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CLIMATE CHANGE CHALLENGES

**SUSTAINABLE
SOLUTIONS**

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Title	The making of bioplastic
Objectives	<ul style="list-style-type: none"> ● To reduce the amount of plastic used; ● Using bio waste in order to make bioplastic products;
Necessary resources	Hand blender, beaker (1000 ml), baking paper, tray, pestle and mortar for mass formation, glass rod, per sample - 3 ml 0.5 M hydrogen chloride (HCl), 2 ml glycerin, depending on the desired pH level, 0.5 M sodium hydroxide (NaOH), banana peels (at least 25 grams, can be more, 1 peel is 2 samples), dropper, water 500ml
Time	90 minutes
Step by step instruction:	<ol style="list-style-type: none"> 1. Each pair has two peels, weigh them (required mass of at least 50 grams); 2. Boil the peels in water, after boiling, spread them on filter paper to drain excess moisture; 3. The peels are ground until a mushy mass is obtained using a blender or pestle (two different samples can be made); 4. To create one sample - in a beaker - weigh 25 g of banana mass; 5. To the banana mass add 3 ml HCl (hydrogen chloride), 2 ml glycerin, 3 ml NaOH (sodium hydroxide) using a dropper; 6. Stir the mass using a glass rod; 7. Spread the resulting mass in a medium-thick layer on baking paper and leave it to dry in a warm place for a week.
Reflection:	<p>What did you learn about the environmental impact of traditional plastics and how bioplastics can address these issues?</p> <p>.....</p> <p>.....</p> <p>How does using bio-waste, such as banana peels, contribute to sustainability?</p> <p>.....</p> <p>.....</p> <p>How could this method be adapted for larger-scale production?</p> <p>.....</p> <p>.....</p>