Keep Calm, Keep Learning, Keep Recycling

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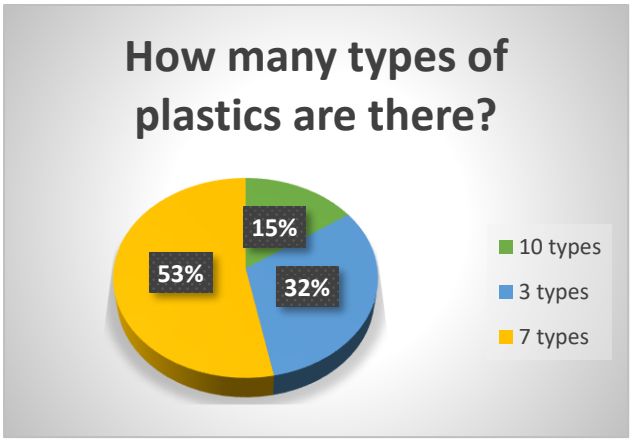
'Modern' society is focused on a one-use lifestyle based on ever-changing consumables mostly made of plastic. Plastics can be readily moulded into various useful durable, lightweight and inexpensive products . Every year, more than 420 million tons of plastics are manufactured across the globe while 15% of global waste generation is plastic. There are six common types of plastics: PET, PS, HDPE, PP, PVC and LDPE. Unfortunately, only PET, HDPE, and PVC plastic products are recyclable; the others are not recycled mainly due to inefficiency.

Recycling is the reprocessing of materials into functional and useful products. Plastic recycling involves collecting, sorting, shredding, washing, melting, and pelletizing. The particular processes vary based on plastic type. Plastic recycling faces many challenges, ranging from mixed plastics to hard-to-remove residues. The cost-effective and efficient recycling of the mixed plastic stream is perhaps the biggest challenge facing the recycling industry. Experts believe that designing plastic packaging and other plastic products with recycling in mind can play a significant role in facing this challenge.

In Malta, plastic is recycled in the blue bin. The goal of recycling plastic is to reduce high rates of plastic pollution while putting less pressure on natural resources to produce brand new plastic products. This approach helps to conserve resources and diverts plastics from landfills or unintended destinations such as oceans.

To analyse this matter, the St Augustine College Ekoskola team, carried out an online questionnaire to collect data on the use of plastics and awareness about the recycling of plastics. The questionnaire consisted of 12 close-ended questions based on research, disseminated among the 1,750 members of our learning community. Some of the results are being shared here, while the others will be used to address our educational campaign during next scholastic year.

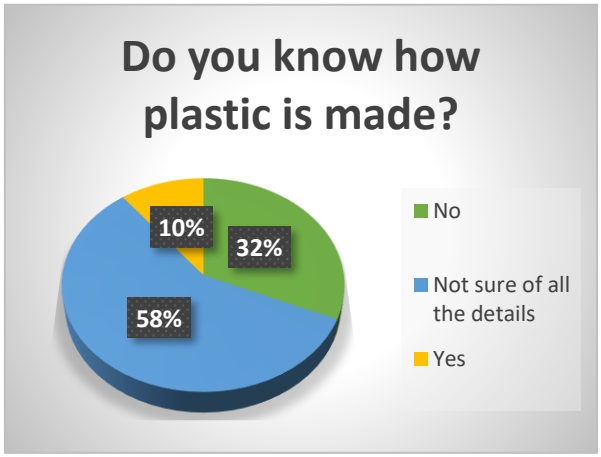


From the questionnaire, we found out that 53% of the respondents know that there are 7 types of plastics. The rest are misinformed. This same misinformation lies in the lack of knowledge about the recycling of plastics - 26% think that all plastics can be recycled. In fact, only 30% of plastic waste is recycled in Europe, while Malta only recycles 19.2%.

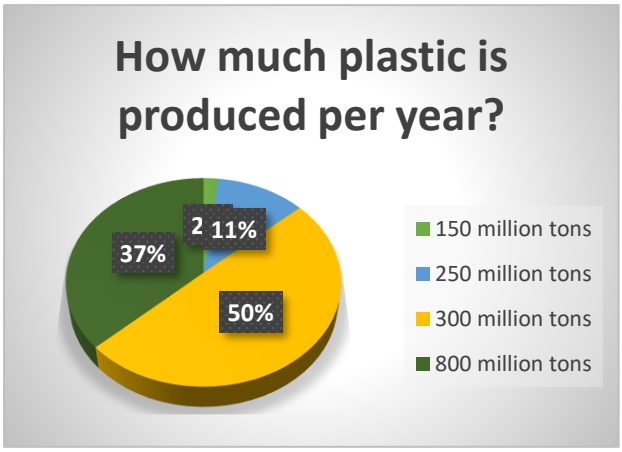
Over the years, educational campaigns on plastic recycling increased, but one educational campaign especially addressing schools is the bottle caps recycling campaign led by the Office of the President of Malta in aid of L-Istrina by the Community Chest Fund Foundation.

