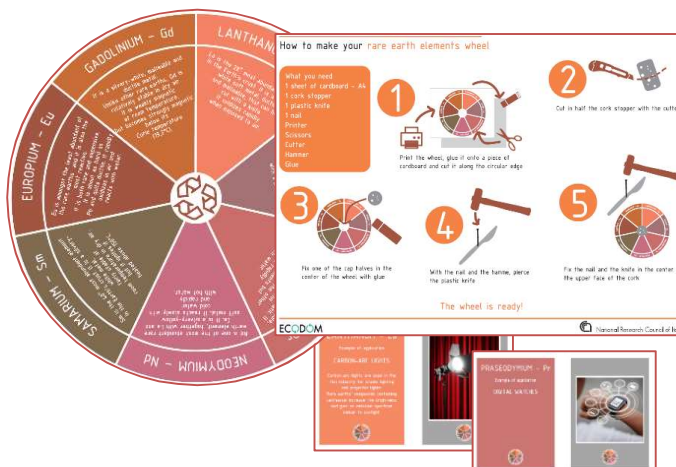


## Summary

# THE RARE EARTH ELEMENTS WHEEL



### Target age

Age 13 and over

### Level of difficulty

Easy     Medium     High



### Key words

WEEE (Waste Electrical and Electronic Equipment), EEE (Electrical and Electronic Equipment), Recycling, Critical Raw Materials, Rare Earth Elements (REEs), Circular Economy



### Abstract of the activity

This toolkit has the objective of bringing students' awareness to the importance of the content of metals, particularly the Rare Earth Elements, within EEE, and therefore, WEEE. Students can build by their own *the Rare Earth Element wheel*, printing the wheel on a paper (A4 or A3 format), cutting it and gluing it on a support. Teachers have to print and cut the linked cards. When the wheel and the cards are ready, the students can play with the wheel in small groups, guessing in which cards of the teacher, representing 7 different electrical appliances, is contained the specific Rare Earth Element. This toolkit can be strengthened by using the *Teacher Card* from the RawMatCards toolkit, available under the section "Exploration & Mining".


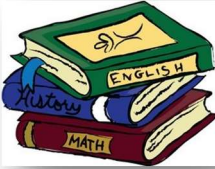






### Learning Goals

- To be introduced to the concept of WEEE, WEEE management and WEEE recycling in the circular economy;
- To discover 7 different Rare Earth Elements in 7 different electronic equipment.



## Summary

	<ul style="list-style-type: none"> <li>To understand the content of secondary raw materials within WEEE and the role of Critical Raw Materials and Rare Earths in the electronic devices;</li> </ul>
	<p><b>Specific Abilities</b> - <i>At the end of the activity the student will be able to:</i></p> <ul style="list-style-type: none"> <li>Know what are WEEE (Waste Electrical and Electronic Equipment);</li> <li>Learn the main physical characteristics of the most spread REEs in EEE/WEEE;</li> <li>Approach the main topic of circular economy linked to the recycling of WEEE in which precious metals can be recovered and potentially, REEs too.</li> </ul>
	<p><b>Cross-curricula Links</b></p> <ul style="list-style-type: none"> <li>Ecology/Environment;</li> <li>Geology/Chemistry;</li> <li>Sustainability;</li> <li>Social Sciences: i.e. human behaviour.</li> </ul>
	<p><b>Prerequisites</b></p> <ul style="list-style-type: none"> <li>Familiarity with basics of chemistry, rocks and mineral science;</li> <li>Familiarity with basics of environmental pollution;</li> <li>Concept of waste.</li> </ul>
	<p><b>Time requirement plus eventually other boundary conditions</b></p> <p><input type="checkbox"/> 3 h      <input type="checkbox"/> 0 min</p> <p><b>Instruments:</b> <i>1 sheet of cardboard (A4 or A3), 1 cork stopper, 1 plastic knife, 1 nail, Printer, Scissors, Cutter, Hammer, Glue</i></p>
	<p><b>Learning and Teaching Support Materials - What you can find in the toolkit</b></p> <ol style="list-style-type: none"> <li>Procedure/s- Modules 1;</li> <li>Students' Cards;</li> <li>Ppt presentation for preparing a lesson (plus a short text and exercises);</li> <li>Final quiz.</li> </ol>
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