360, 000	270, 000
Recycled paper waste (kg)	10, 000	150, 000
Total glass waste (kg)	600, 000	135, 000
Recycled glass waste (kg)	500, 000	115, 000
Total food waste (kg)	120, 000	90, 000
Recycled food waste (kg)	80, 000	50, 000

$$\left(\frac{\text{Total kg recycled}}{\text{Total kg waste}} \right) \times 100$$

- Town A paper? 2.78%
- Town B paper? 55.56%

- Town A glass? _____
- Town B glass? _____

- Town A food? _____
- Town B food? _____



Bringing it together..

Use your understanding to answer the following:

1. Which Town was better at recycling (use DATA from your previous task!)
2. Advise the 'losing' town on how they could reduce:
 - Glass waste
 - Paper waste
3. Why problems might the 'losing' town face, that stops them from recycling more?



Bringing it together..

Answer space:

1.

2.

3.

