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CLIMATE CHANGE CHALLENGES

SUSTAINABLE SOLUTIONS

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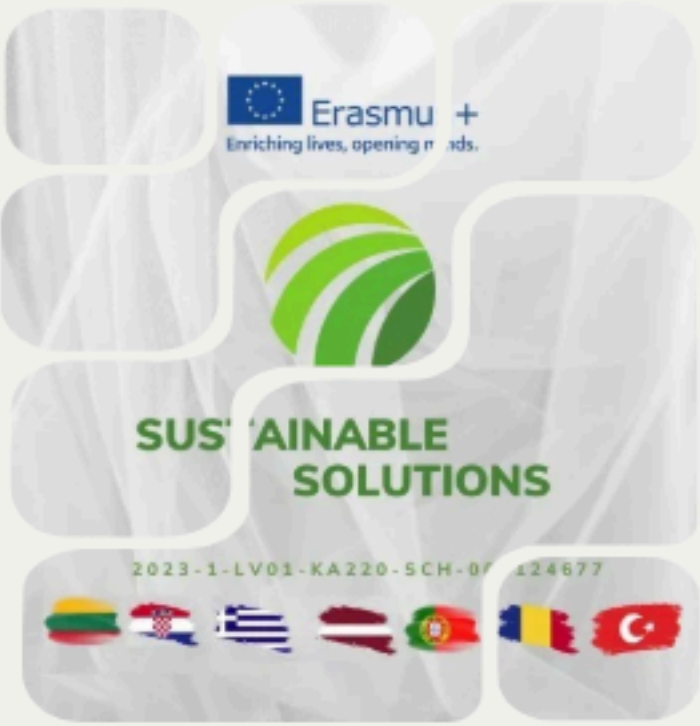

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<table>
<tr><td>Title</td><td>Making waterproof shopping bags</td></tr>
<tr><td>Objectives</td><td>● To reduce the amount of cotton in the making of fabric products;
● To reuse old materials in order to make new composite materials;</td></tr>
<tr><td>Necessary resources</td><td>Cotton fabric (used clothing, rags, curtains), polyethylene film (used shopping bags), scissors, baking paper, iron, ironing board, beaker with water, dropper.</td></tr>
<tr><td>Time</td><td>60 minutes</td></tr>
<tr><td>Step by step instruction:</td><td>1. Cut a small piece of cotton fabric (6 × 6 cm)!
2. Cut a piece of polyethylene film smaller than the piece of fabric (for example, 5 × 5 cm)!
3. Place the cotton fabric on the ironing board and the polyethylene film on top of it!
4. Cover both materials with baking paper so that it completely covers both the polyethylene and the fabric!
5. With an iron heated to the temperature intended for ironing cotton, press it onto the surface of the paper and hold for
about half a minute!
6. Remove the baking paper and let the fabric cool. Turn the edges of the fabric over!
7. Come up with a name for your resulting composite material and write it in the data recording table!
Studying and comparing the properties of materials
1. Test the mechanical strength of cotton, polyethylene and the resulting composite material by stretching the materials!
Record your observations in the data recording table!
2. Test the water resistance of cotton, polyethylene and the resulting composite material by placing a few drops of water on each material! Record your observations in the data recording table!

<table><tr><td>Property</td><td>Cotton fabric</td><td>Polyethylene film</td><td>Composite material</td></tr><tr><td>Mechanical strength</td><td></td><td></td><td></td></tr><tr><td>Waterproofness</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>Reflection:</td><td>Draw a conclusion about whether the assumption is confirmed by evaluating the properties of the new material compared to the properties of the original materials!</td></tr>
</table>

	…… …….. Why is there a need to create composite materials? …… …….. How could the experiment be improved if it were done again? …… ……..