

Recycling plastics — KS2

Do you know where on earth plastic come from?

That's right, plastics are made from oil.

Oil come from drilling deep into earth to get fossil fuels. **Fossil fuels** are formed from the remains of ancient marine organisms, such as plants, algae, bacteria and even dinosaurs!

How does oil get turned into plastic?



Step 1: Drill down deep into earth to get crude oil (also known as petroleum).



Step 2: Transport it by truck or boat to an oil refinery.



Step 3: A process separates out the oil into liquids and gases (distillation).



Step 4: Use a chemical reaction to change the liquid oil into plastic and other things, such as petrol for cars.



Can you think of 3 reasons constantly drilling oil to turn into plastics might be a problem?

1.
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2.
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3.
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Reduce, reuse, recycle

What are the problems with plastic production?

1. When you buy something plastic, remember it has taken millions of years to get to that point of being plastic. To use it for a very short time and throw it away is a waste of the earth's 'resources'.
2. If we use the oil up it's not easy to get more.
3. Drilling and transporting oil creates a lot of pollution. Distilling and processing oil in the refineries also creates pollution .
4. Plastic litter and waste is also causing a lot of pollution, it is harmful to the environment and to animals and it is not nice to see.
5. All this is contributing to climate change by creating pollution.

Are these a good use of earth's resources?

A lot of plastic stuff that we buy daily is single-use plastic. This means we use it once and throw it away. When you buy/use plastic that you use for a short time, think about all the processes and pollution created to make it. For us to throw it away, which involves having to collect and dispose of it, creates yet more pollution.

Which do you think is the better solution to this problem?

1. Reduce your plastic use
2. Reuse your plastics
3. Recycle plastics



Reduce, reuse, recycle

Reduce is the best way.

If you have to buy something, think of ways you can reuse it rather than throw it away.

If you have finished reusing it, find out if it can be recycled—not all plastics can be.

If it can, it is better to put it in recycling. But if you are out and about and can't find a recycling bin, take it home. Take responsibility. If you chose to buy it, choose to dispose of it properly. More outside bins isn't a solution to the amount of single-use items.

Once I have put my correct plastics in the recycling bin where does it go?



It gets taken by the bin men to the Materials Recycling Facility in Smugglers Way, Wandsworth.

We call it the MRF (pronounced MURF).

Here the recycling bounces along a conveyor belt and gets separated. The plastics are separated by an Optical Sorter—where the MRF is set to pick out different colour plastics.

At the end of the belt is a big crusher which crushes the sorted plastics into a big cube called a 'bale'.

Can you see the different types of plastics in the pictures —what bottles do you think they are made from?

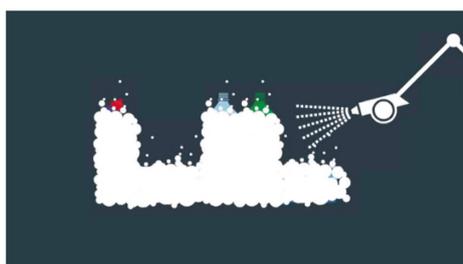


Reduce, reuse, recycle

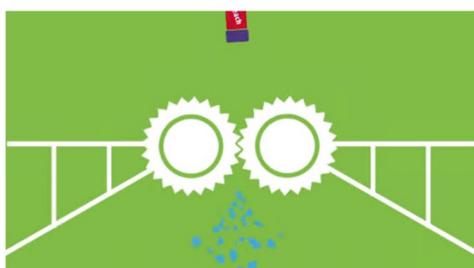
The bales of plastic are put onto a big transport truck and taken to a recycling factory somewhere in the UK.



The bales are unloaded and split onto a conveyor belt.



The plastics are washed and cleaned.



The plastics are then shredded into little pieces or flakes. And then converted into pellets.



The recycled plastic pellets are then melted down and turned into other things. If it is made into clothes it is turned into 'yarn' and woven into fabric.



Did you know that plastic can only really be recycled 2-3 times? After that the quality of it is not good enough to be used again. It is much better to **reduce** your use of plastic.

Reduce, reuse, recycle

Here are some of the plastics we want and plastics we don't want. Although plastic gets washed at the recycling plant we need them to be clean and dry when you put them into the recycling bin so they don't dirty the other recycling or machines/people working there.

Can you find any in your recycling bin at home?



We call these 'scrunchy' plastic. It's soft and can scrunch into a ball in your hand.

Why can these not be recycled?

Different plastics are made in different ways and different processes which melt them at different temperatures. Some plastics are easier than others to recycle. Some plastics will just melt away if they get heated up again so can't be recycled.

We also have the problem with thin, scrunchy plastics clogging the MRF machines.

Reduce, reuse, recycle



Activity

1. Count how many plastic bottles you have in your recycling bin (any type of plastic bottle). Work out how many hours energy you have helped save. *Work out how much energy you could save in a year.*
2. Do this for 2 more weeks to get an average of the amount of bottles you recycle in your household and work out an average of hours energy saved per week. *Use this average to work out how much energy you could save in a year to see if it is any different.*

More Reading:

- Video and info about how old plastics are turned into new plastics.
<https://www.plasticsmakeitpossible.com/plastics-recycling/what-happens-to-recycled-plastics/the-recycling-journey-of-a-plastic-beverage-bottle/>
- <https://www.recyclenow.com/recycling-knowledge/how-is-it-recycled/plastics>
- How plastic bottles are turned into clothes (polyester).
<https://youtu.be/zyF9Mxlcltw>
- Find how to Reuse plastics or the problem with plastics in our [WRWA schools home learning sheets](#).