In fact, the vast majority of respondents (92%) know that plastic bottle caps can be recycled. This is confirmed by the fact that during the L-Istrina 2018 edition €21,000 were collected from 18 million recycled plastic bottle caps.

In view the discussion on recyclable plastic, an obvious question arises - How is plastic made? Do respondents know how plastic is made and that the manufacture of plastic is quite a long and tedious process? In fact, only a meagre 10% of respondents know while the rest do not or are not sure of the details.



Plastic starts out as drilled petroleum that is transported to a refinery. Crude oil and natural gases are refined into ethane, propane and hundreds of other petrochemical products and fuel for your car. Ethane and propane are "cracked" into ethylene and propylene, using high-temperature furnaces. Catalysts are combined with ethylene or propylene in a reactor, resulting in "fluff"- a powdered material (polymer) resembling laundry detergent. Fluff is combined with additives in a continuous blender. Polymer is fed to an extruder where it is melted. Melted plastic is cooled then fed to a pelletizer that cuts the product into small pellets which are shipped to different companies that mould them into their desired products.



But how much plastic is annually produced globally? 50% of respondents know the answer. These 300 million tons enter our ecosystems. This is quite alarming, more so when one considers the length of time plastics take to break down.

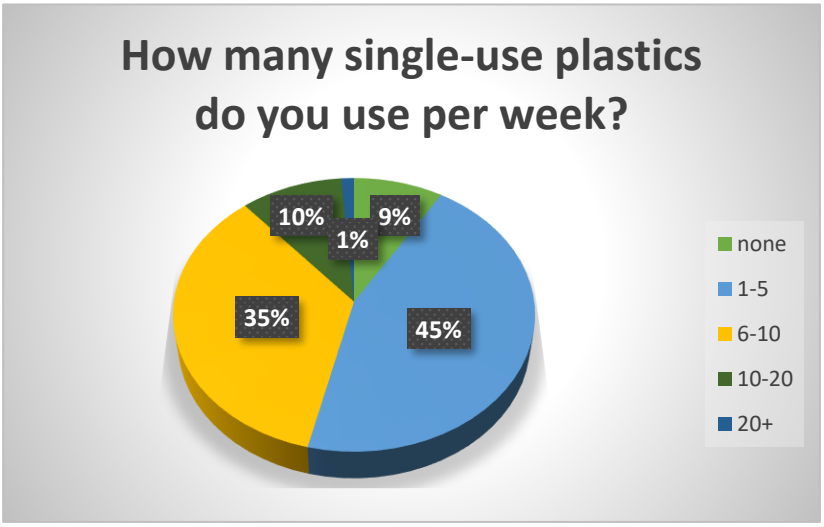
Plastic itself is not actually the problem. Single use plastic is. Plastic bags, straws, plastic cutlery, plastic bottles, plastic plates in some way or another all of these can be eliminated, ex. Using cloth bags instead of plastic bags. Some shops and restaurants are already doing their part but everyone's cooperation is essential!

The increased use of plastics and consumables has drastically increased over the years. With the Covid-19 pandemic, a greater impact will be felt since many are consuming more take-away foods due to health restrictions, while the catering industry had to opt for the use of plastic containers and cutlery for hygiene

purposes. This situation begs the question: How much single use plastics are used per week in a typical family?

Knowing that half the plastics we use are thrown away just after a single use. It is alarming that 45% of the respondents used 1 to 5 single use plastic items per week, and another significant 35% use 6 to 10 items per week. Such figures are very high and more worrying if the respondents do not recycle such plastic which they use! Fortunately, only 1% of the respondents use 20+ single use plastic items per week.

It is clear that plastic is harmful to the environment because it takes 500 years and over for plastic bags to decompose in a landfill. Respondents were also aware how one should dispose of plastic bags and 83% knew that they disintegrate into micro plastics and end up in the water table.



In fact, plastics do infiltrate the water table and are also harmful to marine life when they get into the sea. A UK 2020 study, found 4 cases of micro plastics in the placenta of unborn babies. These micro plastics were small enough to pass through the blood stream, with the babies born "pre-polluted". While this is a serious matter, its coverage in the media is quite limited. This is especially so since it cannot be seen with the naked eye.

From the survey, some lacunae emerged - mainly when it comes to plastic production: which items cannot be recycled and why; when plastic can or cannot be recycled. The age group with most correct answers was the 16–24 group. This shows that this age group has more accessibility to education through schools, media and information campaigns. The least knowledgeable are the older age bracket, possibly due to the limited access to media and updated information. Therefore, education plays an important role. Educational campaigns should target the negative aspects of plastics, displaying the harm which plastics can bring to the environment if not disposed properly. Furthermore, awareness in schools might also have an impact on the adults, particularly parents and perhaps grandparents who would be exposed to the learning undertaken by the children.

On a wider scale, countries need to join forces and co-operate to encourage recycling and incentivise citizens to properly dispose of plastics.

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