



WebQuest
Advanced Level -

Bruised not Broken



TITLE OF THE WEBQUEST:

Bruised not Broken

LEVEL OF THE WEBQUEST

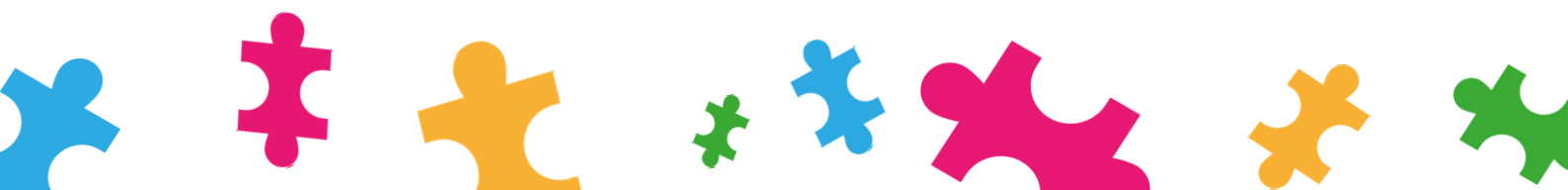
Advanced Level

INTRODUCTION

Waste is everything we throw away or get rid of. It could be toys, clothes, plastic bottles, paper, electronic devices or any other man-made item, and we just throw it in the bin when we don't need it anymore. We live in a society where we are used to taking, making, using and disposing of products. When a new phone comes out, we ditch the old one. When our washing machine stops working, we buy a new one. Did you ever ask yourself where do all these things go once you throw them away and the effect this has on our environment?

If not, this WebQuest will help you understand why the throw-away-and-replace culture we live in is not sustainable for the environment and cannot work long-term and how we can adopt a new sustainable return-and-renew culture where products are designed to be regenerated.

This new way of thinking is called "circular economy" and it's about reducing waste, reuse and recycle products. It is not good only for nature and the economy, it's good for our quality of life and our health.



TASKS

We all have a favourite grocery shop, restaurant, or café, right? I bet you also have one. Do you know if your favourite shop or restaurant is following sustainable practices to help the environment? For example, do you know if they use plastic straws or bags? Do you know if they help reduce waste through donations? If you also use and throw away plastic bags every time you go shopping, maybe you can start bringing your own shopping bag next time!

In this WebQuest you will be guided through a series of steps that will help you learn about waste and how it affects the environment. Did you ever think to turn an old t-shirt into a new reusable shopping bag? If your answer is no, we will tell you how to create your own one at the end of this WebQuest. Before participating in this activity, let's learn more about waste and the circular economy!

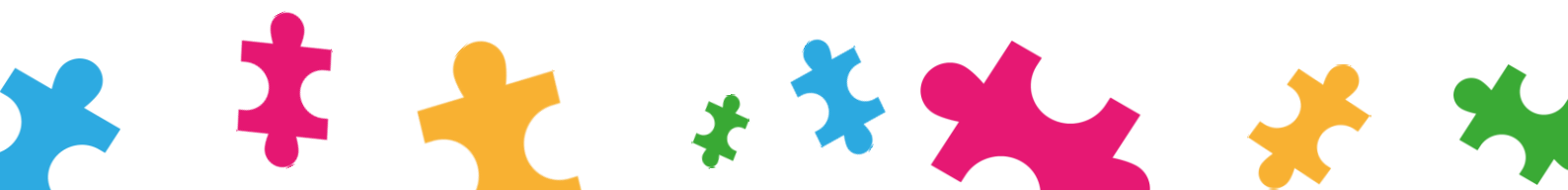
PROCESS

Step 1: How much do you waste?

Waste is unwanted or unusable material. Waste is anything that is worthless or defective and is thrown away because it is no longer useful. Waste is mostly solid materials, but liquids or gases from industry are also part of waste. Many of the things that have already been used can be recycled, for example: used glass bottles can be washed out and refilled or melted down in factories to make new glass. There are different kinds of waste and they all belong to a special garbage can so that they can be recycled separately. The process of dividing different types of waste is called waste separation. It is important that we know how to separate waste properly, because if you put something in the wrong garbage can, the employees or sorting machines at the recycling centres have to sort it again so if we all separate properly, we avoid this effort, reduce costs and do something for the environment. Do you know how to separate waste?



