



Course title: Learning about the waste floating in the sea

Unit 1: Where is the duckling going?

Did you know that...

Maritime waste consists of objects that are made or used by humans and are deliberately or unintentionally left to the seas and coasts. As far back as the Golden Age of Pericles (5th century BC), the Athenians were throwing away the remnants of silver mining in the sea, and later the Romans (1st-4th century BC) contaminated their ports with lead. So the problem is very old and concerns the seas of the whole world.

Language

ICT

Physics

School class set

40 minutes

Goals

- Acclaim plastics as an important source of marine pollution.
- Learn about how marine pollution is caused from plastics, such as direct dumping of objects at the sea and their journey.
- Realize the importance of marine pollution from plastics, studying the evolution of relevant events.

Materials

Computer, projector for viewing, plastic ducklings

Procedure: "In class and in practice ..."

It is suggested, to project two short videos in the classroom in order to help pupils understand the magnitude of the marine pollution problem. The first of these is called "The Epic Journey of the Plastic Ducks", which will be also the launching pad for the follow-up discussion with the kids about trash - especially plastic –



Unit 2: And the floating plastic hazard was wearing yellow...

Did you know that...

Sea current is called any continuous movement of sea water in the same direction over a sea area. They are distinguished into surface currents, mainly driven by the wind, and deep currents, also called "submarine rivers" that flow beneath the sea surface.

Geography

Physics

Language

School class set

40 minutes

Goals

- Practice in using maps, globe, in order to understand the parameters of the evolution of a polluting incident.
- Become familiar with concepts related to marine currents.

Materials

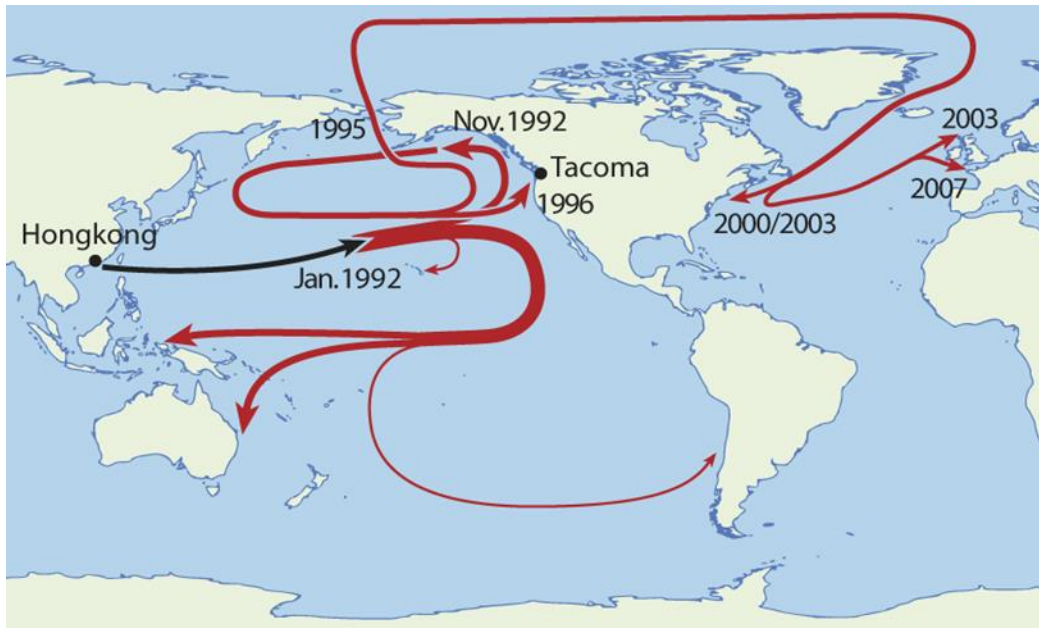
Maps, globe

Activity: "The journey of pollution empowered by the sea currents"

In the classroom, we watch the video "The epic journey of the plastic ducks" for a second time, in order the pupils to understand how the sea currents move.

<https://www.youtube.com/watch?v=AvchIWftt80>

Using a globe, we discuss the movement of marine currents worldwide. We give out the worksheet.



1) Study the whole journey of the yellow ducklings following the sea currents from the accident point onwards on the map. (Their adventures are monitored by the oceanographer Curtis Embesmeier, and other scientists having the help of sailors, satellites and the knowledge of ocean currents.)

2) Answer the questions below with the help of the map above, a world map, and the video:

1. After how many years did the ducklings cross the Bering Strait?
.....

2. Did they pass through Greenland?
.....

3. Did any of them get stuck in the Antarctic ice?
.....

4. When did they get to the point where the Titanic sank?
.....

5. Think and formulate your thoughts by arguing, in a text of up to 300 words for the newspaper of your class, entitled:



“Pollution doesn't accept borders”

Unit 3: Traveling with a Turtle...

