



6 RS CHALLENGE



IN PARTNERSHIP WITH



GFG
FOUNDATION





6 Rs CHALLENGE



RETHINK – REFUSE – REDUCE – REUSE – RECYCLE – REPAIR

The six Rs are very important when it comes to managing our waste to make the world a better place.



Every year we throw away over 2 billion tons of waste globally - if this was put on trucks it would go around the world 24 times!



Every year, 8 million tons of waste ends up in our oceans - the equivalent of dumping 112,123 Boeing aeroplanes into the ocean each year!

You've probably heard of the three Rs of waste management - reduce, reuse, recycle. This is a simple yet effective way to help us cut down on waste.

Recently, three more Rs have been added to the mix. These stand for: *rethink*, *refuse*, and *repair*, and by following these steps we can reduce the amount of waste that gets sent to landfill and make sure we get as much use as possible out of the things we buy. This will have many positive effects on the planet.

RETHINK
Do we actually need all the things we buy? Could products be designed in a way that considers people and the environment?

REFUSE
Don't buy something if you don't need it, or if it's bad for the environment. One easy thing you can do is refuse plastic bags at the supermarket!

REDUCE
Reducing the resources we go through starts when shopping - only buying what we really need, buying things that can be used again, and choosing packaging-free products where possible.

REUSE
By reusing old or second-hand items or re-purposing products and packaging, we throw fewer things away and help conserve the planet's resources by producing fewer new products.

RECYCLE
Recycling products means we don't need as many raw materials, and don't need to use huge amounts of energy producing them. This helps to preserve natural resources, and reduce what is sent to landfill.

REPAIR
When a product breaks or stops working properly, try to repair it rather than replacing it. If it can't be repaired, could you REUSE it?



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INVESTIGATE – WHAT DO YOU DO WITH YOUR WASTE?



Before looking at the 6 Rs Challenge, it's important to do some research into recycling and waste management.

- Find out what recycling facilities you have in your local area.
- Research some companies in the waste management sector in your country - what do they do? You could find out about specific jobs with these companies, or look at the effect the companies have had on waste management globally.
- Spend a week looking at the waste that is generated in your household or in your classroom: keep a list of the waste produced and really think about which of the six Rs would be best for each item.

Use a table like the one below to help you sort the items:

Item	Rethink?	Refuse?	Reduce?	Reuse?	Recycle?	Repair?	How?
Yoghurt pots				X			Use to plant seeds
Bag of pasta			X				Refill a jar instead of a bag
Carrier bag		X					Take a bag to the shops

Could you and your family rethink the way you do your food shop?

Is there anything you've thrown out that you should have refused in the first place?

Are there any ways that you and your family or class can reduce the waste produced?

Are there items that you could reuse, going forward?

What percentage of your waste do you think you recycle?

When was the last time you threw away something that could have been repaired?

DIFFICULT QUESTIONS TO GET YOU THINKING!



Spend some time answering the questions below, you could even put together an interview for adults to answer.

- Do you believe the amount you recycle makes a difference?
- Do you find recycling challenging?
- Should companies have a responsibility for providing packaging that can be more easily recycled?
- Would you be willing to pay more for more ethical/recyclable products?



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STEEL – THE MOST RECYCLED MATERIAL IN THE WORLD

Steel is the most recycled material in the world and can be recycled infinitely. Doing this saves an enormous amount of energy and water, reduces emissions, and cuts down on the resources we extract from the earth.

- 30 billion**
The number of steel cans generated each year in America alone - this equates to around 100 cans per person
- 1.6 billion**
The number of tonnes of steel produced globally every year - two thirds of this comes from recycled steel
- 18 million**
The number of homes you could power in a year with the energy saved by recycling steel
- 26 hours**
The number of hours you can power a 60 watt light bulb by recycling just seven steel cans
- 66%**
The reduction in CO2 emissions caused by recycling steel compared to producing new steel
- 50 years**
The time it would take for a can to break down if it was just sent to landfill

THE RECYCLING PROCESS



What happens to a can once it has been thrown away? Watch the video, and try to explain the steel recycling process in ten steps.

Steel can is taken to recycling plant and mixed with other steel scrap

The new steel can be used for many different things: aerospace or automotive components, or maybe another steel can!



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YOUR CHALLENGE!



Whilst recycling is a good way to manage waste, reusing items is an even better choice for the environment. Design and build a useful product for your home or school, only using waste materials that can be reused.

WHAT TO DO:

1. Brainstorm your ideas and think about the practicality of your product - will it be practical or look good (or both)?
2. Identify the materials and equipment needed to build your product.
3. Draw, build and test your design. Be creative!
4. Take a photo and post your design and finished product on social media, using the hashtags #STEAMstars and #GFGFoundation



EXPLORE FURTHER

Check out these links and videos for more info about waste management and recycling:

- [Waste Generation and Management - Sustainability.](#)
- [Recycling Jobs - PepsiCo](#)
- [The World Counts: Steel Recycling](#)
- [Reduce, Reuse, Recycle \(In That Order!\).](#)

WHAT DID YOU LEARN?

1. Has your knowledge of sustainability and recycling improved?
2. What did you learn through speaking to others? Did you always have the same opinions?
3. Do you think you will make any changes to the way you shop and dispose of things now?
4. Which of the 6 Rs do you think is the best option?



HOW TO RECEIVE YOUR INDUSTRIAL CADETS AWARD



To obtain your Industrial Cadets award you need to complete all the work included in this pack. Please send your project together with the completed form below to stemchallenges@etrust.org.uk

Name:

Gender:

School address:

Year group:

What have you learnt by completing this project?

What was your favourite part of this project?

Have you discovered a career in recycling and waste management, that you didn't know existed, and sounds interesting to you?

Top 5 skills needed to do this job:

- 1.
- 2.
- 3.
- 4.
- 5.

What does this job involve?

Will you be telling your friends about EDT's challenges and Industrial Cadets?

How would you rate the experience of completing this project?

Excellent Very Good Good Below Average Poor

NB: We are always keen to publicise the great achievements of our young people. If you are happy for us to share content from your submission please tick the box

Please find reference to our [privacy](#) and [safeguarding notice](#).



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More about the "Did you know" series

The GFG Foundation is a registered charity and was launched in February 2017 by Sanjeev and Nicola Gupta. Sanjeev is an international businessman, industrialist and Executive Chairman of the GFG Alliance. Working with partner organisations, the Foundation in both the UK and Australia is delivering programmes that empower and enable young people seeking opportunity to reach their life and employment potential.

The 'Did you know' videos and activity packs, developed in partnership with EDT, are an exciting yet simple way of learning about a variety of topics linked to sustainability and the environment. These engaging on-line resources can be used in the classroom, as a home learning resource or as a fun family challenge. They are also a great way for everyone to learn more about the GFG Alliance.



For more information about the GFG Foundation and other resources, please visit: www.gfgfoundation.org

 @FoundationGfg

 GFG Foundation

For more information about EDT and Industrial Cadets, please visit: www.etrust.org.uk

If you have any questions about this particular challenge, please email: stemchallenges@etrust.org.uk