

Recycling - Reuse - Consumption Reduce

Unit 1st: Plastic dumped in seas and shores

Did you that...

At least 8 million tones of plastic enter into our oceans each year! They are about 1,000 tones of plastic every hour!!!! The production of disposable plastic packaging, especially for foodstuffs, which is discarded in the environment, has increased dramatically. Thirty-two percentage (32%) of this plastic waste eventually ends up in seas, rivers, lakes, etc.



Language - ICT

Physics



2 teaching hours



Recycling - Reuse -
Consumption
Reduce

Goals

- Recognize plastics as one of the major sources of marine pollution.
- Learn about the effects of marine pollution from plastic objects on many sea species.

Materials

PC, projector, printer, glues, cardboard, markers

Suggested Activities

Act. 1st: "And the floating plastic hazard was wearing yellow ..."

Step 1st: Dividing into project-sharing groups

We divide the children into 3 groups and we share an article with each one group in order to help pupils understand the magnitude of the marine pollution problem.

Group 1st: To the "seabirds" group we share the article <https://tvxs.gr/news/periballon/ennea-sta-deka-thalassopoylia-exoyn-faei-plastika&dr=tvxsmrstvxs>

this will also be the start of a discussion with children about plastic waste floating in the seas and lying on shores.

Group 2nd: In the group "Turtles" we share the article <https://www.tanea.gr/2018/09/14/science-technology/apo-plastiko-pethainoun-sxedon-oi-mises-xelones-ston-okeano/>

which refers to the death of sea turtles from plastic ingestion.

Group 3rd: In the group "Mammals" we share the article <http://www.naxostimes.gr/perivallon/14886-ta-plastika-skotosan-tin-falaina-pou-ksevrastike-sti-santorini>

which refers to the death of marine mammals and in particular of a whale from swallowing plastic.



**Step 2nd: Material processing - Presentation of
results**

Each group has to present to the rest of the groups the article that has undertaken. There is plenty of material on the internet for all groups that children can use in their preparation. The presentation can initially be done in any way the group wants (dramatization, news release, frozen image etc.). Then a poster is created by each group which is good to be displayed in a central school spot in order to diffuse the outcomes.

Unit 2nd: Estimate and count... reduce plastic as much as I can!

Did you know that...

The best way to reduce the amount of plastic that is dumped into the sea is simply to reduce its use by all of us.

Most countries have adopted policies that include improved practices in legislation, waste management strategies, education, awareness-raising, recognition of the origin of marine pollution as well as in increased monitoring and further research on microplastics, in the introduction of biodegradable plastics and their adverse effects on marine organisms.



Maths
Social and Political
Education



1 teaching hour



Recycling - Reuse -
Consumption
Reduce

Goals

- Practice in mathematics so that pupils can calculate for themselves the data currently available in Greece regarding the use of plastic bags.
- Be aware of how much plastic is dumped into the seas every day.
- Realize that each of us can help reduce marine pollution from plastic waste by changing our daily habits and finally make suggestions.

Materials

Computer, projector, printer

Suggested Activities

Act. 1st: "Count on paper ... reduce pollution in life"

We give out in class the following issue of the Official Government Gazette

http://www.statistics.gr/documents/20181/1210503/FEK_monimos_rev.pdf/125204a0-726f-46fe-a141-302d9e7a38dc and <https://www.iefimerida.gr/news/394327/oi-ellines-ekopsantin-plastiki-sakoyla-poy-hreonetai-pleon-kai-pairnoyn-tsantes> which will be sources of data to process for our pupils.

Procedure

- A) We divide our pupils into two.
- B) We give the following instruction: Using the statistics on our country population and the reporting data on the use of plastic bags, complete the following worksheet with your duo.



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



We give to the children the following issue of the Official Government Gazette (if we have a projector, we can present it there avoiding printing the corresponding articles). Then we give to the children the article from *iefimerida* and ask them to complete the following worksheet.

C) We form groups of four.

D) We ask from pupils to work as advertisers: "Taking into account the data from the worksheet you completed, create a small spot to raise awareness of the need to reduce the consumption of plastic bags. Then share what you created with your classmates.



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ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ

ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ

ΤΕΥΧΟΣ ΔΕΥΤΕΡΟ

Αρ. Φύλλου 698

20 Μαρτίου 2014

ΑΠΟΦΑΣΕΙΣ

Αριθμ. ΓΠ-191

Τροποποίηση της Απόφασης με αριθμό 11247/28.12.2012 (ΦΕΚ 3465/Β'/28.12.2012) και θέμα «Αποτελέσματα της Απογραφής Πληθυσμού-Κατοικιών 2011 που αφορούν στο Μόνιμο Πληθυσμό της Χώρας».

