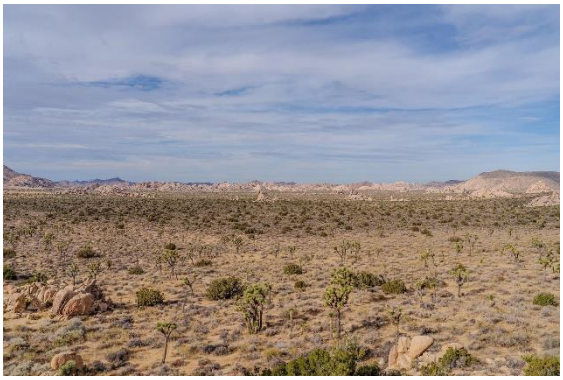

Image by Nick_the_Photographer from Pixabay

Quarterly Problem

- *Science Edition* -

Plastics in our terrestrial environment

Plastic bottles, made of polymers (polyethylene terephthalate, PET), *are part of our daily lives, but, unfortunately, they often end up in our terrestrial environment. The plastic structures decay and over time transform into microplastic, which travels through and mixes with our environment, infusing it with metals and chemicals which are toxic to many organisms.*

The difference in density between freshwater and salt water can be used to separate pieces of plastic and microplastic from the surrounding soil.

Brainstorm-Box
Where does the plastic come from? How many different products can you identify? What can we do to minimize the amount of plastic waste in our terrestrial environment?

Collect approximately 1 liter of soil. Prepare 5 liters of saturated salt water and mix it with the soil. Leave it for a few hours and observe.
Take a spoonful of the mix from the surface of the water. Then, place it onto a petri dish and study under a stereomicroscope. Repeat using a UV lamp. (Attention: Do not look directly at the UV light).
Count the pieces of plastic and repeat the same process a few times.

Figure 1: Soil in salt water

Figure 2: Top layer in salt water

Figure 3: Microplastic

Log your observations

Specify your results in a chart. How many particles do you reckon, one liter of soil might contain? How many particles will you estimate for 1 liter of soil from your environment?

Indicate what foundation you've been using, structuring your respective estimation and making sure you present your approach precisely and comprehensibly.

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