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# “PLASTEAM - STEAM education for plastic-free primary schools”

# No. 2020-1-NL01-KA201-064581

## O1-A1

## Methodology for the development of Plastic footprint for primary school

## Statistics Report

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# Introduction

"PLASTEAM - STEAM education for plastic-free primary schools" is a 30-month project, co-funded by the European Commission under the Programme Erasmus+, Strategic Partnership composed by 8 Partners from 5 different EU countries (Netherlands, Greece, Romania, Italy & Malta), as follows:

| | | |
|---|---|---|
| P1 | Agora Roermond | The Netherlands |
| P2 | Asociatia Centrul National Pentru Productie si Consum Durable | Romania |
| P3 | Scoala Gimnaziala nr.10 | Romania |
| P4 | Mediterranean Information Office for Environment, Culture and Sustainable Development Association | Greece |
| P5 | St. Michael school | Malta |
| P6 | Effebi Association (EFFEBI) | Italy |
| P7 | Stichting Nationaal Centrum Voor Wetenschaps – En Technologiecommunicatie | The Netherlands |
| P8 | Private school Themistoklis S.A | Greece |

PLASTEAM aims to educate pupils and staff from primary schools in responsibly using, consuming and recycling plastic items, to inform about their environmental impact, to provide didactical STE(A)M activities for promoting sustainable waste (including plastics) disposal systems in primary schools and to support individuals in acquiring basic skills to foster their participation to a sustainable social development.

According to the project Methodology, this document is part of **Step 3:** Development of questionnaires related to plastic use individual and school (one for students and one for teachers and school staff).

It was realized by project partner Scoala Gimnaziala nr. 10 Suceava, Romania. The aim of this questionnaire was to collect data about the plastics' consumption, disposal and recycling by the primary and secondary level students and to identify the most used plastics items. It was addressed to students of age up to 12 years old from the project countries and it was anonymous.

**The specific document is a statistics report of the fully completed questionnaires, answered by 545 pupils coming from the five 5 project countries (from a total of 952 that partly filled it). The survey run during the period from 11/03/2021 to 12/05/2021 and it was promoted through the partners' channels in their countries.**

**In this report, all data from the pupils' filled questionnaires are analysed and the results that are presented will feed in the development of the Plastic Footprint and other PLASTEAM outcomes.**

**The questionnaire was designed to be filled in by at least 10 pupils from each country, but some of them involved much more.**

# Statistics

## Demographic data

### Where do you live?

In which school do you go to school?

| Răspuns | Numara | Procentaj brut |
|---|---|---|
| Netherlands (A2) | 9 | 1.65% |
| Greece (A3) | 18 | 3.30% |
| Romania (A4) | 251 | 46.06% |
| Italy (A5) | 256 | 46.97% |
| Malta (A6) | 11 | 2.02% |
| Niciun răspuns | 0 | 0.00% |
| **Total(brut)** | **545** | **100.00%** |

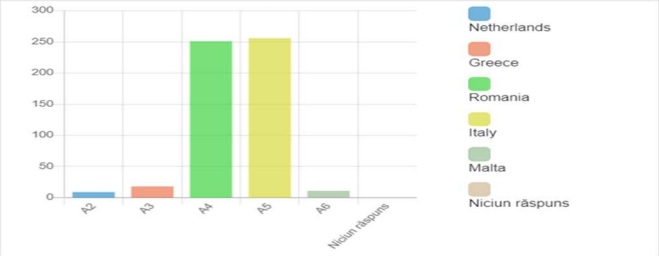



*Figure 1 Surveyed countries*

In the specific survey, 547 students from 5 countries (Netherlands, Greece, Romania, Italy & Malta) completed it successfully. Around 90% of the sample were from Italy and Romania while the rest came from the other three countries. Specifically, 46,8% (256 respondents) were from Italy, 46,8% (256) from Romania; 3,47% (19) from Greece; 2,01% (11) from Malta; and 1,83% (10) from the Netherlands.

**Based on the above sample of the respondents, we need to highlight that we can have "trustworthy" findings only for Italy and Romania. For the rest of the countries (Greece, Malta and the Netherlands) due to the small number of responses, we cannot treat their data quantitatively. Even so, the data from all 5 countries are presented in the following tables and graphs, and they are analysed in a qualitative rather than a quantitative manner.**

### Which is your school grade?

According to the table below the secondary level students outnumber those of primary level, but we have to agree that the term "secondary" differs from country to country, therefore, we also insert the respondents' age (Table 2).

| level | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| primary | 33,33% | 50,00% | 21,91% | 10,16% | 27,27% |
| secondary | 66,67% | 44,44% | 71,31% | 78,52% | 63,64% |
| Not specified | 0 | 5,56% | 6,77% | 11,33% | 9,09% |

*Table 1 School grades*

| age | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| 6 years | 22,22% | 11.11% | 0,80% | 0 | 9.09% |
| 7 years | 0 | 0 | 5.58% | 0,78% | 0 |
| 8 years | 0 | 5.56% | 10,36% | 0 | 0 |
| 9 years | 11.11% | 11.11% | 12,75% | 17,58% | 18,18% |
| 10 years | 0 | 5.56% | 26, 29% | 30,47% | 9,09% |
| 11 years | 11.11% | 22,22% | 21,12% | 39,06% | 27,27% |
| 12 years | 0 | 0 | 0,80% | 1,95% | 36,36% |
| 13 years | 22,22% | 27,78% | 0 | 0,39% | 0 |
| other | 33,33% | 16.67% | 22,23% | 9,77% | 0 |

*Table 2 Pupils' age in each country*

Based on Table 2, we can see that most of the surveyed pupils are 10 and 11 years old, followed by 9 year olds. Older and younger age groups participate in smaller numbers, while some respondents have not specified their age.

For some of the survey questions (e.g. relating to the presence of a bin for plastics at school -B.1, or the presence of canteen C.3), our analysis should not be based on the number of the surveyed students, but the number of the surveyed schools in each country. These are presented in the following table:

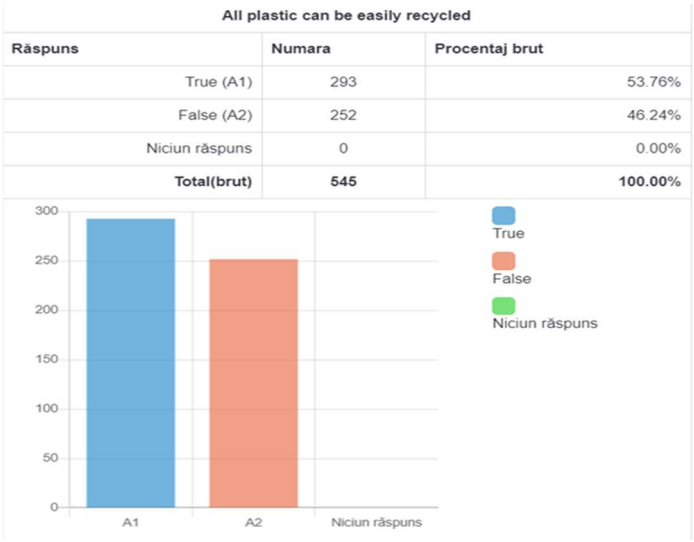
| | NL | GR | RO | IT | MT | TOTAL |
|---|---|---|---|---|---|---|
| Number of different schools | 8 | 11 | 11 | 4 | 7 | 41 |
| Percentage of different schools | 19,51% | 26,83% | 26,83% | 9,76% | 17,07% | 100% |

*Table 3 Country statistics of the surveyed schools*

# Section A - General overview of plastic waste disposal

## A.1 All plastic can be easily recycled.

Even if the pupils answering the survey come from different countries, with different educational backgrounds, the majority of the respondents consider that plastic can be easily recycled - a claim which is not true- and this is an interesting finding.



All plastic can be easily recycled

| Răspuns | Numara | Procentaj brut |
|---|---|---|
| True (A1) | 293 | 53.76% |
| False (A2) | 252 | 46.24% |
| Niciun răspuns | 0 | 0.00% |
| **Total(brut)** | **545** | **100.00%** |



*Figure 2 Countries' statistics*

Contrary to this false perception, in reality, from the hundreds of 'codes' of plastics that are in all sorts of products out there, just a few can be recycled in a commercially viable way. The most commonly used plastics are classified in 7 categories, however, not even these 7 codes can and do get recycled, in practice. Of course the effectiveness and efficiency of the recycling systems varies from country to country and even from city to city, however the conformity is that "Not all plastic can be easily recycled", for a number of reasons. And because of that, the plastics' recycling rates in many countries remain at low levels.

Possible reasons for this misperception held by the majority of the surveyed pupils might be their age and the fact they haven't learned about it at school. However, we should point out that this is not a matter for young ages only: adults also are repeatedly reported as wrongly believing that all types of plastics can be easily recycled.

(source: https://blog.nationalgeographic.org/2018/04/04/7-things-you-didnt-know-about-plastic-and-recycling/

https://www.dw.com/en/plastic-waste-and-the-recycling-myth/a-45746469)

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| true | 55,56% | 55,56% | 78,49% | 30,08% | 36,36% |
| false | 44.44% | 44.44% | 21,51% | 69,92% | 63,64% |

*Table 4 Countries' statistics*

The table above presents the country variance and shows a consistency in most of the surveyed countries in the prevailing misconception regarding the 'easynes' of recycling. Almost 8 out of 10 students from Romania hold this misconception, while, Italian and Maltese students are a comforting exception, with only 3 and 4 out of 10, respectively, wrongly believing that all plastic can be easily recycled.

### A.2 Plastics are synthetic materials.

According to figure 3, more than 2 out of 3 surveyed pupils know that plastics are synthetic materials.

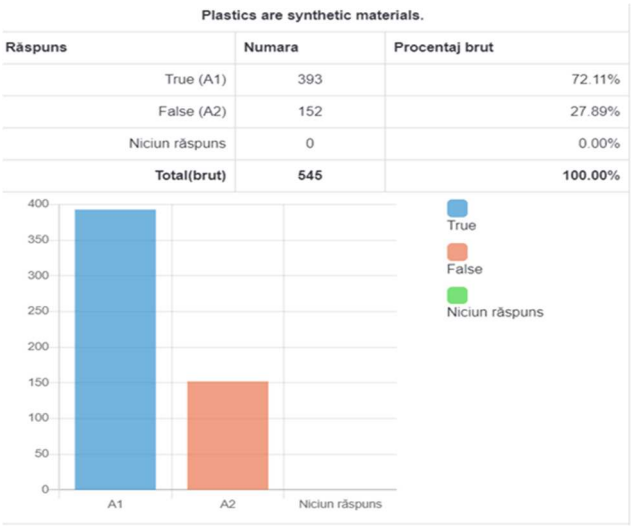



*Figure 3 Plastic is a synthetic material*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| true | 66.67% | 88,89% | 71,31% | 71,48% | 81,82% |
| false | 33,33% | 11,11% | 28,69% | 28,52% | 18,18% |

*Table 5 Plastic as a synthetic material*

The table presenting the country variation shows that students from Greece and Malta have the highest score to this question, but overall the pupils from all countries do know that plastic is synthetic.

### A.3 Many scientists say that by 2050, there will be more plastic than fish in the ocean.

According to the answers, we can conclude that the vast majority of the surveyed pupils are aware of this quote, which is about the risks for organisms and biodiversity posed by plastic pollution. Even though all countries have a high score in this question, Italy is at the top.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| true | 88,89% | 88,89% | 87,25% | 97,66% | 90,91% |
| false | 11,11% | 11,11% | 12,75% | 2,34% | 10,09% |

*Table 6 Countries' statistics*

Interestingly, this shocking claim is a quite recent one. It was originally quoted in a study by the Ellen MacArthur Foundation in 2016, and has since then gained universal popularity in talks, policy documents, presentations, campaigns as well as in the mainstream and social media. The fact that more than 9 out of 10 of the surveyed students are already familiar with it, is an indication of how strong and effective it has been as a communication slogan.