Η ΕΛΛΗΝΙΚΗ ΣΤΑΤΙΣΤΙΚΗ ΑΡΧΗ

Έχοντας υπόψη:

1. Το Νόμο 3832/2010 (ΦΕΚ 38/τ.Α'): «Ελληνικό Στατιστικό Σύστημα Σύσταση της Ελληνικής Στατιστικής

όπως αναθεωρήθηκε και εγκρίθηκε στις 28 Σεπτεμβρίου 2011 από την Επιτροπή του Ευρωπαϊκού Στατιστικού Συστήματος.

6. Το άρθρο 90 του Κώδικα Νομοθεσίας για την Κυβέρνηση και τα κυβερνητικά όργανα που κυρώθηκε σε ενιαίο κείμενο με το άρθρο πρώτο του Π.Δ. 63/2005 (ΦΕΚ 98/Α'/22.04.2005) «Κωδικοποίηση της Νομοθεσίας για την Κυβέρνηση και τα Κυβερνητικά Όργανα».

7. Το Π.Δ. 168/2008 (ΦΕΚ 223/Α'/04.11.2008) «Διενέργεια Γενικών Απογραφών Οικοδομών-Κτιρίων και Πληθυσμού - Κατοικιών, κατά τα έτη 2010-2011».

8. Τον Ν. 3852/2010 «Νέα Αρχιτεκτονική της Αυτοδιοί-

10476

ΕΦΗΜΕΡΙΣ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ (ΤΕΥΧΟΣ ΔΕΥΤΕΡΟ)

12. Την απόφαση με αριθμό 11247/28.12.2012 (ΦΕΚ 3465/Β'/28.12.2012) σχετικά με τα αποτελέσματα της Απογραφής Πληθυσμού-Κατοικιών 2011 που αφορούν στο Μόνιμο Πληθυσμό της Χώρας.

13. Το γεγονός ότι κατά την ολοκλήρωση της επεξεργασίας και ελέγχου των συλλεγέντων στοιχείων της Απογραφής Πληθυσμού-Κατοικιών 2011 προέκυψαν μικρές αποκλίσεις από τα αρχικώς δημοσιευμένα στοιχεία.

14. Το γεγονός ότι από την παρούσα απόφαση δεν προκαλείται καμία δαπάνη, αποφασίζει:

Τροποποιούμε την ανωτέρω απόφαση σχετικά με τα αποτελέσματα της Απογραφής Πληθυσμού-Κατοικιών 2011 που διενεργήθηκε σε ολόκληρη τη Χώρα το

διάστημα από 10 έως 24 Μαΐου 2011, με ημερομηνία

αναφοράς την 9η Μαΐου 2011, τα οποία αφορούν στο

Μόνιμο Πληθυσμό της Χώρας, κατά Περιφερειακή Ενό-

τητα, Δήμο, Δημοτική Ενότητα, Δημοτική και Τοπική

Κοινότητα και οικισμό, όπως αυτά εμφανίζονται στον

παρακάτω πίνακα.

α/α	Περιγραφή	Μόνιμος Πληθυσμός
1	ΣΥΝΟΛΟ ΧΩΡΑΣ	10.816.286
2	ΒΟΡΕΙΑ ΕΛΛΑΔΑ	3.110.835
3	ΑΠΟΚΕΝΤΡΩΜΕΝΗ ΔΙΟΙΚΗΣΗ ΜΑΚΕΔΟΝΙΑΣ - ΘΡΑΚΗΣ (Έδρα: Κομοτηνή,η)	2.490.290
4	ΠΕΡΙΦΕΡΕΙΑ ΑΝΑΤΟΛΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ (Έδρα: Κομοτηνή,η)	608.182
5	ΠΕΡΙΦΕΡΕΙΑΚΗ ΕΝΟΤΗΤΑ ΡΟΔΟΠΗΣ (Έδρα: Κομοτηνή,η)	112.039
6	ΔΗΜΟΣ ΑΡΡΙΑΝΩΝ (Έδρα: Φιλλύρα,η)	16.577
7	ΔΗΜΟΤΙΚΗ ΕΝΟΤΗΤΑ ΑΡΡΙΑΝΩΝ	5.589
8	Τοπική Κοινότητα Αγιοχωρίου	226

- This issue of the Official Government Gazette refers to the population of Greece according to the census of 2011.
- The official number of Greece's population will be used in the following worksheet.



