

MASTERS OF INFINITY

QUESTS



SUPERMARKET SAVIOURS

Your friend is planning a birthday party. You find them in the supermarket with a trolley full of food and drink in recyclable and non-recyclable packaging.

Help them get rid of the things that will feed Land Phil and make better choices. Can they fill their trolley with more recyclable options?

Use the shopping list below to decide which items they can buy. Use the [Infinity Cards](#) and the plastic recycling chart to work out what the item is made from, and if it's recyclable, then complete the table.



IN THE TROLLEY	PACKAGED IN	MADE FROM?	RECYCLABLE? (Y/N/SOMETIMES)	BUY? (Y/N)	IF NO, SUGGEST AN ALTERNATIVE
Custard	Food can				
Plastic cutlery	Plastic bag				
Whipped cream	Aerosol				
Fizzy pop	Clear plastic bottle				
Mayonnaise	Glass jar				
Crisps	Crisp packets				
Table cloth	Plastic				
Yoghurts	Plastic pots				
Fizzy pop	Drink cans				
Food trays	Foil				
Fruit	Plastic				
Baked beans	Food can				

1	WIDELY RECYCLED PET (Polyethylene Terephthalate) Clear plastic bottles e.g. Soft drink bottles, mouthwash and water bottles, clear plastic jars, some yogurt pots	
2	RECYCLABLE – CHECK HDPE (High Density Polyethylene) Stiff plastic – often coloured e.g. Milk bottles, bleach/detergent bottles, shampoo bottles, margarine tubs, bottle cap	
3	NOT RECYCLABLE PVC (Polyvinyl Chloride) e.g. Plastic films found on fruit and vegetable packaging	
4	RECYCLABLE – CHECK LDPE (Low-Density Polyethylene) Hard flexible plastic e.g. Bread bags, frozen food bags, squeezable bottles i.e. hand cream bottles	
5	RECYCLABLE – CHECK PP (Polyethylene) e.g. Packing tape, takeaway tubs, ketchup bottles, straws, (carrier bags are mainly recycled at supermarkets)	
6	NOT RECYCLABLE PS (Polystyrene) e.g. Foamy takeaway packaging, disposable cutlery, some meat trays, some yogurt pots, styrofoam	
7	NOT RECYCLABLE This categorises all other plastics including bioplastic, composite plastic like crisp packets and plastic coated wrapping paper polycarbonate (which contains BPA)	

ENERGY WARRIORS

Task 1

As well as reusing resources, recycling saves energy! Use the statistics on recyclability from the [Infinity Cards](#) to complete the rest of the table below.

MATERIAL	RECYCLING ONE TONNE SAVES HOW MUCH CO ₂ EMISSIONS?	RECYCLING ONE TONNE SAVES HOW MUCH RAW MATERIAL?	RECYCLING SAVES WHAT % OF ENERGY?
Aluminium			
Steel			
Glass			25%
Plastic	1.5 tonnes	2.2 tonnes	

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Task 2

Each of these towns has saved the following amount of recyclable packaging. Each pictogram represents one tonne of materials. Count how much packaging material they have recycled to help you complete this task.



Tonnes of aluminium _____
 Tonnes of steel _____
 Tonnes of glass _____
 Tonnes of plastic _____



Tonnes of aluminium _____
 Tonnes of steel _____
 Tonnes of glass _____
 Tonnes of plastic _____



Tonnes of aluminium _____
 Tonnes of steel _____
 Tonnes of glass _____
 Tonnes of plastic _____



Tonnes of aluminium _____
 Tonnes of steel _____
 Tonnes of glass _____
 Tonnes of plastic _____

Can you work out how much has been saved in CO₂ emissions using what you learnt above? Now rank them from the most energy saving, to the least.

TOWN	GLASS BOTTLES CO ₂ SAVED	PLASTIC BOTTLES CO ₂ SAVED	ALUMINIUM DRINK CANS CO ₂ SAVED	STEEL FOOD CANS CO ₂ SAVED	TOTAL CO ₂ SAVED	MOST TO LEAST ENERGY SAVED (1 TO 4)
Wigglesfield						
Bowley						
Minton						
Winhampton						

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BIN BUSTERS

Your neighbour is putting their bins out. But wait! Where's the recycling? Think of all that waste going to power up Land Phil!

Task 1

Clearly, your neighbour doesn't know why recycling is so important! Persuade them of the need to recycle. You could do this through a short speech, letter, poem, song or rap!



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Task 2

Recycling is different depending on where you live. Do some research to find out what you can recycle in your area, and instructions on how to recycle it. Make a mini poster for your neighbour to help them in future.



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PROPERTIES POWER UP

Task 1

Match the properties and their definitions.

PROPERTY OF MATERIAL	DEFINITION
Corrosion resistant	Breaks easily
Durable	Does not rust
Malleable	Lasts for a long time
Brittle	See through
Transparent	Can be moulded into different shapes

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Task 2

Use the [Infinity Cards](#) to find the properties of the different materials and write them in the table below, then think about their advantages and what they can be used for.

MATERIAL	PROPERTIES	ADVANTAGES	WHAT THEY CAN BE USED FOR
Aluminium			
Steel			
Glass			
Plastic			

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PROPERTIES POWER UP

Task 3

Ally and her crew are looking for new objects that they can create from recycled packaging. Design items made from the four materials and label them with their features and properties. Be creative! Each person in the team could design a different item.