Did you know that...

When a person directly or indirectly introduces substances or energy into the marine environment causing harmful effects, it pollutes the sea. This behavior poses risks to human health, damage to subsistence, barriers to marine activity (fishing) and reduces seawater quality.

Language

Theatre
Education

School class set

40 minutes

Goals

- Realize the danger of plastic waste pollution, understanding their deadly route through the food chain.
- Understand the dangers looming over the marine life by swallowing plastic objects.
- Explore possible ways to avoid and deal with marine pollution by modifying daily behaviors and taking targeted actions.

Materials

Computer, projector for viewing, plastic items

Activity 1st: "This is not my food!"

Using Archipelago's photos, we discuss with children the marine pollution and its impact on any living organism. We then divide the children into groups (approximately 4-5 children per group) and provide them with relevant photographic material, highlighting the dangers of marine species on their sea journey due to the pollution of the seas by waste. We ask from each group to choose a name and to present its work data, filling in for each dangerous object:



Enhancing critical thinking in schools for marine pollution using innovative ICT technologies (Sea4All)



Erasmus+

Yes it was there too:

I imagine it has arrived...

It wouldn't be there if ...

Alternatively, they can also complement the mesostic.





Activity 2: “: My Life... A Survival Adventure! Sos »

Take a look at the photos below.

Following the turtle's route put the photos in order, and dramatize her "adventure".

You can use as many photos as you like in order to dramatize a little adventure of the turtle that you will think up.



Enhancing critical thinking in schools for marine pollution using innovative ICT technologies (Sea4All)





Fill in the mesostic:

1					H	U	M	A	N					
2						S	A	L	T					
3				C	U	R	R	E	N	T				
4	J	E	L	L	Y	F	I	S	H					
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6						S	E	A	L					
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8					F	O	O	D						
9			D	U	C	K	L	I	N	G	S			
10						P	L	A	S	T	I	C	S	
11						T	U	R	T	L	E			
12			C	O	A	S	T	S						
13						D	I	S	T	A	N	C	E	S
14						T	O	U	R	I	S	M		
15					S	U	N							

- 1) He is at the top of the food chain
- 2) A product of the sea that is also adversely affected by marine pollution.
- 3) Any continuous movement of sea water in the same direction over a sea area.
- 4) The favorite food of the sea turtle.
- 5) Wastes that remain in the surface of the sea.
- 6) Plastic stoppers that we often find on the beaches.
- 7) Plastic bags are often for sea animals.
- 8) The microplastics that the fish eat are transported through the chain to our plate.
- 9) They traveled to many parts of the earth after their wreck.
- 10) Some of the most harmful waste that pollutes the seas and coasts.
- 11) Sea animal endangered by forgotten or damaged nets.



- 12) We have to leave only our traces in order for them to be always clean.
- 13) Garbage can travel in large through sea currents.
- 14) Economic activity that is adversely affected by marine pollution.
- 15) Helps in the faster decomposition of marine litter.



Unit 4: If the ducklings were talking ...

Language

School class set

40 minutes

Goals

- Develop a critical and creative thinking
- Be able to express and describe experiences and emotions
- Understand that marine pollution is “traveling” and is a global problem

Materials

Plastic toys, postcards

Activity: "If I were a duckling too ..."

We give children various plastic toys and mainly ducklings. We also show them postcards and explain that writing and sending cards used to be a habit of people who traveled and visited different places since there was no internet and computers. We ask from children to give a voice to the ducklings or to some other game that traveled in the sea and write its story on the postcard that follows.



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Report - Evaluation

- **Questions for reflection**

- If you were representing your country, in a prize pool: "Clean Seas", which ones would you recommend and by what criteria? Which organizations would you consult?
- What could you do in your daily life to help tackle the problem of marine pollution?

- **Activity**

We divide our pupils into three groups and work out the following scenarios:

1st group:

Discuss with your school's environmental team how to deal with sea pollution from plastic objects. Then you write your views in the school newspaper in an article entitled "We all say no to plastic life ..."

2nd group:

Discuss with your family three daily habits that you need to break in order to help reduce plastic usage and marine ecosystem pollution. Which ones?



3rd group:

Our city participates in the European program: "Seas without plastic. Together we can manage it". In an open event, a representative of a voluntary group of citizens mentions two actions to raise awareness of citizens. What could you think of?

Possible extensions

In each activity pupils must use the Sea4all game in order to understand better the problem of pollution and realize the fact that it concerns us all.

Keywords

Marine pollution, marine currents, floating plastic objects

Bibliography - Links

The epic journey of the plastic ducks: <https://www.youtube.com/watch?v=AvchIWftt80>

Great Pacific Garbage Patch-Ocean Pollution Awareness:

<https://www.youtube.com/watch?v=1qT-rOXB6NI>