How many plastic bags can a human lift? (Worksheet)



1. *Given the population of Greece in the last official census of 2011 as well as how many plastic bags per head is the target of the country by 31 December 2019; find out how many plastic bags we can consume as a state in 2020.*

Answer:

2. *Knowing how many plastic bags accounted for 2018 per capita; find how many were used in the Greek territory as a whole in 2018.*

Answer:

3. If we consider that about 20% of plastic bags used end up in the sea; calculate how many bags were dumped in the sea in 2018 alone.

Answer:

Unit 3rd: Learning not to throw away, learning how to reuse

Did you know that...

Our seas are full of plastic bottles (which unfortunately do not carry messages) and lids that travel for years until they "slip" on a beach. "Plastic soups" are created in various parts of the seas of our planet.



Maths
Social and Political
Education



1 teaching hour



Reuse,
Plastic soup

Goals

- Get to know the value of reuse in order to reduce waste
- Create easy-to-use items on their own that will help them in their school life, as well as in their lives in general.

Materials

Plastic bottles, lids, a pair of scissors, paints in different colors suitable for plastic bottles

Suggested Activities

Act. 1st: "Re-molding plastic ... reducing waste"

We gather disposable plastic bottles, distribute them to the children and start various constructions.

A) with the lids we make spinning tops as shown below: We make a hole right in the middle of the lid using the scissors. Some lids have a slight bump there.

We enlarge the hole, if necessary. We put a toothpick or a skewer stick (after cutting the top).

We decorate if you want the toothpick with insulating tape, paper tape etc.





B) make small storage case

Cut a plastic bottle close to its stopper. By using two plastic lids we can create a small storage case, e.g. to transfer coffee or sugar.



C) Cut the bottle in the way it is shown in the photos in order to make a case for soap, sponge, or whatever we can think of.





Act.2nd: “React and act: Take control of plastic»

A) The pupils are divided into groups of four. They can also give their group a name that relates to recycling and reuse, e.g. "Blue Bins", "Recyclers" etc.

B) We instruct them to compose a text for their school's newspaper, in which they will encourage their classmates and friends to reuse plastic items, reducing plastic pollution. Pupils are called to report their own personal reuse experiences that took place in the classroom and at home (if any), attaching photographs of the constructions. Finally, articles can be enriched by using material, links, and images from the internet.

C) Pupils pin their articles on the school bulletin board, signing with their group name.

Unit 4th: Recycling for a healthy planet!

Did you know that...

Recycling is the process of reusing various materials or anything that is a rapid result of human activity and which in its current form is no longer good for humans. In this process, waste is usually converted into raw materials from which new products are produced.



Maths

Civics



1 teaching hour



Recycle,
Reuse

Goals

- Be able to express and describe experiences and feelings

Materials

Garbage bags

Suggested Activities

We plan a visit to a nearby beach with our class. After having given to the children gloves and bags we proceed to the cleaning of the beach. It is very important to ask from the children not to pick up glass, sharp or rusty objects. Any object that we will collect goes to a predetermined place where we will count them. We record and put the trash (recyclable or not) back in the garbage bags. We carry and store them at a predetermined location (prior consultation with the competent municipal cleaning service).

[illegible]



Report - Evaluation

- Can marine litter problem be solved if we (all?) follow the three-fold of Reduction-Reuse-Recycling?
- What if we leave things as they are right now and remain idle?
- What does the phrase "I am an active citizen" mean to you personally? This also exists somewhere else but it is very important

Possible extensions

- In each activity pupils can use the Sea4all game and website.
- Exhibition of objects that have been recovered from nearby to the school beaches and somehow have been reused (by making useful objects or by creating artwork, etc.).
- Post articles relevant to activity 1 on the local press or on the school's website.
- Post articles relevant to activity 4 on the local press and on the school's website.

Keywords

Recycling - Reuse – Reduction of consumption, marine pollution, marine currents, floating plastic objects

Bibliography- Links

The photo of the plastic bag has been retrieved from <http://hddfhm.com/clip-art/plastic-bag-clipart.html>

- The photos of the plastic bottles constructions have been retrieved from <https://blogs.sch.gr/dimskot/files/2015/03/%CE%91%CE%95%CE%99%CE%A6%CE%9F%CE%A1%CE%9F-%CE%A3%CE%A7%CE%9F%CE%9B%CE%95%CE%99%CE%9F-%CE%A3%CE%9A%CE%9F%CE%A4%CE%9F%CE%A5%CE%A3%CE%A3%CE%91%CE%A3-%CE%A3%CE%95%CE%A1%CE%A1%CE%A9%CE%9D.pdf>
- The photo of the plastic spinning wheel has been retrieved from <https://www.creativejewishmom.com/2010/11/a-handmade-hanukkah-game-spinning-tops-from-plastic-bottle-caps.html>