### A.4 Can you name an animal, bird or fish that is put at risk due to plastic pollution?

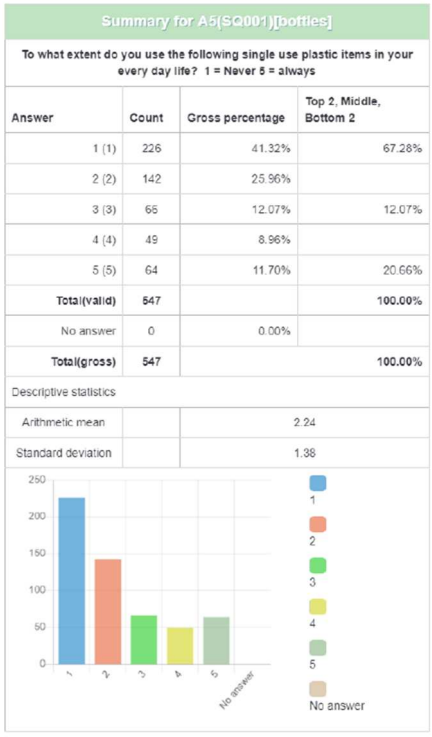
The most popular animals in students' replies are sea-associated, namely dolphins, whales and sea turtles. Apart from these, sharks, storks, seagulls, penguins, polar bears, swans, salmon, sardine and tuna, were often mentioned. Fewer students mentioned land-based animals that are not directly linked to the sea like the panda, deer, foxes; domestic animals like cat, dog and parrot; and an extinct animal today, the dodo bird.

About 2 out of 10 students did not specify any animal, but mentioned fish or birds in general. On the contrary, about 1 in 10 students named more than one animal, and quite a few specified the animal species (e.g. caretta caretta turtle, grey seal, Hawaean monk seal, or the monachus monachus seal).

The reply to this question demonstrates that students are familiar with the effect of plastic pollution, especially for sea related species, either through their teachers, their families or by watching TV and cartoons. One remark that we can make is that there is room for improvement, also through the PLASTEAM project, in linking the plastic pollution threats to land-based animals and birds.

### A.5 To what extent do you use the following single use plastic items in your everyday life (1 = never, 5 = always) (bottles, drinking cups, plates, bags, pencils or pens, boxes, straws, toys, markers)

In the figures below the usage of each SUP item asked is analysed and we find similarities and differences amongst the surveyed participants. The first item analysed is the **plastic bottle**.



Summary for A5[SQ001][bottles]

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Answer | Count | Gross percentage | Top 2, Middle, Bottom 2 |
|---|---|---|---|
| 1 (1) | 226 | 41.32% | 67.28% |
| 2 (2) | 142 | 25.96% | |
| 3 (3) | 66 | 12.07% | 12.07% |
| 4 (4) | 49 | 8.96% | |
| 5 (5) | 64 | 11.70% | 20.66% |
| **Total(valid)** | **547** | | **100.00%** |
| No answer | 0 | 0.00% | |
| **Total(gross)** | **547** | | **100.00%** |

| Descriptive statistics | | |
|---|---|---|
| Arithmetic mean | | 2.24 |
| Standard deviation | | 1.38 |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 4 Use of plastic bottles*

A very positive finding is that more than 2 out of 3 surveyed students state they never or rarely use plastic bottles (top 2 choices add to 67,28%, with the 1st choice 'never' reaching an impressive 41.32%). On the other hand, 1 in 5 surveyed students admit that they still use plastic bottles often or always (bottom 2 choices add to 20%) and this is a percentage we cannot be happy about. Another challenge for the PLASTEAM project would be how to capitalise this 41.32% of students stating they never use plastic bottles, so that they a) keep this habit as they grow older and b) influence their family and friends in doing so.

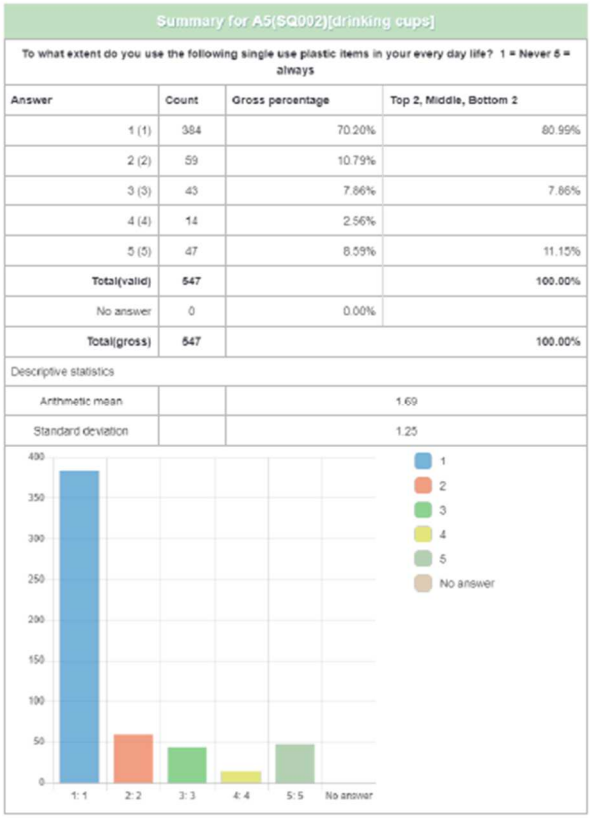
The use of **plastic bottles** per country is shown in the table below:

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 33.33% | 16,67% | 41,83% | 43,36% | 27,27% |
| rarely | 11,11% | 22,22% | 24,30% | 29,30% | 9,09% |
| sometimes | 11,11% | 22,22% | 9,16% | 13,28% | 27,27% |
| often | 22,22% | 27,78% | 11,55% | 4,69% | 9,09% |
| always | 22,22% | 11,11% | 13,15% | 9,38% | 27,27% |

*Table 7 Countries' statistics of the use of plastic bottles*

According to the country variation, Italian and Romanian students -the two countries with the highest and more reliable sample size- show the highest commitment in never or rarely using plastic bottles. Students from the other three countries have lower performance in this question, however their sample size does not allow us to generalise their plastic bottle use behaviour.

The second item analysed is the single use **drinking cups**, and as we can see in the below figure, these are used even less than water bottles. Actually, more than 7 out of 10 students never use them. This is an expected finding because the drinking cup is an item that is mostly used by adults that consume coffee as a take-away.



Summary for A5(SQ002)[drinking cups]

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Answer | Count | Gross percentage | Top 2, Middle, Bottom 2 |
|---|---|---|---|
| 1 (1) | 384 | 70.20% | 80.99% |
| 2 (2) | 59 | 10.79% | |
| 3 (3) | 43 | 7.86% | 7.86% |
| 4 (4) | 14 | 2.56% | |
| 5 (5) | 47 | 8.59% | 11.15% |
| **Total(valid)** | **547** | | **100.00%** |
| No answer | 0 | 0.00% | |
| **Total(gross)** | **547** | | **100.00%** |
| Descriptive statistics | | | |
| Arithmetic mean | | 1.69 | |
| Standard deviation | | 1.25 | |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 5 Use of plastic drinking cups*

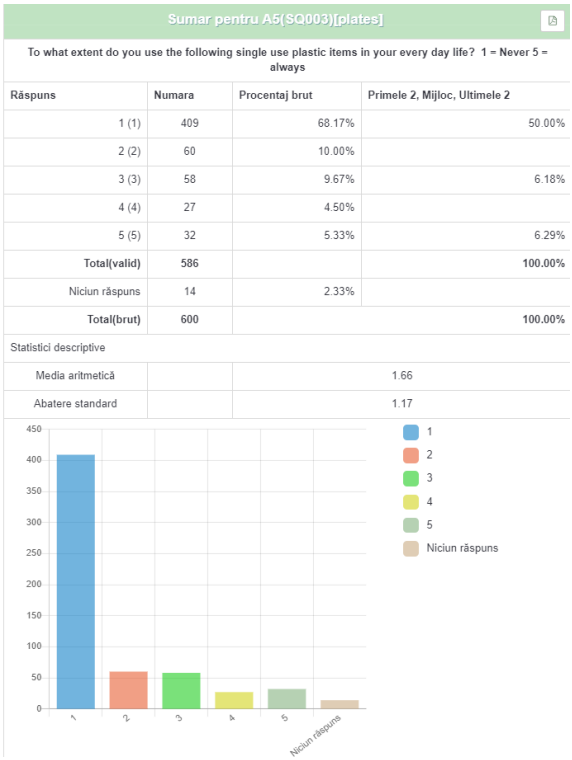
The table below shows the country variation. Again, we see that the two countries with a reliable sample size, Romania and Italy have both a satisfactory low level of SUP cups used, with Italy reaching an impressive 78.52% of students that never use them.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 55,55% | 50% | 64,14% | 78,52% | 54,55% |
| rarely | 22,22% | 11,11% | 12,35% | 8,59% | 18,18% |
| sometimes | 11,11% | 16,67% | 11,16% | 3,91% | 9,09% |
| often | 11,11% | 5,56% | 1,99% | 2,73% | 0 |
| always | 0 | 16,67% | 10,36% | 6,25% | 18,18% |

*Table 8 Countries' statistics of the use of plastic drinking cups*

If we speak about the use of **plastic plates**, the statistics emphasize that they are not too much used.

According to the digits in the figure 5, in The Netherlands, Italy and Malta, more that 70% of the pupils who participated in this survey never use plastic plates, and there are very few pupils using these items all the time.



Sumar pentru A5(SQ003)[plates]

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 409 | 68.17% | 50.00% |
| 2 (2) | 60 | 10.00% | |
| 3 (3) | 58 | 9.67% | 6.18% |
| 4 (4) | 27 | 4.50% | |
| 5 (5) | 32 | 5.33% | 6.29% |
| **Total(valid)** | **586** | | **100.00%** |
| Niciun răspuns | 14 | 2.33% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 1.66 | |
| Abatere standard | | 1.17 | |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

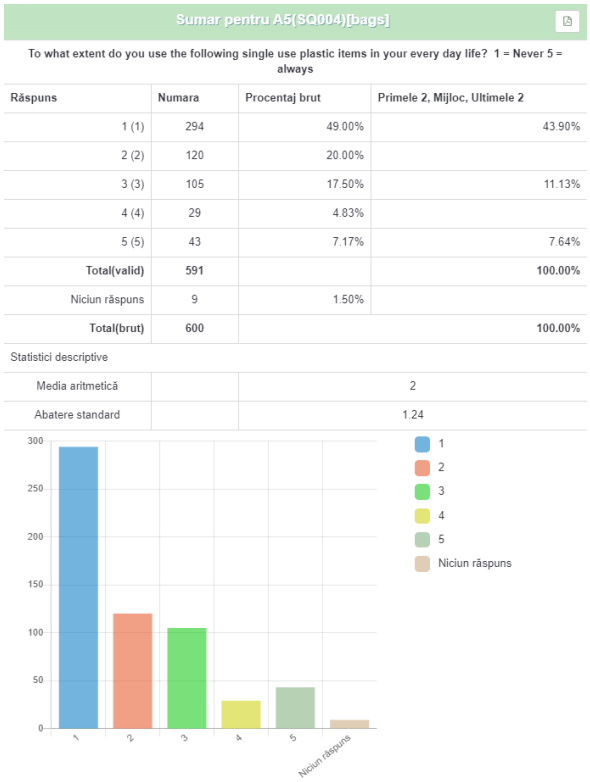
*Figure 6 Use of plastic plates*

Thus, from the table below, we can see that in Italy and Malta, plastic plates are less used than in the others.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 77,78% | 55,56% | 60,56% | 79,30% | 72,73% |
| rarely | 22,22% | 11,11% | 12,75% | 7,42% | 9,09% |
| sometimes | 0 | 5,56% | 15,14% | 6,25% | 0 |
| often | 0 | 16,67% | 5,98% | 3,12% | 0 |
| always | 0 | 11,11% | 5,58% | 3,91% | 18,18% |

*Table 9 Countries' statistics of the use of plastic plates*

Based on the graphic below, related to the use of **plastic bags**, it is noticeable that almost 50% of the participants do not use them. It is well known, from different media channels, that plastic bags are very dangerous both for nature itself and for the animals, as they eat these bags, then, they die.