- What is waste? <https://klexikon.zum.de/wiki/Abfall>





- What is recycling? <https://www.kindersache.de/bereiche/wissen/natur-und-mensch/was-ist-recycling>
- How do I separate waste in Germany? <https://www.youtube.com/watch?v=rQcjEY4Kruc>
<https://handbookgermany.de/de/live/waste-separation.html>

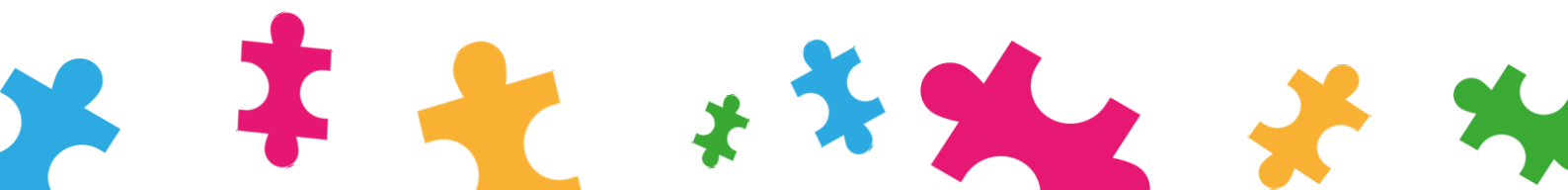
Step 2: Say no to plastic

Plastic pollution has become one of the biggest environmental issues today, as rapidly increasing production of plastic products overwhelms the world's ability to deal with it.

Plastics often contain additives making them stronger, more flexible, and durable. Many of these products, such as plastic bags and food wrappers are meant to be used for a lifespan of mere minutes to hours, however, they may persist in the environment for hundreds of years. Most of the plastic trash in the oceans flows from land. Trash is also carried to sea by rivers which pick up more and more trash. Once at sea, much of the plastic trash remains in coastal waters. Every year, about 8 million tons of plastic waste escapes into the oceans from coastal nations. Millions of animals are killed by plastics every year, including seals, whales, turtles and other marine animals, which remain trapped in or ingest plastic causing entanglement, poisoning or starvation.



- Plastic pollution - <https://www.nationalgeographic.com/environment/article/plastic-pollution>
- What is plastic? - <https://www.kindersache.de/bereiche/wissen/natur-und-mensch/was-ist-eigentlich-plastik>
- Plastic island Pacific Ocean - https://www.youtube.com/watch?v=uvclEXH_GF8
- Problems with plastic bags - <https://www.bmu-kids.de/wissen/boden-und-wasser/abfall/plastiktueten/>



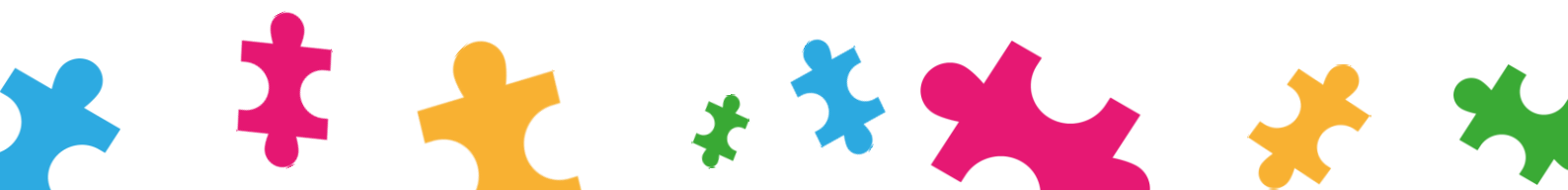
Step 3: What is e-waste?

