Co-funded by the Erasmus+ Programme of the European Union

BotSTEM – Erasms+ KA2 Project

2017-1-ES01-KA201-038204

Good practice template

1. Title of the activity / practice	**Microplastics: small but deadly**
2. Origin of the activity	While sailing in the Arctic as a 'Teacher at sea' in 2014w1, Giulia Realdon first heard about the problem of microplastics – fragments of different polymers, all smaller than 5 millimetres in diameter, that are now found in nearly every environment. Worryingly, due to their small size, marine microplastics are eaten by zooplankton and so enter food chains, producing a new type of marine pollution. Back at home, she shared her experiences with colleagues at the association Scienza under 18 Isontinaw2 and together, they developed new teaching activities on microplastics to be presented in Italian schools during UNESCO's sustainability week in 2014.
3. Age of the students	3-16
4. Target group (type of the learners, size of the group)	General curriculum Small group of 4
5. School subjects + topics concerned	Biology Chemistry Ecology Organic chemistry
6. Educational goals of the practice	To demonstrate the hazards of plastic waste in our oceans.
7. Duration	10 sessions
8. Place	Classroom.

Co-funded by the Erasmus+ Programme of the European Union

BotSTEM – Erasms+ KA2 Project

2017-1-ES01-KA201-038204

9. Short description of the activity	The article describes several activities to introduce students to microplastics, tiny plastic particles, and their impact on the marine environment. One is a drama activity for very young pupils about how microplastics find their way into the food chain. Role-playing can help children to better understand the processes that these plastics are involved in and why they are so dangerous. Other practical activities described in the article involve materials (e.g. sand, cosmetics, personal care products, bottles, and plastic bags) that students are familiar with, which can help to raise interest in microplastics and the effect they can have in ecosystems. All the materials required for the experiments are readily available and the instructions are easy to follow, making the activities suitable for students to perform in small groups. Finally, the text could be used as a starting point for discussing the consequences that the consumption of certain products can have on our environment. The discussion can help students to be aware that simple actions can make our lives greener and reduce our impact on the planet.
10. Evaluation	Questions, rubrics , teacher's observation
11. Materials / Resources / technical requirements	0.5 l acetone; Small polystyrene block; Hairdryer; 1 l of diluted rubbing alcohol; Bag of common plastic household objects (e.g. bottles, cups, trays, cutlery, boxes, bags) • Two sets of plastic strips, each consisting of strips of polypropylene (PP), polyvinylchloride (PVC), high density polyethylene (HDPE) and polystyrene (PS), glass beakers or small jars with lids (100 ml) marked with the names of the plastics • Worksheet created by the teacher, listing the name, abbreviation and recycling symbol of the four different plastics • One 500 ml rectangular plastic tub; spoon; tap water; Salt; Absorbent kitchen paper; Some cosmetics and personal care products containing microbeads. • Clear acetate sheets; Magnifying glasses or a microscope • Transparent plastic cups; • Dishwashing detergent A sample of sand polluted withplastic and other waste. (Nearlyevery European sandy beach containsmicroplastics, along with plasticfragments of different sizes.)

12. Tips for educators / theoretical background (if applicable) or curriculum context	Source URL: www.scienceinschool.org I Science in School I Issue 34: Winter 2015