Sumar pentru A5(SQ004)[bags]

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 294 | 49.00% | 43.90% |
| 2 (2) | 120 | 20.00% | |
| 3 (3) | 105 | 17.50% | 11.13% |
| 4 (4) | 29 | 4.83% | |
| 5 (5) | 43 | 7.17% | 7.64% |
| **Total(valid)** | **591** | | **100.00%** |
| Niciun răspuns | 9 | 1.50% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2 | |
| Abatere standard | | 1.24 | |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 7 Use of plastic bags*

The table below offers an overview of the use of these items. On one hand, we can see that in Malta plastic bags are not used by the pupils participating in this survey, and many of them, more than 50%, use plastic bags just rarely. On the other hand, according to the results, it seems that in Greece, almost 50% of the answers show that they use plastic bags always or often. In the Netherlands and Italy, people need to pay if they want a plastic bag for example for groceries, so it is more custom to use reusable bags.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 33,33% | 16,67% | 47,41% | 56,25% | 0 |
| rarely | 22,22% | 11,11% | 19,12% | 20,70% | 54,55% |
| sometimes | 22,22% | 22,22% | 21,12% | 15,23% | 9,09% |
| often | 11,11% | 16,67% | 3,59% | 3,91% | 18,18% |
| always | 11,11% | 33,33% | 8,76% | 3,91% | 18,18% |

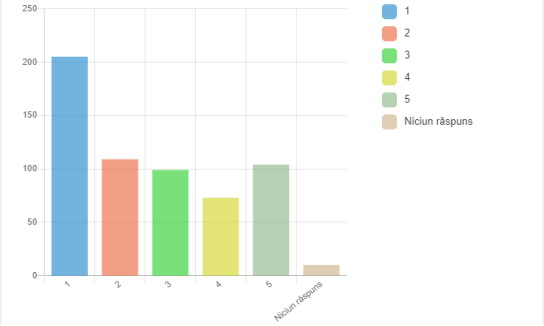
*Table 10 Countries' statistics of the use of plastic bags*

Another plastic item taken into consideration within this survey are **pens and pencils**. According to the graphic below, there are around 30% pupils who have never used them, even though it seems strange, because they are, after all, educational tools.

Sumar pentru A5(SQ005)[pencils or pens]

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 205 | 34.17% | 33.33% |
| 2 (2) | 109 | 18.17% | |
| 3 (3) | 99 | 16.50% | 10.51% |
| 4 (4) | 73 | 12.17% | |
| 5 (5) | 104 | 17.33% | 18.79% |
| **Total(valid)** | **590** | | **100.00%** |
| Niciun răspuns | 10 | 1.67% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2.6 | |
| Abatere standard | | 1.5 | |




Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

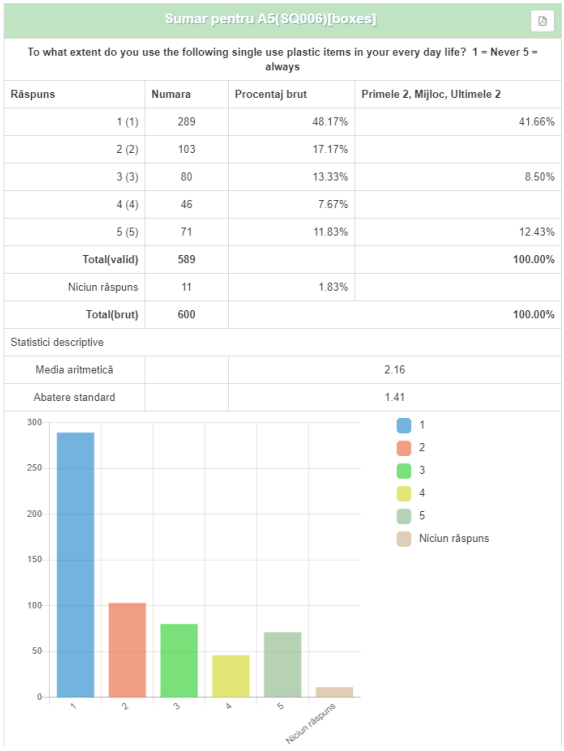
*Figure 8 Use of plastic pens and pencils*

The results show that in Greece and Malta they are used always or often. It is well known that their use is related to writing, drawing and other activities connected with education. The table below shows that in Greece, nobody uses them sometimes, but more that 50% use them often and always. In The Netherlands, the fact that, according to the survey, 33,3% never use them, it is possible that they use them but not plastic ones (and as the questionnaire is about plastic, they thought it is about plastic pencils and pens). It is possible that in other countries, they interpreted the question in the same way.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 33,33% | 16.67% | 33,47% | 35,94% | 9,09% |
| rarely | 11,11% | 27,78% | 17.53% | 18,36% | 18,18% |
| sometimes | 22,22% | 0 | 17,93% | 16,02% | 9,09% |
| often | 11,11% | 27,78% | 15,14% | 8,59% | 45,45% |
| always | 22,22% | 27,78% | 15,94% | 21,09% | 18,18% |

*Table 11 Countries' statistics of the use of plastic pens and pencils*

Nevertheless, the fact that pupils affirm that they do not use plastic boxes can be considered a great step to reducing SUP usage. If we consider the use of **plastic boxes**, according to the graphic, there are almost 50% of pupils who affirm that they have never used plastic boxes. One might consider the answers irrelevant, if we agree that plastic boxes are mostly used for preserving things, for carrying materials, for storage.



Sumar pentru A5(SQ006)[boxes]

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 289 | 48.17% | 41.66% |
| 2 (2) | 103 | 17.17% | |
| 3 (3) | 80 | 13.33% | 8.50% |
| 4 (4) | 46 | 7.67% | |
| 5 (5) | 71 | 11.83% | 12.43% |
| **Total(valid)** | **589** | | **100.00%** |
| Niciun răspuns | 11 | 1.83% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2.16 | |
| Abatere standard | | 1.41 | |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 9 Use of plastic boxes*

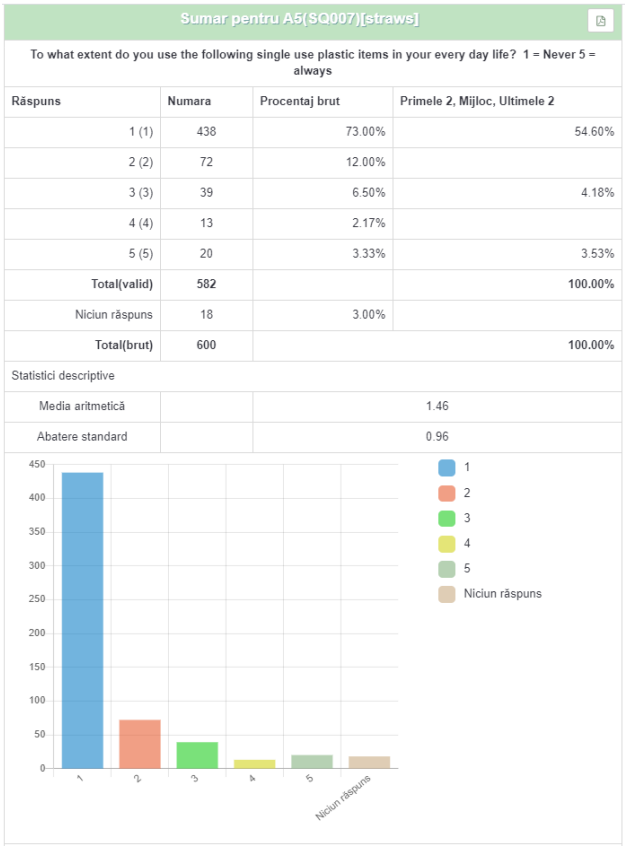
If we analyse table 9, the results show that in Malta plastic bags are not used at all or just rarely. Almost 50% of the pupils answering say that they never use these items. In the Netherlands lots of pupils use a reusable lunch box, but also plastic bags (not reusable) and foil are common.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 33,33% | 22,22% | 23,51% | 75,78% | 45,45% |
| rarely | 22,22% | 27,78% | 18.73% | 14,45% | 45,46% |
| sometimes | 0 | 33,33% | 21,51% | 6,25% | 9,09% |
| often | 0 | 5,56% | 15,94% | 0,78% | 0 |
| always | 44,44% | 11,11% | 20,32% | 2,73% | 0 |

*Table 9 Countries' statistics of the use of plastic boxes*

Another plastic item is **straws**. We can observe that, according to the graphic, around 75% of the participants say that they have never used straws.

Analysing each country's answer, Italy is on the top of not using plastic straws, followed by Romania.



Sumar pentru A5(SQ007)[straws]

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 438 | 73.00% | 54.60% |
| 2 (2) | 72 | 12.00% | |
| 3 (3) | 39 | 6.50% | 4.18% |
| 4 (4) | 13 | 2.17% | |
| 5 (5) | 20 | 3.33% | 3.53% |
| **Total(valid)** | **582** | | **100.00%** |
| Niciun răspuns | 18 | 3.00% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 1.46 | |
| Abatere standard | | 0.96 | |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 10 Plastic straws*

According to the table below, in Malta, pupils who use them often and always are 9,09%, followed by The Netherlands, with 11,11%.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 33,33% | 33,33% | 66,53% | 89,94% | 45,45% |
| rarely | 33,33% | 16,67% | 17,13% | 6,25% | 27,27% |
| sometimes | 22,22% | 11,11% | 10,36% | 2,34% | 18,18% |
| often | 11,11% | 11,11% | 1,99% | 0,78% | 0 |
| always | 0 | 27,78% | 3,98% | 0,78% | 9,09% |

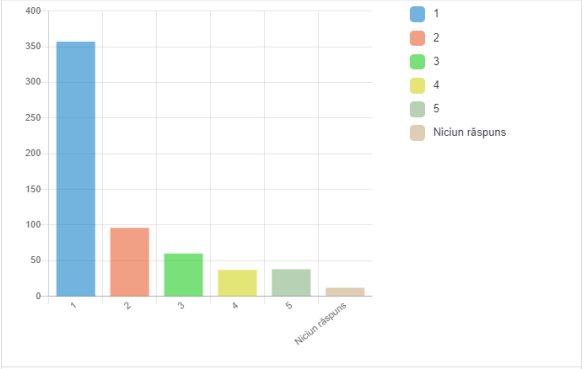
*Table 10 Countries' statistics of the use of plastic straws*

If we speak about **toys**, and their use, the graphic below is relevant. Almost 60% of the pupils mentioned that they don't use them in their everyday life.

**Sumar pentru A5(SQ008)[toys]**

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 357 | 59.50% | 48.19% |
| 2 (2) | 96 | 16.00% | |
| 3 (3) | 60 | 10.00% | 6.38% |
| 4 (4) | 37 | 6.17% | |
| 5 (5) | 38 | 6.33% | 7.98% |
| **Total(valid)** | **588** | | **100.00%** |
| Niciun răspuns | 12 | 2.00% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 1.81 | |
| Abatere standard | | 1.23 | |




Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 11 Plastic toys*

If we analyse the answers per country, it is interesting to see that in The Netherlands and Greece, pupils are still playing with plastic toys, but in Romania and in Italy, they affirm that there are very few always using toy. As regarding The Netherlands and Greece, there is a balance between those who use them and those who don't.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 22,22% | 27,78% | 54,98% | 68,75% | 36,36% |
| rarely | 22,22% | 11,11% | 22,71% | 9,38% | 27,27% |
| sometimes | 11,11% | 16,67% | 11,16% | 10,16% | 9,09% |
| often | 22,22% | 22,22% | 7,97% | 3,12% | 18,18% |
| always | 22,22% | 22,22% | 3,19% | 8,59% | 9,09% |

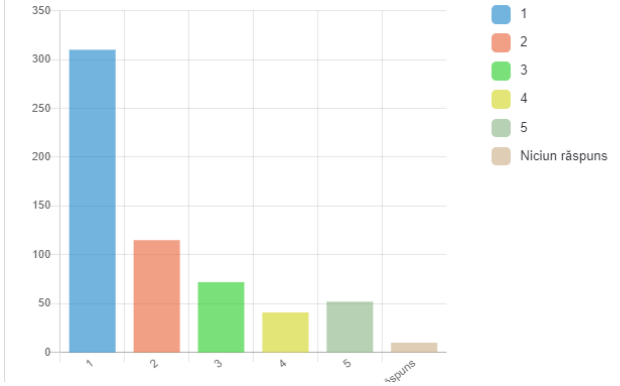
*Table 11 Countries' statistics of the use of plastic toys*

Another plastic item considered for this survey are **markers**.