E-waste refers to any electrical or electronic equipment (computers, televisions, VCRs, stereos, copiers, fax machines, microwaves, fans, heaters and so on) that's been discarded.

Electrical and electronic waste contain recyclable metals and other materials; recycling them saves resources and protects the environment. Unfortunately, electronics often contain toxic substances such as mercury or lead that are used in the manufacturing process, and if not properly disposed of, they can cause pollution and health problems. It is for this reason that electrical and electronic waste is collected separately and recycled properly, however, the disposal of the many different substances is very complex and also costs a lot of money. Did you know that some of the e-waste generated in Germany is not disposed here? Many thousands of tons of e-waste from Germany and other countries in Europe end up in Asia, Africa and South America every year. In most poor countries, however, the e-waste cannot be disposed properly because there are no recycling centres, so the electrical appliances often end up in huge garbage dumps and are disassembled by the people who live there who come into contact with the toxic chemicals and plastic parts of the devices which are dangerous and harmful. The heavy metals, smoke and waste also destroy the environment. The air, water and soil near the dumps are poisoned. Careful handling of waste is very important for our health and the environment and it is for this reason that before purchasing items such as computers, smartphones and household appliances, we should first ask ourselves if we really need to replace our current devices. Using devices longer reduces waste, helps the environment and improves our quality of life.



- E-waste - <https://kinder.wdr.de/tv/neuneinhalb/neuneinhalb-lexikon/lexikon/e/lexikon-elektroschrott-100.html>
- Our electrical appliances – how scrap becomes treasure again
<https://www.youtube.com/watch?v=3RNujc7kK1s>
- What we can do to reduce e-waste - <https://www.geo.de/geolino/natur-und-umwelt/elektroschrott-vermeiden-und-entsorgen-recycling>



Step 4: Circular economy

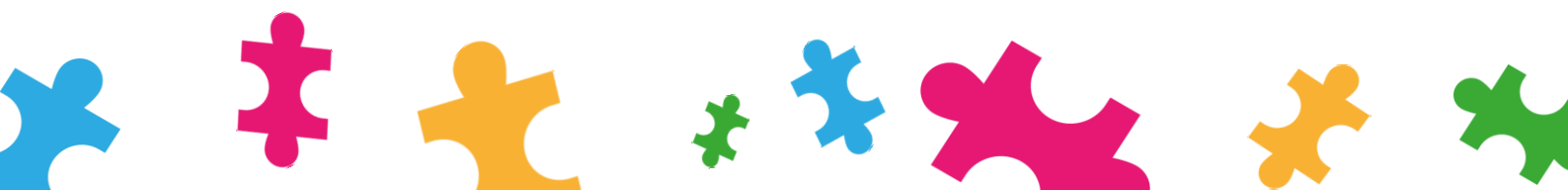
In the natural world, there isn't any rubbish or waste. Energy is provided by the sun, one species' waste is another's food, and when things die, their nutrients return to the soil — in a circle of life.

Unfortunately, humans do things in a more linear way. We extract tons of natural resources every year and turn them into materials that we use, consume and then we simply throw them away. As you have already learned, we live in a world where technological progress is advancing at such a fast speed that we just buy the latest phone or computer and we bin the old one. How many times did you replace yours even if it was perfectly working? This wasteful approach, known as linear economy isn't working. We're running out of resources to make new things with, and we're producing too much toxic waste. That's why we need to move to a circular economy, inspired by the natural world — where everything has value and nothing is wasted!

What if we design products that we can reuse, refurbish and repair? And extract natural resources only when we really need them? In a circular economy, our electronic devices would be designed to be easily repaired and reused. All the precious metals and material inside could be reused to create a new product, or returned safely to nature. We would use less new material and energy and protect our natural environment. This way, we would extend the life of goods, so that the goods of today could become the resources of tomorrow.



- More information about circular economy- <https://www.youtube.com/watch?v=vEjR1odTFfA>
- What is renewable energy? -<https://www.youtube.com/watch?v=LKn1RztgS0c>
- Energy revolution - https://www.youtube.com/watch?v=n3_S4NZKxiE





Step 5: Activity time!

