Marine Litter – Lesson Plan

St. Maria Bay, Comino

Introduction:

This lesson plan aims to introduce the pupils into marine litter, from its origins to the problems it causes when entered the sea. These lessons are intended for students around the age of 10 but can be adapted to younger students as well (offers are marked in blue). *Hints/comments* are *cursive*.

Learning Outcomes:

Students will be able to:

- name different ways of how litter gets into the sea.
- explain dangers that man-made items can cause to the environment/animals.
- speak about the plastic island.
- reflect about the waste of plastic in their daily lives.

Time required:

- Session 1 (45 min): introduction & origin of plastic
- Session 2 (45 min): problems caused by plastic, internet research & finding solutions

Resources/Material required:

- Pictures 1 & 2 (1: healthy habitat under the sea, 2: polluted habitat under the sea)
- story about Net
- collection of man-made items
- video as explanation of problems caused by marine litter
- internet for research and quiz (kahoot)
- supporting material (scaffolding) for writing the letter to Net

Sustainable Development Goals:

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Classroom Session 1:

Time	Phase	Action of Teacher	Action of Students	Material
5 min	Introduction	T shows picture 1: „Tell me what you see!"; T shows picture 2: „What is different to picture no. 1?"; T: „What is marine litter?"	S describe pictures, focus on difference S try to find definition for marine litter	Pictures 1 & 2
15 min	Development of Background Knowledge	T reads out letter by turtle Net* (T introduces this by naming the main topic: problems caused by litter); T shows blackboard with word (/picture) collection to choose from: „Which things harmed Net and the other sea animals? Please put them all on one side!"; T brings real items (that could be) found at the beach and asks why they could cause trouble	S listen carefully S assort words (/pics) on blackboard in two groups: natural and man-made things S relate to Net's letter and explain why man-made items cause damage	Letter by turtle Net; Blackboard with prepared words/pics real items, e. g. fishing net *(more hands-on)*
15 min	Research	T: „Now we know that these items can harm animals and the environment. But where exactly does the marine litter come from?"; T presents boxes to separate the items T: „How do these items find their way into the sea?"; T is writing the possible reasons on the blackboard (/use pics)	S assort the items regarding their origin S find out ways (e. g. through wind, rivers, garbage at the beach, rain, storm drains, reckless people, …)	Boxes to assort items in „food & beverage", „items for the beach" (toys, sun cream), „fishing gear", „others"; Blackboard for words (/pics)
10 min	Secure the Knowledge	T conducts quiz via kahoot app to secure knowledge	S do the quiz in plenum	Kahoot on tablets

T = teacher, S = student(s)

*use a real name like Net as he was in the rehab center in Malta

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Classroom Session 2:

Time	Phase	Action of Teacher	Action of Students	Material
3 min	Revision	T asks S about Net and his letter, e. g.: „Do you remember Net? What did he tell us in his letter?"; T reactivates children's knowledge regarding litter	S recapitualte their knowledge regarding litter	none; map that shows the way of litter into the sea
12 min	Development of Background Knowledge	T shows video that explains the problem of litter in the environment (origin etc.); T asks questions regarding understanding and recapitulates important facts with the use of pictures/graphics (e. g. a bar chart to show the mentioned percentages)	S watch the video carefully and are able to answer questions, probably come up with some questions regarding understan-ding	Video: "The Story of Plastic"; use pictures / graphics to recapitu-late the important facts of the video
20 min	Internet Research	T enables internet access and arrange students in small groups T monitors the internet research T: „What did you find out so far?"	S look up the plastic island on the internet in a small group S gather their information in an adequate way, e. g. in keywords S share their collected information with each other	Internet access; create a website on your own*2 to ensure that the children get appropriate material
10 min	Development of Solutions	T initiates a discussion about possible solutions or things we all can do to help (awareness for daily waste) T creates a mindmap on the blackboard	S come up with ideas of how they can help to reduce marine litter	blackboard

T = teacher, S = student(s)

*2It would be great if EkoSkola could offer a website like this (maybe via "padlet") where appropriate websites/information, photos and videos are collected. It's an important safety precaution for primary school!

