

RM ∈ HDD



A. Main topic

Identify rare earths within a Hard Disk Drive (HDD)

B. Targeted audience

14-18 years old students

C. Key concepts

The toolkit teaches to high school students how to produce educational cards (EdCa) on Raw Materials (RM). An EdCa is, by definition, a card (A4, front and back) containing a small amount of information, held up for students to see (schemes, sketches, pictures and figures are present in the EdCa), as an aid to learning. This toolkit takes neodymium in the HDD as an example of RM within everyday objects. Teachers and/or students will use such toolkit to compose EdCas for understanding both where RMs are and why RMs are important.

An EdCa can be composed by following such outline:

1. Take inspiration from world news – Catches ideas from non-scientific world.
2. Choose a RM to study.
3. Choose an object where such RM is present.
4. How does the chosen object work? Its principal parts?
5. Where is the RM found?
6. How can we recycle them?
7. How can we recover them?

D. Classroom activity:

1. The teacher or a RM ambassador gives the lecture to the class on “How-to produce an educational card” (3h).

2. The class is divided into groups of students (4 students at most) for composing an EdCa on different topics chosen by themselves (16h).
3. EdCas are presented to the class, and corrected by teacher, ambassador and/or the students themselves.

E. Toolkit material

1. Lecture on neodymium in HDD.
2. Multimedia materials for seeing how an HDD works and how to recover neodymium from a HDD.
3. An EdCa composed by an Italian class (high school, third year) on lights bulbs.

F. RM Tutor

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