For Students

Are We Overusing Plastics?

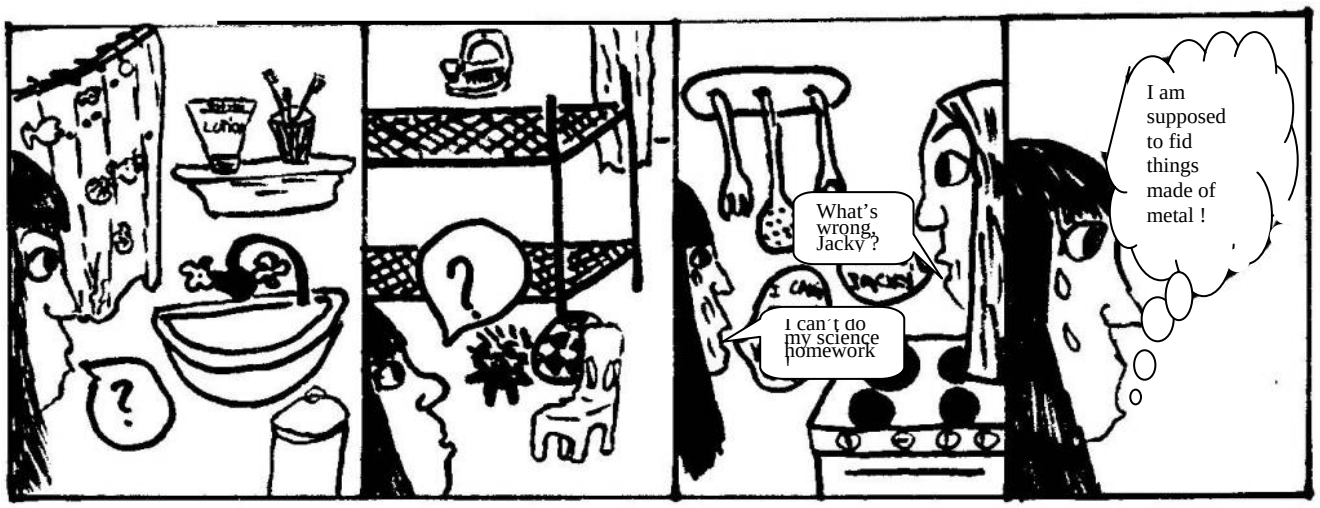
Student Activities

Scenario

It is almost as if plastics have become an integral part of our lives. Put to every possible and conceivable use from house doors to car parts, from clothes to various types of containers and bags, they have slowly replaced materials like metals, glass, wood, etc. This is especially true of packaging of materials used in our daily life, in which various types of plastics are used extensively.

But what happens to all the plastic materials once they have outlived their usefulness? How do we dispose of them in the home or in the school? What happens to plastics after they are thrown on rubbish dumps along with household garbage, or simply thrown out on the streets by people who don't care? Why are people talking about the threat to the environment and human life posed by the excessive use of plastics and the way in which they are disposed of?

Let us explore some of the questions posed above. By performing experiments, collecting information, going to places and meeting people, perhaps we can find out some possible answers.



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Your Tasks

1. Look around your home and school. Note down the variety of uses of plastics. Discuss them with your classmates and prepare a detailed list of uses to which plastics are put.
2. Prepare a list of all plastic materials discarded from your home in a week. Divide the list into categories such as plastic bags, containers, wrappers, clothing, etc. Estimate the percentage of plastics in the total waste. Hence estimate the waste being generated by 100 households, and how much of it would be plastics.
3. Classify the collected (discarded) plastic materials based on criteria you specify.
4. Undertake tests to distinguish between different plastics. Find out more about them based on their strength, behaviour when heated, solubility, etc. Reclassify the collected plastic materials based on the results of the tests.
5. From an encyclopaedia or any other source, try to find out the reasons why different plastics have different properties.
6. Set up an experiment for finding out about the biodegradability of plastics.
7. Visit a plastic processing unit. Find out the common name, chemical name and structure of the plastics being processed. Try to find out what additives (colours, plasticiser, etc.) are being used and why, and also the complete chain in the recycling of plastics.
8. Find out, from any available source, whether the additives being used are carcinogenic (i.e., cancer causing).
9. Write a brief report based on your visit detailing the processing of plastics. Also write a brief note about how the plastic recycling chain functions.

Note: In case you are unable to visit a processing unit, collect the above information from various sources like petrochemical companies, reference books, etc.

10. Based on the various facts and details collected during the above activities, debate in the class regarding various potential dangers to the environment and human life by excessive plastics usage and the social responsibility of the public towards the discarding and disposal of plastic waste.

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