Task for the next English/Maltese lesson:

- writing a letter to Net where the children share their collected ideas of how to help Net and the environment

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Further Ideas:

- creating a poster for school public (e. g. about the plastic island), e. g. using an acrostic
- writing a newspaper article (→ Young Reporters for the Environment)
- creating a short video of the work the children did (e. g. Clean Up Days, assorting the collected rubbish, research etc.) to show others the importance of our awareness and action
- looking for plastic products in school environment (→ tasks to raise more awareness)
- broach the issue of waste disposal (in Malta and worldwide)
- broach the issue of labels (different labels for recycling, origin of material etc.)
- arts: drawing a picture (/doing handicrafts) about the life of Net
- maths: survey of how many litter is produced per class per week; assorting collected litter from a Clean Up Day and creating (bar) charts
- science: use microscopes to identify microplastic in different samples of water
- music: creating a piece of music or even a small musical (present in front of an audience to involve the public)
    - o proposal 1: use the collected litter as instruments (different instrument groups: cracking noise of plastic bottles, rattling of tiny plastic pieces in container etc.; add cleaned glass bottles to produce sounds by blowing); advise: use the method of "soundpainting" (by Walter Thompson)
    - o proposal 2: create a rap that contains main aspects of marine litter and student's solutions → present it in front of the school, the parents etc.
    - o proposal 3: project week to create a musical where students can put their knowledge into music, poems, a rap etc.; use collected litter for stage design

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Material:

<u>Story of Net</u>:

Hello, my name is Net! I am a turtle, 15 years old and not long ago I lived in the Rescue Center in Malta. Let me tell you my story.

Usually, I live in the wide ocean, surrounded by beautiful colours and many animals! There are great spots for eating. I love crabs, plants and jellyfish. One day there was a big storm, the sea was rough and a fisherboat lost its net. Suddenly, I found myself in the net! I tried to get out, I floundered, I turned around again and again. The net tightened and I could barely swim. The storm calmed down. As I was close to the coast, some humans from Nature Trust Malta found me. They rescued me and brought me into the Rescue Center. On the way I saw the beach: tiny pieces of colourful plastic, beverage cans, glass and plastic bottles as well as old cigarettes. Lots of cigarettes. In the Rescue Center they released me from the net but it still hurted as my flippers were inflamed. To take my mind off the pain, I looked at the photos on the wall. There were pictures of other sea animals. One showed a turtle with a cracked carapace, another one a dead sea bird with its stomach full of plastic: red, green, blue, orange and yellow pieces like straws, caps, food wrappers. I think some friends of mine were suffering from that as well. Some died and we didn't know why. They suddenly couldn't eat anymore as their stomach was full of human plastic. For us turtles especially the plastic bags are a danger because we think they are jellyfish.

I was lucky: Kind humans found and rescued me. 10 months later they released me at Golden Bay. Many people were there and they applauded me when I entered the sea. Now I am a bit more aware of the dangerous litter in my home. Anyway, sometimes I am sure a jellyfish is right in front of me but it's just another plastic bag. Sometimes I see fish, other turtles and even birds struggeling with ghost nests of fisher men. Life is getting hard in the sea. I just wanted to let you know. Maybe you have an idea how to help me and my friends? I really seek for help, not only for me but for future generations of turtles, fish, sea birds and all the other creatures living in the ocean. Please let me know if you got any idea.

I look forward to your answers!

Best regards,

Net the turtle

PS: Have you ever heard of the plastic island? Friends of mine told me about it. It should be massive! Maybe you find out something about that as well!

<u>Examples for the blackboard (word or picture):</u>

man-made: plastic bags and bottles, cigarettes, caps, food wrappers, beverage cans, fisher nets, straws, plastic cutlery;

natural: plants, fish, corals, jellyfish, octopus, sharks, sea weed, alges

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Picture 1 (example):

Picture 2 (example):

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Video Material:

The Story of Plastic (Animated Short) - YouTube
(https://www.youtube.com/watch?v=iO3SA4YyEYU)

Other video ideas:

A Whale's Tale | Hope Works - YouTube → no voice/words (younger children can easily follow), could follow the letter of Net (https://www.youtube.com/watch?v=xFPoIU5iiYQ)

Reduce, Reuse and Recycle, to enjoy a better life | Educational Video for Kids. - YouTube → explaining the 3 R's; the "earth" speaks; https://www.youtube.com/watch?v=OasbYWF4_S8

Sources and impacts of marine litter by Jane Lee/ Marlisco - YouTube → video by Marlisco is really good, without words BUT maybe there needs to be a warning as pictures of dead animals appear (https://www.youtube.com/watch?v=017bBeXhYz4)

The journey of plastic - YouTube → really short, shows the cycle of plastic: consumption, marine litter, seafood with microplastics (https://www.youtube.com/watch?v=drwg5PYfKss)