**Sumar pentru A5(SQ009)[markers]**

To what extent do you use the following single use plastic items in your every day life? 1 = Never 5 = always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 310 | 51.67% | 45.12% |
| 2 (2) | 115 | 19.17% | |
| 3 (3) | 72 | 12.00% | 7.64% |
| 4 (4) | 41 | 6.83% | |
| 5 (5) | 52 | 8.67% | 9.87% |
| **Total(valid)** | **590** | | **100.00%** |
| Niciun răspuns | 10 | 1.67% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2 | |
| Abatere standard | | 1.31 | |




Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 12 Plastic markers*

The graphic above shows that almost half of the pupils answering the questions don't use them at all, the other half use them rarely, sometimes, often.

If we have a look at the table below, it shows that in Romania, less people than in the other countries use markers. Perhaps this is due to the fact that there are still schools where they use blackboard, and not whiteboards.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 22,22% | 16,67% | 52,19% | 55,86% | 27,27% |
| rarely | 22,22% | 16,67% | 20,72% | 17,19% | 27,27% |
| sometimes | 33,34% | 22,22% | 10,76% | 12,89% | 27,27% |
| often | 11,11% | 22,22% | 11,16% | 2,34% | 0 |
| always | 11,11% | 22,22% | 5,18% | 11,72% | 18,18% |

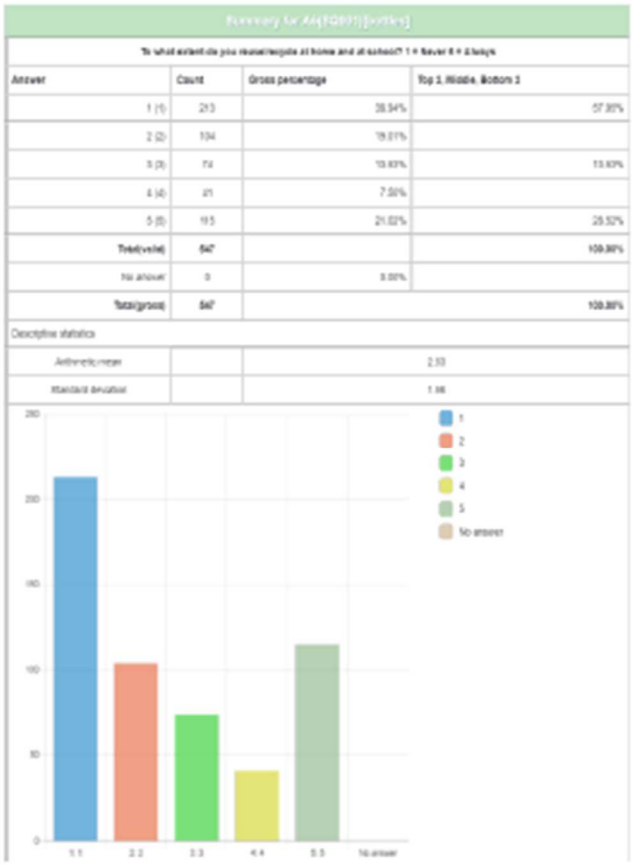
*Table 12 Countries' statistics of the use of plastic markers*

The results of this question emphasize that there are plastic items many pupils use, they mostly do not reuse them, but just throw them away.

## A.6 To what extent do you reuse/recycle the following single use plastic items in your everyday life? (1 = never, 5 = always) (bottles, drinking cups, plates, bags, pencils or pens, boxes, straws, toys, markers)?

While the previous question focused on SUP usage, this question aims to explore the reusing / recycling behaviours of students for the very same SUP items. In the following figures we present the results for each surveyed item.

**Plastic bottles:** According to the figure below, an alarming 57.95% never or rarely recycle or reuse the plastic bottles they consume. As this finding contradicts the positive results of bottle usage in question A.4, we assume that a part of the respondents that chose they 'never use plastic bottles' in A4 chose here also 'never reuse/recycle' considering they never purchased the water bottles in the first place. Otherwise, if indeed more than half of the students never or rarely recycle, it is certainly problematic, and is something that the PLASTEAM project should focus on.




Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

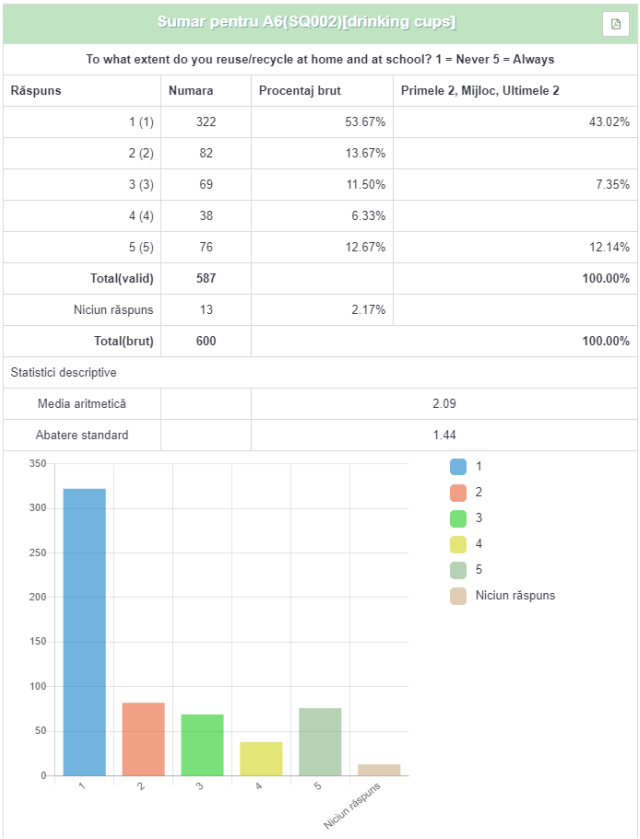
*Figure 13 Reusing / recycling the plastic bottles*

The country statistics show that pupils use to reuse or recycle plastic bottles. The use of reusable bottles is popular for older youth as well, and in some schools students take water with them to drink (it is not allowed to take sweet drinks or even milk with them). And then a reusable bottle is cheaper in the end.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 11,11% | 33,33% | 36,25% | 44,92% | 0 |
| rarely | 0 | 11,11% | 18,33% | 21,09% | 18,18% |
| sometimes | 33,33% | 11,11% | 11,95% | 14,84% | 9,09% |
| often | 0 | 22,22% | 9,16% | 4,69% | 18,18% |
| always | 55,56% | 22,22% | 24,30% | 14,45% | 54,55% |

*Table 13 Countries' statistics for reusing/recycling plastic bottles*

If we consider **the drinking cups reuse/recycling**, the statistics look as follows:



Sumar pentru A6(SQ002)[drinking cups]

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 322 | 53.67% | 43.02% |
| 2 (2) | 82 | 13.67% | |
| 3 (3) | 69 | 11.50% | 7.35% |
| 4 (4) | 38 | 6.33% | |
| 5 (5) | 76 | 12.67% | 12.14% |
| **Total(valid)** | **587** | | **100.00%** |
| Niciun răspuns | 13 | 2.17% | |
| **Total(brut)** | **600** | | **100.00%** |

Statistici descriptive

| | | |
|---|---|---|
| Media aritmetică | | 2.09 |
| Abatere standard | | 1.44 |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

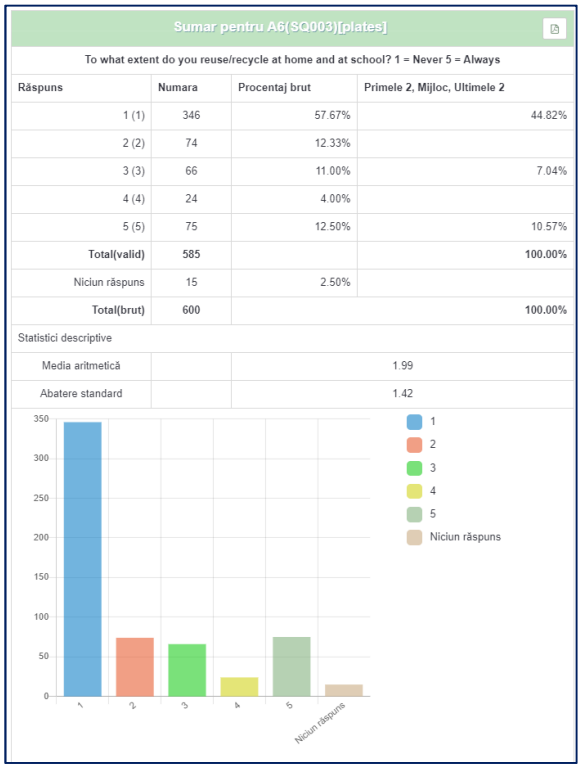
*Figure 14 Plastic drinking cups' reuse/recycling*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 9,09% | 33,33% | 44,22% | 70,31% | 9,09% |
| rarely | 0 | 5,56% | 18,73% | 10,94% | 18,18% |
| sometimes | 54,55% | 22,22% | 13,55% | 7,03% | 9,09% |
| often | 9,09% | 16,67% | 7,97% | 4,30% | 9,09% |
| always | 18,18% | 22,22% | 15,54% | 7,42% | 54,55% |

*Table 14 Countries' statistics of the reuse/recycling drinking cups*

If we compare again the statistics of the use of this item and the recycling of it, we can see that again, pupils recycle more than use, which is a step forward to reduce plastic consumption.

For **plastic plates**, the graphic shows that almost 60% from all the pupils who answered never recycle them, and 12% always recycle. From the graphic and the table below, we see some statistics, but they might not be relevant, due to the big difference between the number of pupils from the participant countries. What is surprising is that both in Italy and in Romania the majority of pupils declare not to recycle plastic plates: indeed, in Italy 3 out of 4 pupils don't recycle this object, while in Romania almost half of the sample do not do it.



Sumar pentru A6(SQ003)[plates]

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 346 | 57.67% | 44.82% |
| 2 (2) | 74 | 12.33% | |
| 3 (3) | 66 | 11.00% | 7.04% |
| 4 (4) | 24 | 4.00% | |
| 5 (5) | 75 | 12.50% | 10.57% |
| **Total(valid)** | **585** | | **100.00%** |
| Niciun răspuns | 15 | 2.50% | |
| **Total(brut)** | **600** | | **100.00%** |

Statistici descriptive

| | | |
|---|---|---|
| Media aritmetică | | 1.99 |
| Abatere standard | | 1.42 |



Legend:

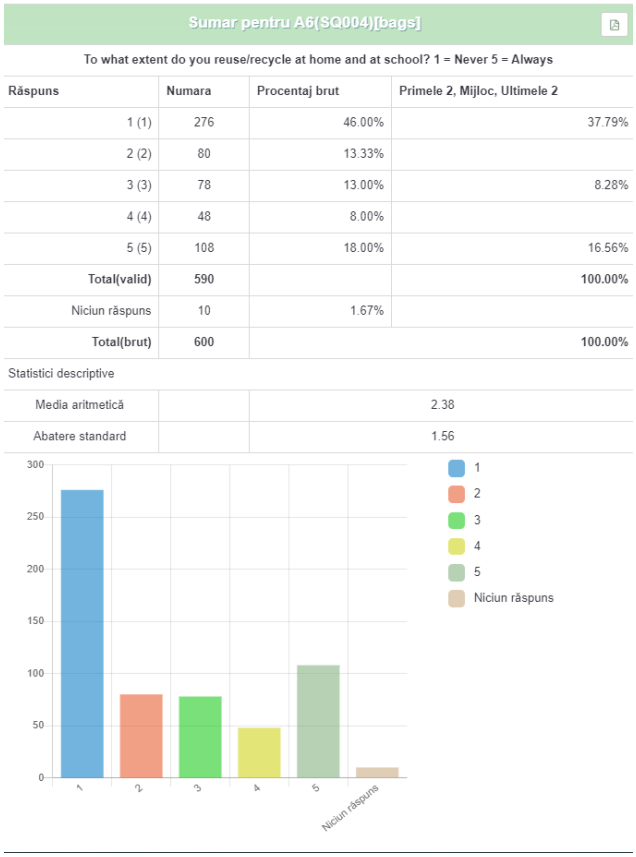
1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 15 Plastic plates' reuse/recycling*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 11,11% | 38,89% | 46,22% | 77,34% | 0 |
| rarely | 0 | 11,11% | 16,33% | 8,98% | 18,18% |
| sometimes | 6,67% | 11,11% | 16,73% | 5,47% | 18,18% |
| often | 11,11% | 16,67% | 4,78% | 1,56% | 18,18% |
| always | 11,11% | 22,22% | 15,94% | 6,64% | 45,46% |

*Table 15 Countries' statistics of the reuse/recycling plastic plates*

The statistics for recycling **plastic bags** show that 46% never recycle them and almost 20% always do this.



