

## Redesign products to be environmentally friendly – Crina RADU

The members of the team must choose a product (e.g. home appliances) and search for creative solutions to improve that product from environmental point of view. They might not limit only to this but consider also functional, economic, aesthetic issues.

### *Some guidelines*

Each member of the team could assume a different role (e.g. an elderly person, a young professional, a student, a mother with small children, etc.) and try to note from the perspective of that person the requirements related to the product; the team will get in this way many design ideas.

- Write down or sketch the product specification; it might be useful for this step to consider some questions as:
  - What function(s) has the product to fulfil?
  - Which are the product components that materialize the function(s)?
  - Is the product design able to fulfil its function(s) properly?
  - What are the weak points of the design?
  - Could be any danger in the case of malfunction?
  - What are the used materials?
  - What is the proper size, shape, colour?
  - What are the possible use scenarios?
- Consider the environmental issues of the product. Give a general description of its different life cycle stages. Which life cycle stage of the product contributes more to the environmental impact? You may estimate the possible impacts by using the MET matrix.

<i>Life cycle stage</i>	<i>“Environmental parameters”</i>
Raw materials	<ul style="list-style-type: none"><li>◦ used materials</li><li>◦ problematic materials</li></ul>
Manufacture	<ul style="list-style-type: none"><li>◦ production technologies</li><li>◦ production waste</li></ul>
Transport	<ul style="list-style-type: none"><li>◦ transportation (how is the product distributed, distances)</li><li>◦ packaging</li><li>◦ energy consumption</li></ul>
Use	<ul style="list-style-type: none"><li>◦ generated waste, emissions</li><li>◦ maintenance</li><li>◦ disassembly time</li></ul>
End of life	<ul style="list-style-type: none"><li>◦ rate of reusability</li><li>◦ rate of recyclability</li></ul>

- Consider the life cycle stage that contributes more to the environmental impact and make your product more environmentally friendly.