



'SMARTER... GREENER... SAFER...'

GREEN INITIATIVE

ENTREPRENEURIAL SKILLS IN ENVIRONMENTAL PROTECTION

ELECTRONIC WASTE

ONLINE WORKSHOP 4



E-WASTE - THE PROBLEM OF OUR TIMES...



DO OUR STUDENTS KNOW HOW TO DEAL WITH IT?

□ While talking about waste and recycling we usually refer to recycling paper, glass, metal, plastic, etc. How much do we know about e-waste and ways of recycling it? How to raise our students' awareness in that field?

SCIENTIFIC KNOWLEDGE + ENTREPRENEURIAL SKILLS



- The workshop is to equip teachers with an idea of workshops for students, which they will multiply in their local community (the workshop can be conducted as a series of meetings to allow the students to do the research within a couple of days; proper time management discussed and agreed upon at the very beginning will also be a crucial part of entrepreneurial education)**

STAGE I _MAKING USE OF SCIENTIFIC KNOWLEDGE



ASK YOUR STUDENTS: What is electronic waste?

They use their scientific knowledge to discuss possible answers:

Electronic waste

electronic equipment that is being thrown away

electronic equipment that is not used any more

(computers, printers, scanners, mobile phones, CDs / DVDs / floppy disks, radio sets, TV sets, video cameras, audio amplifiers and musical instruments, etc. ... also batteries)

STAGE II _ CRITICAL THINKING



GROUP WORK: What are the causes of e-waste increase?

The groups of students discuss and then exchange ideas to define the most representative causes. Suggestions:

- FAST CHANGES IN TECHNOLOGY**
- FALLING PRICES OF ELECTRONIC EQUIPMENT**
- WIDE VARIETY OF ELECTRONICS**
- DISPOSAL DUE TO BREAKDOWN**
- HUMAN MENTALITY – EAGERNESS TO BUY NEW PRODUCTS/CONSUMERISM**
- LACK OF AWARENESS ABOUT E-WASTE**

STAGE III SCIENTIFIC KNOWLEDGE + CRITICAL THINKING



STUDENTS CONTINUE GROUP WORK to define the dangers connected with lack of or improper e-waste recycling. The groups exchange information and identify the most representative list.

Suggestions:

- E-WASTE IS NOT BIO-DEGRADABLE**
- IT CAN BE HARMFUL TO HEALTH AS THE ELECTRONICS CONTAIN HAZARDOUS MATERIALS LIKE LEAD, MERCURY, CADMIUM, ETC. WHICH CAN BE DANGEROUS WHEN EXPOSED OR BURNT**
- LEAD AND CADMIUM ACCUMULATE IN THE ENVIRONMENT AND BECOME HARMFUL TO THE ENVIRONMENT**

STAGE IV TIME FOR ENTREPRENEURSHIP



WHAT CAN WE DO? ...REDUCE AND REUSE!!!

- the following stages will require entrepreneurial skills combined with scientific knowledge**

STAGE IVA_SAFE ENTREPRENEURSHIP



Students work in groups to come up with ideas on how to recycle electronic waste in a safe way. They compile the suggestions:

- before you get rid of the equipment, check if it still works first; if it does, you can donate it to a local institution or a person you know, or you can resell it**
- if the device does not work, why not try to repair it first?**
- if the device definitely does not work, make sure you find a proper place dealing with recycling e-waste or a special e-waste bin; only certified ones will provide proper waste disposal, not harmful to the environment**
- while recycling a mobile phone, make sure you remove the sim card and factory reset the phone to delete all personal information**
- while recycling a computer or laptop with a hard drive, make sure you save the information you may need in a different place and delete your sensitive data**

STAGE IVB

ENTERPENEURSHIP + RESEARCH



- Encourage your students to do research on e-waste collection/e-waste recycling centres available in their neighbourhood or region – give them two/three days to do the research, to check online, to make phone calls to make sure the places are working and can be referred to.**
- The students prepare an e-map with e-waste centres marked on it and the list of such centres addresses/phone numbers to be later used and shared with others.**

STAGE IVC_ENTREPRENEURIAL CREATIVITY



- GROUP WORK – ask students to design e-leaflets (electronic version as we don't want to waste paper 😊) encouraging others to dispose e-waste in a proper and responsible way, the leaflets may contain the information on the e-waste recycling centres in the area; the leaflets are to be posted on school websites, school Facebook groups, etc. to address students/parents/teachers/Internet users**
- the leaflets may contain information about a special 'E-waste Drop Off Box' placed at school, where small unnecessary gadgets or batteries may be left and then delivered to the e-waste disposal centre**

STAGE IVD

COLLABORATIVE WORK TO MULTIPLY THE IDEA



- Ask your students to take over the initiative and prepare a short e-presentation consisting of all the information on e-waste gathered so far (general info based on scientific knowledge, dangers, safety tips, e-waste recycling centre contacts). A few slide presentation on e-waste will serve as workshops for younger/other school kids to be presented by peers to peers. This way the idea will be multiplied.**

STAGE V_DEVELOP YOUR GREEN INITIATIVE



COOPERATE WITH LOCAL INSTITUTIONS

- Encourage students to make use of contacts with e-waste recycling centres in the neighbourhood to coordinate or facilitate e-waste collection (bigger devices that cannot be dealt with by students). The institutions may be interested in organising an 'E-waste Drop Off Day' in your schools, on which bigger items might be collected. The information about such events could be spread on school websites and notice boards.**

NOW IT'S OUR TURN ...😊



TASK:

- **Design a lesson plan incorporating entrepreneurial skills such as collaborative work, organisational skills, creative problem solving and scientific knowledge to involve 'Smarter...Greener...Safer...' students in the promotion of responsible e-waste disposal and raising awareness concerning this problem.**



GOOD LUCK! 😊

Prepared by Katarzyna Miska and Bogusława Denys
School counsellor and ESL teacher
I Społeczna Szkoła Podstawowa im. Unii Europejskiej
Zamosc, Poland