Sumar pentru A6(SQ004)[bags]

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 276 | 46.00% | 37.79% |
| 2 (2) | 80 | 13.33% | |
| 3 (3) | 78 | 13.00% | 8.28% |
| 4 (4) | 48 | 8.00% | |
| 5 (5) | 108 | 18.00% | 16.56% |
| **Total(valid)** | **590** | | **100.00%** |
| Niciun răspuns | 10 | 1.67% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2.38 | |
| Abatere standard | | 1.56 | |



Legend:

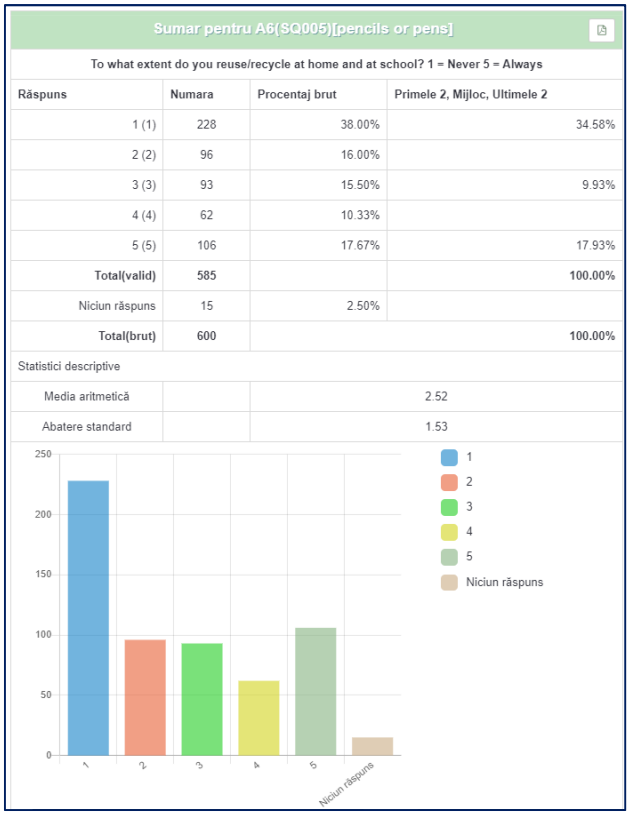
1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 16 Plastic bags' reuse/recycling*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 33,33% | 16,67% | 49,40% | 48,44% | 0 |
| rarely | 22,22% | 11,11% | 14,34% | 13,67% | 36,36% |
| sometimes | 22,22% | 16,67% | 9,56% | 12,89% | 18,1i8% |
| often | 11,11% | 22,22% | 7,97% | 7,81% | 45,46% |
| always | 11,11% | 33,33% | 18,73 | 17,19% | 0 |

*Table 16 Countries' statistics of the reuse/recycling plastic bags*

Regarding **pencils or pens**, the statistics shows that almost 40% say that they never recycle them, while almost 16% do it, but possibly the question is misinterpreted, and the pupils thought only about plastic pen/pencils, not in general.



Sumar pentru A6(SQ005)[pencils or pens]

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 228 | 38.00% | 34.58% |
| 2 (2) | 96 | 16.00% | |
| 3 (3) | 93 | 15.50% | 9.93% |
| 4 (4) | 62 | 10.33% | |
| 5 (5) | 106 | 17.67% | 17.93% |
| **Total(valid)** | **585** | | **100.00%** |
| Niciun răspuns | 15 | 2.50% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2.52 | |
| Abatere standard | | 1.53 | |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

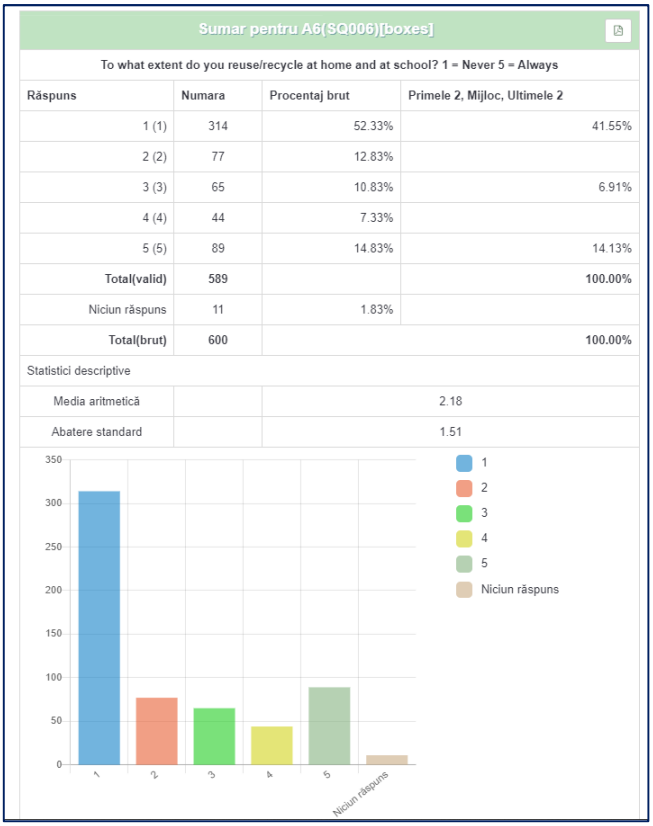
*Figure 17 Plastic pen&pencils' recycle*

We may notice that, generally speaking, almost 20-30% of the pupils answering to this question reuse/recycle pens and pencils, often and always.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 11,11% | 38,89% | 33,07% | 45,70% | 27,27% |
| rarely | 0 | 11,11% | 18,73% | 14,45% | 9,09% |
| sometimes | 66,67% | 16,67% | 17,53% | 12,50% | 27,27% |
| often | 11,11% | 11,11% | 15,94% | 5,86% | 9,09% |
| always | 11,11% | 22,22% | 14,74% | 21,48% | 27,27% |

*Table 17 Countries' statistics of the reuse/recycling pencils or pens*

The statistics related to plastic **boxes** are also relevant for this survey. According to the graphic an table below, it seems that more than half of the pupils answering say that they never recycle plastic boxes, and almost 16% do it.



Sumar pentru A6(SQ006)[boxes]

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 314 | 52.33% | 41.55% |
| 2 (2) | 77 | 12.83% | |
| 3 (3) | 65 | 10.83% | 6.91% |
| 4 (4) | 44 | 7.33% | |
| 5 (5) | 89 | 14.83% | 14.13% |
| **Total(valid)** | **589** | | **100.00%** |
| Niciun răspuns | 11 | 1.83% | |
| **Total(brut)** | **600** | | **100.00%** |

| Statistici descriptive | | |
|---|---|---|
| Media aritmetică | | 2.18 |
| Abatere standard | | 1.51 |



Legend:

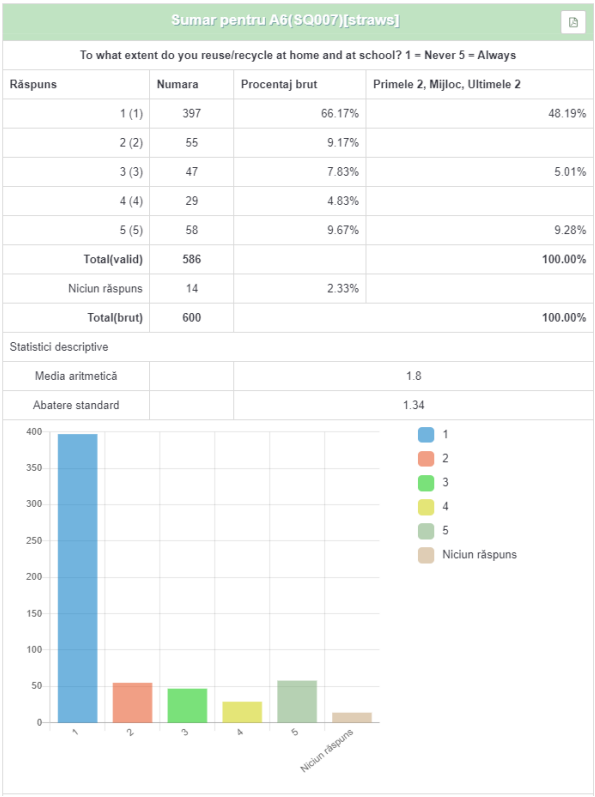
1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 18 Plastic boxes' reuse/recycling*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 11,11% | 50% | 50,20% | 57,81% | 18 |
| rarely | 22,22% | 16,67% | 14,74% | 12,11% | 0 |
| sometimes | 22,22% | 11,11% | 10,76% | 8,98% | 9,09% |
| often | 11,11% | 5,56% | 8,76% | 6,64% | 27,27% |
| always | 33,33% | 16,67% | 15,54% | 14,45% | 45,45% |

*Table 18 Countries' statistics of the reuse/recycling plastic boxes*

A similar image is offered by the answers regarding the **straws'** recycling process. The digits show that 68% from all those who answered never recycle straws, and only 10% do it. But if we look at the situation per country, it results that again, in Malta pupils do this more than in other countries.



Sumar pentru A6(SQ007)[straws]

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 397 | 66.17% | 48.19% |
| 2 (2) | 55 | 9.17% | |
| 3 (3) | 47 | 7.83% | 5.01% |
| 4 (4) | 29 | 4.83% | |
| 5 (5) | 58 | 9.67% | 9.28% |
| **Total(valid)** | **586** | | **100.00%** |
| Niciun răspuns | 14 | 2.33% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 1.8 | |
| Abatere standard | | 1.34 | |



Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 19 Plastic straws' reuse/recycling*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 11,11% | 27,78% | 59,36% | 82,03% | 0 |
| rarely | 11,11% | 11,11% | 11,16% | 6,25% | 27,27% |
| sometimes | 33,33% | 16,67% | 10,76% | 2,73% | 9,09% |
| often | 11,11% | 16,67% | 6,37% | 2,73% | 27,27% |
| always | 33,33% | 27,78% | 12,35% | 6,25% | 45,45% |

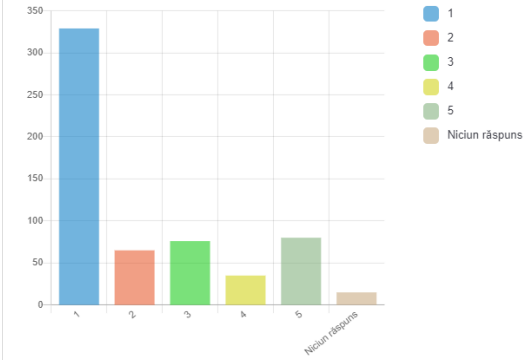
*Table 19 Countries' statistics of the reuse/recycling of plastic straws*

Speaking about **toys'** recycling, more than 50% affirm that they never recycle toys.