Now that you have gathered information about waste and its impact on the environment, you also know what you can do to avoid it. There are many things you can do to help reduce waste, one of those is to bring your own reusable bag for your trips, either you are going to the the supermarket, to the pool, or to the park.

Get into your groups of 3-4 students, and find out how to create a shopping bag from an old t-shirt by clicking on the following link: <https://climatekids.nasa.gov/tshirt-bag/>

EVALUATION

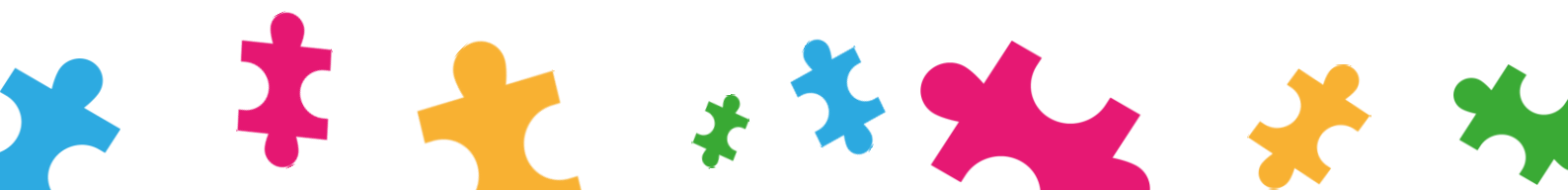
The teacher can use these questions to find out how the students felt about this activity:

- What did you learn about waste?
- Why is e-waste dangerous for our health and the environment?
- Why is it important to reduce waste?
- Why is it important to recycle?
- What new way of thinking should we adopt for the future?
- What are the aspects you enjoyed more about the activity?
- Why do you think that this reusable bag made from a t-shirt will help reduce your waste?

CONCLUSION

In this WebQuest you have gained knowledge about waste and its dangerous effects on our health and the environment. You have found out that we live in a linear economy where humans tend to take, make, use and dispose products. However, our natural resources are limited and this use and throw away culture we live in is damaging our environment and cannot last long-term. The alternative is there and it is called “circular economy”. Circular economy is inspired by nature and it’s about reducing waste to a minimum, reusing and recycling existing materials in a way that the life of damaged goods is extended and they can re-circulate in a continuous cycle. This way, natural resources are preserved - and used only when really needed – so that nature will be regenerated.

Keep in mind: reduce, reuse, recycle!





TURN OFF THE LIGHTS



CUT DOWN ON PAPER



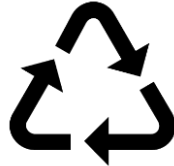
USE PUBLIC TRANSPORT



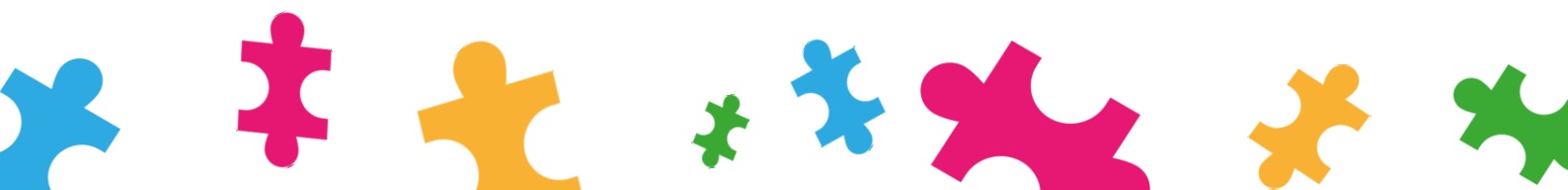
BUY LOCAL PRODUCE



AVOID USING DISPOSABLE ITEMS



AVOID FAST-FASHION



GRETA

Challenge-based Learning in Primary Schools for Climate Change Awareness



Istituto Comprensivo "Don Milani" di Lanciano



Co-funded by the
Erasmus+ Programme
of the European Union

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