Sumar pentru A6(SQ008)[toys]

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 329 | 54.83% | 42.05% |
| 2 (2) | 65 | 10.83% | |
| 3 (3) | 76 | 12.67% | 8.11% |
| 4 (4) | 35 | 5.83% | |
| 5 (5) | 80 | 13.33% | 12.27% |
| **Total(valid)** | **585** | | **100.00%** |
| Niciun răspuns | 15 | 2.50% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2.1 | |
| Abatere standard | | 1.47 | |




Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 20 Plastic toys' recycle*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 44,44% | 38,89% | 49,40% | 65,23% | 27,27% |
| rarely | 11,11% | 11,11% | 13,94% | 7,03% | 18,18% |
| sometimes | 44,44% | 11,11% | 18,33% | 8,98% | 0 |
| often | 0 | 16,67% | 6,77% | 5,47% | 9,09% |
| always | 0 | 22,22% | 11,55% | 13,28% | 45,45% |

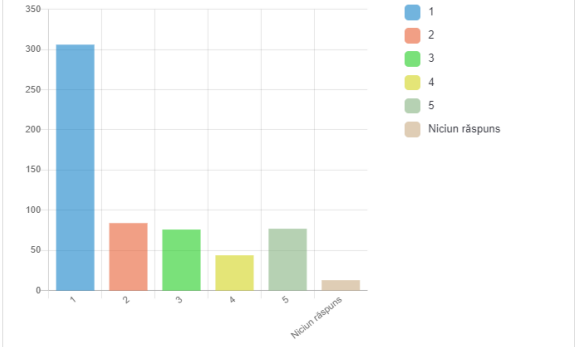
*Table 20 Countries' statistics of the reuse of plastic toys*

Related to **markers'** recycling, we can observe that the situation is almost similar to the other analysed items. More than 50% of the pupils answering never recycle markers, while 13% affirm that they do it.

**Sumar pentru A6(SQ009)[markers]**

To what extent do you reuse/recycle at home and at school? 1 = Never 5 = Always

| Răspuns | Numara | Procentaj brut | Primele 2, Mijloc, Ultimele 2 |
|---|---|---|---|
| 1 (1) | 306 | 51.00% | 41.53% |
| 2 (2) | 84 | 14.00% | |
| 3 (3) | 76 | 12.67% | 8.09% |
| 4 (4) | 44 | 7.33% | |
| 5 (5) | 77 | 12.83% | 12.89% |
| **Total(valid)** | **587** | | **100.00%** |
| Niciun răspuns | 13 | 2.17% | |
| **Total(brut)** | **600** | | **100.00%** |
| Statistici descriptive | | | |
| Media aritmetică | | 2.15 | |
| Abatere standard | | 1.45 | |




Legend:

1 - never
2 - rarely
3 - sometimes
4 - often
5 - always

*Figure 21 Plastic markers' reuse/recycling*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 22,22% | 38,89% | 47,81% | 57,81% | 18,18% |
| rarely | 11,11% | 16,67% | 16,73% | 11,72% | 18,18% |
| sometimes | 11,11% | 16,67% | 13,94% | 12,50% | 0 |
| often | 0 | 16,67% | 11,55% | 3,12% | 27,27% |
| always | 55,56% | 11,11% | 9,96% | 14,84% | 36,36% |

*Table 21 Countries' statistics of the reuse/recycling of markers*

# Section B - Teaching/learning activities

This section emphasizes on the single plastics usage within the schools, as well as on the subjects and the teaching and learning activities that deal with the SUPs issue.

## B.1 Do you have a special bin at school, where you dispose of your plastic?

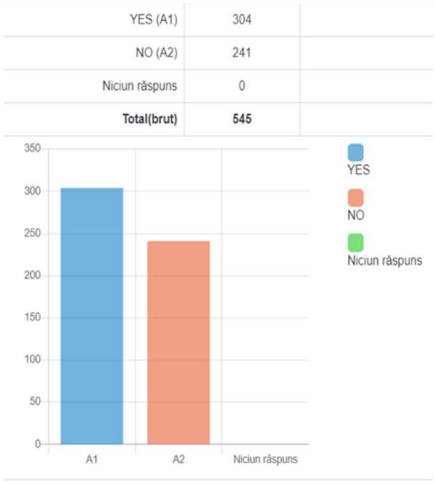



*Figure 22 Special bins for plastic disposal in schools*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| yes | 22,22% | 38,89% | 78,09% | 35,16% | 81,82% |
| no | 77,78% | 61,11% | 21,91% | 64,84% | 18,18% |

*Table 22 Countries' statistics of bins for plastic in schools*

According to the graphic, we can see that almost 6 out of 10 of the surveyed students do have a special bin in their schools where plastic is disposed of. However, if we have a look at the country distribution table, we see a contrasting image between Romania and Italy. In Romania equipped schools are close to 80% while Italy is quite low with approximately 35%.

For the rest of the countries, we cannot make generalisations due to the small sample size. As we can see, there is a difference between the number of the schools whose pupils were surveyed (8 from NL, 11 from RO, 11 from GR, 4 from IT, 7 from MT), therefore, it is quite difficult to consider the result valid.

We should keep in mind that the reply to this question depends also on how the waste collection is organised in each municipality. For example, in Amsterdam (Netherlands), the plastic waste is separated by machines, so people do not put their plastic waste in a special bin anymore. Likewise, in Greece, the so-called 'blue bin' accepts paper, metal and plastic packaging all together, to be then mechanically sorted at the recycling factory, so there is no need for plastic to be sorted by civilians.

From the above we gather that the situation regarding the special bin for plastics is country-specific, and even city-specific and we need to know the waste collection system that is in place in each case, before we can draw conclusions or make any recommendations.

## B.2 Are there any banned plastics in your school?

For this question, we explore the so-called "plastic culture" that might exist in the surveyed schools.

Summary for B2

Are there any banned plastics in your school?

| Answer | Count | Gross percentage |
|---|---|---|
| YES (A1) | 68 | 12.43% |
| NO (A2) | 479 | 87.57% |
| No answer | 0 | 0.00% |
| Total(gross) | 547 | 100.00% |



*Figure 23 Plastic bans existing in the schools*

The above figure does not come as a surprise. Bans for one or more plastic types exist in only in 1 out of 10 surveyed schools. This percentage is expected to grow in the coming years after the EU Directive that banned 10 SUPs entered into force in 2019. In Europe and all around the world the bans taking place at the state level or at the institution-level e.g. from universities, public offices, etc. but also in the business sector (restaurants, coffee shops, grocery stores, etc.) are a popular trend. We consider that the timing of the PLASTEAM fits very well with this trend, as during the project lifetime we can work with the schools in our countries to further cultivate the culture of the SUP-free-schools.

The following country analysis does not show any important country variation in this question.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| yes | 22,22% | 16,67% | 16,33% | 8,59% | 0 |
| no | 77,78% | 83,33% | 83,67% | 91,41% | 100% |

*Table 23 Countries' statistics about banned plastics in schools*

## B.3 Do you use any of the following plastic items during your classes/learning activities, inside and/or outside your school?

The graphic below shows that the most commonly used plastic items in the learning activities of the surveyed students are pens and pencils (75.32%), followed by bottles (62.71%), markers (57.41%) and bags (22.30%). Objects that are mentioned by students in the 'other' option include back-bags, pencil cases, notebook covers, library labels, rulers, compasses and other instruments.

Summary for B3

Do you use any plastic items during your classes/learning activities, inside and/or outside your school?

| Answer | Count | Gross percentage |
|---|---|---|
| bottles (SQ002) | 343 | 62.71% |
| drinking cups (SQ003) | 83 | 15.17% |
| plates (SQ004) | 52 | 9.51% |
| bags (SQ005) | 122 | 22.30% |
| pencils or pens (SQ006) | 412 | 75.32% |
| boxes (SQ007) | 79 | 14.44% |
| straws (SQ008) | 53 | 9.69% |
| toys (SQ009) | 41 | 7.50% |
| markers (SQ010) | 314 | 57.40% |
| Other Browse | 28 | 5.12% |
| Total(gross) | 1627 | 100.00% |



*Figure 24 Use of plastic items during learning activities*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| bottles | 66,67% | 61,11% | 64,94% | 61,72% | 36,36% |
| drinking cups | 11,11% | 5,56& | 19,12% | 12,11% | 18,18% |
| plates | 11,11% | 0 | 13,94% | 5,47% | 18,18% |
| bags | 22,22% | 11,11% | 24,30% | 20,70% | 18,18% |
| pencils/pens | 55.56% | 66,67% | 68,13% | 83,59% | 72.73% |
| boxes | 22,22% | 11,11% | 21,12% | 8,20% | 0 |
| straws | 33.33% | 11,11% | 9,56% | 8,59% | 18,18% |
| toys | 0 | 0 | 10,36% | 5,08% | 9,09% |
| markers | 44.44% | 77,78% | 57,77% | 56,25% | 45,45% |
| others | 11,11% | 5,56% | 3,59% | 6,25% | 9,09% |

*Table 24 Countries' statistics about the use of plastic items during learning activities*

One thing that this question clearly demonstrates is how plasticised our lives and our classrooms have become, and how difficult it can be to de-plastify them. In the average today's classroom, the board, desks, floor, door etc. are made of plastic. Of course these are durable plastics made to last for many years, but we cannot claim the same for objects like markers, pens, pencil cases, and back-packs, that both students and teachers commonly use. Even if one school adopts a bold SUP-free policy, it may prove difficult to find supplements that are not made of plastic, or refillable markers, pens etc.

The fact that plastic bottles are the most commonly reported item in this question somehow contradicts the finding of question A.5 in which students declared minimum usage of bottles. One possible explanation for this might be that the surveyed students refer to the usage of bottles in making hand crafts.

## B.4 In which school subjects do you learn about plastic?

According to the tables below, 1 out of 2 of the surveyed students affirm that they learn about plastics in the subjects of Science/Geography, and 1 out of 5 do so in Art.

**Summary for B4**

**In which school subjects do you learn about plastic?**

| Answer | Count | Gross percentage |
|---|---|---|
| Science or Geography (SQ002) | 288 | 52.65% |
| Literature (SQ003) | 19 | 3.47% |
| Art (SQ004) | 109 | 19.93% |
| Mathematics (SQ005) | 9 | 1.65% |
| Other Browse | 298 | 54.48% |
| **Total(gross)** | **723** | **100.00%** |

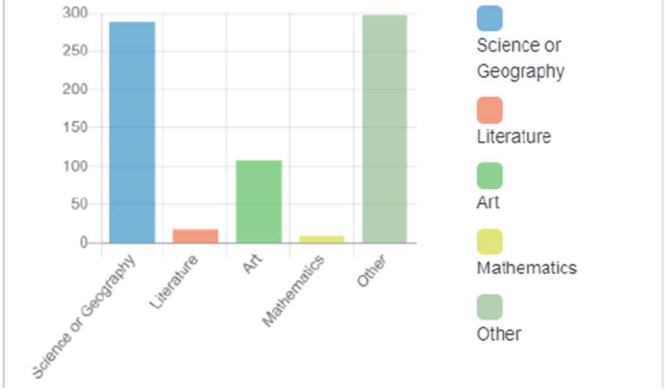



*Figure 25 Use of plastic items in school subjects*

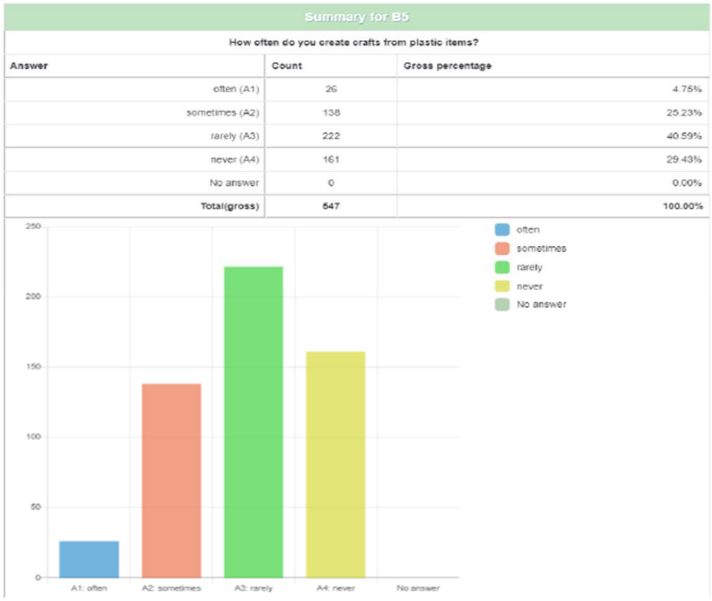
| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| Science/Geography | 33,33% | 55,56% | 54,18% | 5,78% | 72,73% |
| Literature | 0 | 22,22% | 1,59% | 3,91% | 0 |
| Art | 33,33% | 16,67% | 36,25% | 4,69% | 0 |
| Maths | 0 | 0 | 2,39% | 1,17% | 0 |
| Other | 33,33% | 27,78% | 37,45% | 75% | 18,18% |

*Table 25 Countries' statistics about the knowledge about plastic items in school subjects*

In Italy, 75% of the students stated they learn about plastics in 'other' subjects than those listed. In this 'other' option Technology was the dominant subject mentioned (36.19%) followed by the subjects of civic education and counselling in much lower percentages. As in the next stages of the PLASTEAM project we are about to develop an educational material, based on the STEAM principles we should keep these curriculum subjects in mind, in order to develop the relevant content.

## B.5 How often do you create crafts from plastic?

In a close relationship with question B4, there are the answers for this question.



Summary for B5

How often do you create crafts from plastic items?

| Answer | Count | Gross percentage |
|---|---|---|
| often (A1) | 26 | 4.76% |
| sometimes (A2) | 138 | 25.23% |
| rarely (A3) | 222 | 40.59% |
| never (A4) | 161 | 29.43% |
| No answer | 0 | 0.00% |
| Total(gross) | 547 | 100.00% |



*Figure 26 Creating crafts from plastic*

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| often | 0 | 0 | 5,18% | 5,08% | 0 |
| sometimes | 22,22% | 38,89% | 29,88% | 19,53% | 27,27% |
| rarely | 33,33% | 27,78% | 44,62% | 38,67% | 27,27% |
| never | 44,45% | 33,33% | 20,32% | 36,72% | 45,46% |

*Table 26 Countries' statistics about creating crafts from plastic*

According to the above results, 7 out of 10 students never or rarely use plastics in crafts making, a percentage that is more or less common in all surveyed countries. The other 3 out of 10 students that do use plastic in crafts making probably do so in the Arts subject, as we have seen in question B.4. So that, it is important to emphasize the value of art in effectively transmitting environmental and other educative messages for preserving nature and reducing plastic use.

## B.6 Are there schools, other than yours, in which plastic is recycled?

This question aimed to explore whether students have noticed the recycling system in their area in places other than their own school, and specifically in other schools.

Summary for B6

Are there schools, other than yours in which plastic is recycled?

| Answer | Count | Gross percentage |
|---|---|---|
| YES (A1) | 355 | 64.90% |
| NO (A2) | 133 | 24.31% |
| Other Browse | 59 | 10.79% |
| No answer | 0 | 0.00% |
| Total(gross) | 547 | 100.00% |



*Figure 27 Other schools that recycle*

According to the above figure, around 65% of the surveyed students do know other schools in their area in which plastic is recycled. 1 in 4 responded negatively, while 1 in 10 states they do not know. Overall the answers in this question are in consistency with those of question B.1.

The table below offers an overview for each participating country.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| yes | 22,22% | 33,33% | 79,68% | 53,91% | 72,73% |
| no | 77,78% | 61,11% | 5,18% | 39,45% | 0 |
| don’t know | 0 | 5,56% | 15,14% | 6,64% | 27,27% |

*Table 27 Countries’ statistics about other schools that recycle*

# Section C – Lunch time

This section offers an overview related to the use of SUP items for pupils' food and drink, in the school canteen, etc.

## C.1 You usually bring your snack or lunch: a) from home, b) from school, c) I don't eat at school

The answers to this question are shown in the figure below.

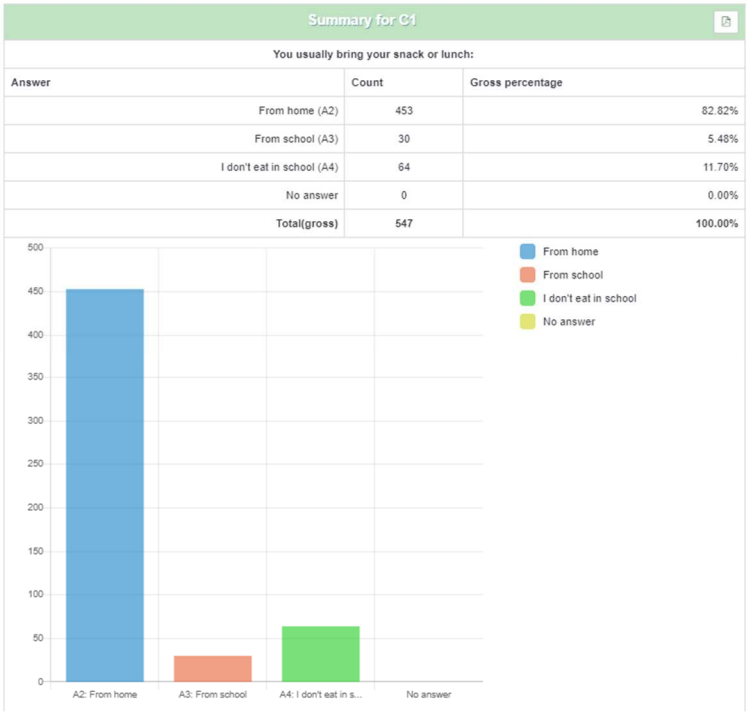



*Figure 28 Bringing lunch/snack from…*

The answers show that more than 80% of the surveyed pupils bring their lunch from home while only about 5,5% get it at school (probably served or purchased in the school canteen). We were surprised to find out that 1 out of 10 pupils state that they don't eat at school, and although malnutrition is beyond the scope of this project, we can't help but notice that this important part of the student population might stay hungry for many hours while in school.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| home | 77,78% | 83,33% | 92,43% | 73,05% | 99,91% |
| school | 11,11% | 0 | 2,79% | 8,20% | 9,09% |
| don't eat in school | 11,11% | 16,67% | 4,78% | 18,75% | 0 |

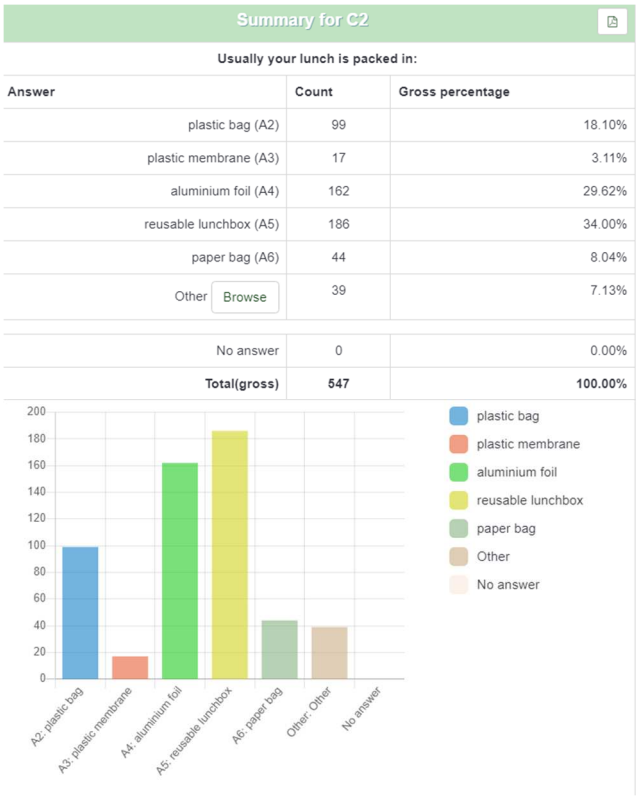
*Table 28 Countries' statistics about having lunch/snack in school*

According to the above table that shows the country variation, the high percentages of brought-from-home lunches are valid for all countries with Romania (and possibly Malta) being on top.

In any case, the fact that the vast majority of the surveyed students bring lunch from home, directs us to develop ideas and proposals through PLASTEAM in order to 'green' the packaging of this food. As we will see in the following question, a big part of this packaging is items that are only used once.

## C.2 Usually your snack or lunch is packed in: a) plastic bag b) plastic membrane c) aluminium foil, d) reusable lunch box, e) paper bag.

The answers to this question are shown in the figure below.



Summary for C2

Usually your lunch is packed in:

| Answer | Count | Gross percentage |
|---|---|---|
| plastic bag (A2) | 99 | 18.10% |
| plastic membrane (A3) | 17 | 3.11% |
| aluminium foil (A4) | 162 | 29.62% |
| reusable lunchbox (A5) | 186 | 34.00% |
| paper bag (A6) | 44 | 8.04% |
| Other Browse | 39 | 7.13% |
| No answer | 0 | 0.00% |
| **Total(gross)** | **547** | **100.00%** |



*Figure 29 Lunch-snack is packed in…*

The only green / sustainable choice that was given to students in this closed-type question was the reusable lunch box that reached just 34%. All the other options, that sum up to a total of 66%, were actually single use items. Through the PLASTEAM project hopefully we will have opportunities to address this important issue that touches not only upon students' habits, but also the overall family culture regarding SUPs.

Interestingly, and in accordance with question C.1, many of the respondents that choose 'other' explain that they do not eat at school, thereby they do not consume any packaging. Some other explanations given in the 'other option' are kitchen roll paper, bakery paper, and paper plates, which by the way, are all single use items.

If we have a look at the country variation table, we can see that students from Romania and Italy, the two statistically analysed countries, are even lower than the mean 34% in the lunchbox usage. The statistics from the other countries that show a better performance are more positive, but cannot be generalised.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| plastic | 44,44% | 1,11% | 21,51% | 15,23% | 0 |
| Plastic membrane | 0 | 0 | 1,99% | 4,69% | 0 |
| Aluminium foil | 0 | 38,89% | 32,67% | 28,52% | 0 |
| reusable lunch box | 55,56% | 44,44% | 33,47% | 30,47% | 81,82% |
| paper bag | 0 | 0 | 7,17% | 9,77% | 9,09% |
| other | 0 | 5,56% | 3,19% | 0 | 9,09% |

*Table 29 Countries' statistics about how lunch is packed*

## C.3 Is there a canteen in your school?

The answers for this question show that more than 55% of the surveyed schools have a canteen, with 45% lacking a canteen.

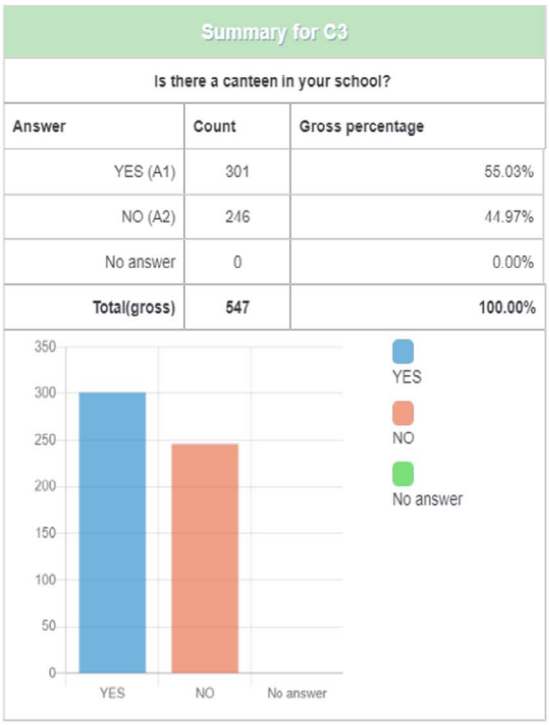



*Figure 30 Schools having a canteen*

This result is consistent with that of question C.1, in which most of the surveyed students declared they bring lunch from home. The statistics for each participating country are the following:

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| yes | 44,44% | 94,44% | 25,10% | 82,03% | 54,55% |
| no | 55,56% | 5,56% | 74,90% | 17,97% | 45,45% |

*Table 30 Countries' statistics about schools having a canteen*

Romania and Italy have a contrasting image: more than 80 % of the Italian primary schools have a canteen, while in Romania only 25% do so, because here, the Government allocated a budget for a

snack, that don't need a canteen. The image in the rest of the countries varies but due to the small sample size we cannot make any generalisation.

### C.4 Are lunches and meals in general kept in and/or distributed in single use plastics?

This question relates to the previous ones of section C and we get the following answers:

**Summary for C4**

**Are lunches and meals in general kept in and/or distributed in single use plastics?**

| Answer | Count | Gross percentage |
|---|---|---|
| YES (A1) | 123 | 22.49% |
| NO (A2) | 87 | 15.90% |
| DON'T KNOW (A3) | 337 | 61.61% |
| No answer | 0 | 0.00% |
| **Total(gross)** | **547** | **100.00%** |

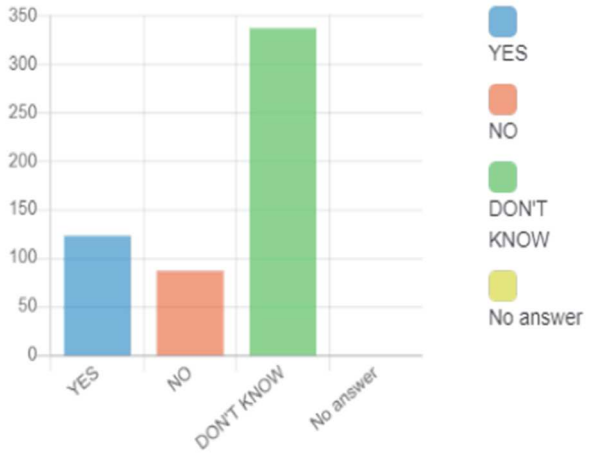



*Figure 31 SUP usage in the served or distributed meals & lunches*

This question gave a rather interesting result. More than 6 out of 10 students claim they don't know. Could this mean they have never wondered what type of container/packaging their food comes in? Or maybe that they are unfamiliar with the meaning of the term 'single use item'? This term has been mentioned in the previous question A.5 through the given examples (bottles, cups, etc.) that were analysed, but question C.4 includes the concept without an explanation or example. Another possible explanation for this result could be the fact that students don't eat in a canteen, or they don't have a canteen in school, as we have seen in the previous questions of section C.

Regarding the rest of the surveyed students that chose Yes or No, most of them (aprox. 23%) do admit there is an extended use of SUPs in their consumed food and only 16% respond negatively.

Considering the answers per country, we can see the prevalence of "don't knows" in the statistically important country Romania, and even more so in Italy. The small sample data does not allow us any generalisation for the rest of the countries.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| Yes | 44,45% | 27,78% | 35,86% | 8,59% | 18,18% |
| No | 33,33% | 27,78% | 11,55% | 17,58% | 27,27% |
| Don't know | 22,22% | 44,44% | 52,59% | 73,83% | 54,55% |

*Table 31 Countries' statistics about how the lunch in canteens is kept*

## C.5 Do you use single-use plastics (i.e., plates, cutlery, cups, straws, etc.) during snack or lunch time?

The majority of the students declare that they don't use SUPs during their snack/lunch time.

**Summary for C5**

**Do you use single use plastics (i.e., plates, cutlery, cups, straws, etc.) during snack or lunch time?**

| Answer | Count | Gross percentage |
|---|---|---|
| YES (A2) | 83 | 15.17% |
| NO (A3) | 349 | 63.80% |
| NOT APPLICABLE, I don't eat in school (A4) | 115 | 21.02% |
| No answer | 0 | 0.00% |
| **Total(gross)** | **547** | **100.00%** |

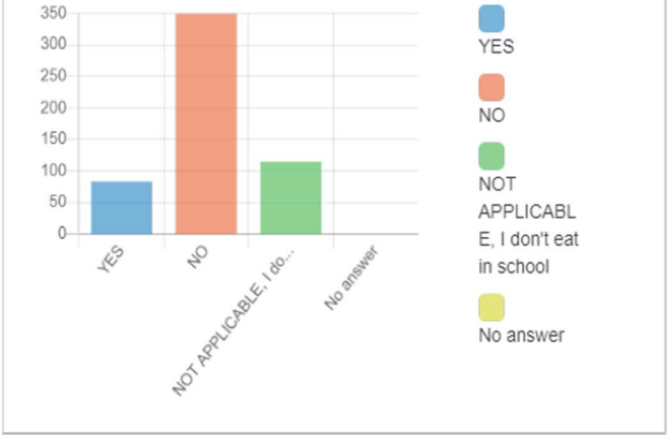



*Figure 32 Using SUP during snack/lunch time*

If we consider that most of the surveyed students bring lunch from home (Question C.1), that many schools lack a canteen (Question C.3), and that a part of the students claim they don't eat at school, it is not surprising that only 15% claim that they use SUPs while getting their meal. This could also mean that pupils have mainly sandwiches, or snacks that don't require plates, cutlery and cups.

The below table reveals a consistency of replies amongst the students from all project countries.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| never | 33,33% | 11,11% | 15,94% | 14,45% | 9,09% |
| rarely | 66,67% | 77,78% | 74,90% | 50,39% | 90,91% |
| Don't eat in school | 0 | 11,11% | 9,16% | 35,16% | |

*Table 32 Countries' statistics about using SUP during lunch time*

## C.6 Do you carry around a refillable water bottle?

The refillable water bottle is an everyday common object, but also a symbolic one, as its use marks the independence of children who start to be responsible for their own bottle at the kindergarten level, or even earlier at the nursery school. In a way the refillable water bottle represents the 'battle' against single use plastics already since a time when the term SUP was not invented, or thought of by most people.

The replies to this question are shown in the figure below.

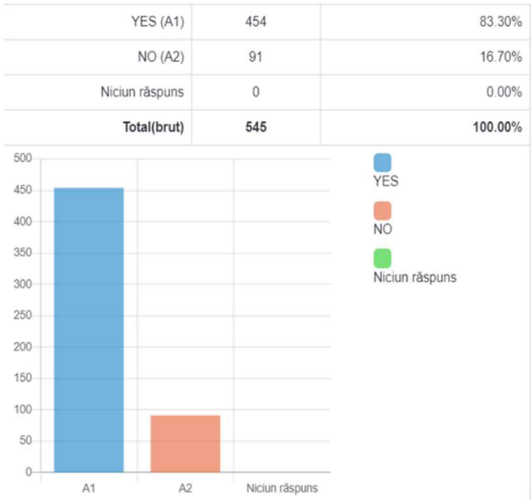



*Figure 33 Carrying around a refillable water bottle*

It is very positive that more than 8 out of 10 of the surveyed students claim they carry a refillable water bottle. Still, the remaining 2 out of 10 is not a negligible percentage, especially if we consider the age of the survey respondents (9-11 year olds mostly), an age when students' pro-environmental concerns and responsibilities peak (there is a drop in such concerns as children enter the teenage phase). Besides, the act of carrying our own water bottle is not only a way to demonstrate our commitment, but can also be an effective 'entry point' for discussion and influence on others about SUPs in general.

The country analysis is presented below. Although we cannot generalise, we observe a slight country variance, for example between Romania and Italy. In Italy, with the older students in our sample, the refillable water bottle use drops. We gather that in many cases there is room for improvement in motivating our students to carry their water bottle and certainly we can do that through PLASTEAM future activities.

| | NL | GR | RO | IT | MT |
|---|---|---|---|---|---|
| yes | 100% | 72,22% | 91,63% | 74,61% | 100% |
| no | 0 | 27,78% | 8,37% | 25,39% | 0 |

*Table 33 Countries' statistics about carrying around a refillable water bottle*

# Section D - Statistics on General Reflection Questions

## D.1 What motivates you in order to reduce, reuse, recycle plastic items?

This was an open question aimed at collecting the motivational factors that guide the students' behaviours regarding plastics, in their own words. The results of such qualitative questions can be very useful, especially in the first steps of any project, before its deliverables are developed.

Obviously it was more difficult than the previous survey-questions, as it asked students to articulate their thoughts on an abstract concept - motivation. We anticipated that only the 'super committed' students would fill it in. We were pleasantly surprised to find out that more than half of the respondents filled it in (547 out of 952) and actually this question determined the sample size that was analysed in the current document, as decided by the partners.

Students' replies are grouped in **clusters of factors** and analysed below, starting from the most common to the least commonly referred factor:

The primary motivation expressed by the majority of the younger surveyed students is **care for the animals** that suffer due to plastic. Some refer to the endangered animals, others mention specific animals e.g. turtles, dolphins, while others talk about animals, birds and fish in general ("The fact that animals suffer a lot from excess plastic in the ocean").

A big part of students, especially older ones, respond to this question by explaining their **daily practices** they are already or could be doing at home, school or city level ("Surely if most of the students brought reusable lunch boxes it would be better, to not bring plastic bags", "Buy with reusable packaging", "Buy detergents in bulk" "Use multipurpose staff", "For example, prohibit the use of plastic bottles or cutlery in the school"). Within this wide group, some students talk about using **alternative to plastic materials**, such as aluminum, paper and glass in the products they purchase ("I might not use plastic bottles and use glass ones"), while others mention the need for **sorting waste** ("I recycle because there are separate baskets", "Have plastic waste bins", "More containers at school", "More bins inside and outside the school would be useful to be able to separate waste"). Only a few students explicitly refer to the **family culture** ("My mother tells me to always do it", "We use a water filter at home").

A big group of the surveyed students -mostly the younger ones- use general claims relating to **saving**, **helping**, and **protecting** the planet. ("I want to protect nature as much as I can.")

Another group refers to the need to **stop the pollution** of the environment or sea, and to a lesser extent, of the land, ground, air. ("Let's not pollute anymore"). Similar to this, a group of students state they are motivated by **cleanliness**, a clean planet, environment, sea, and so on ("I just want to live in a clean world and not in a toxic one filled with garbage"). Relevant to this, is a group of students that put forward **health** claims either for the environment or themselves ("I want to live in a healthy environment").

The **3R hierarchy**: As expected, the term recycling is very popular within the students' claims. Several students refer to reusing objects (also through art), and a fewer students give emphasis to reduction of plastic consumption, as more important than reusing and recycling ("Reduce: don't use it and don't buy it", "Use as little plastic as possible", "Not using them would be ideal").

A few students imply improving **product and packaging design** in their justification ("Those who sell the products should pack them with less plastic", "Less labels on products", "They should sell any kind of food without the use of plastic", "The packages could be made of another material").

The motivation of a small group of students stems from their **fear** of pollution on their personal health and safety ("I am afraid of sea pollution").

Another group of students made **economy** claims ("Saving money but also saving the planet", "Not to buy every other day", "Take a small amount when I return the plastic").

A few students refer to global warming and **climate change**.

A small group of students puts forward **responsibility** claims ("doing my part") or tie their personal action about plastic within the wider environmental concerns ("It motivates me that pollution, not just plastic, kills our planet" "We have only one planet, only one that we humans destroy in an alert ridge. Excessive consumption of natural resources pollutes the air, poisons water and soil").

Another small but distinct group refers to the **irrationality** of the single use mentality. ("If they can be reused, I don't understand why to throw them away", "I think it's better to use a bottle indefinitely than to use a thousand")

A few students connect their motivation to the **actions of others**, either positive actions ("I am motivated by the change of other people") or negative ones ("I am motivated by people that don't recycle", "We are killing our planet and a lot of people are ignoring it, so just do what you can possibly do to reduce trash at home"). One student emphasized on the need for trust and collaboration with like-minded people ("I would need someone who I trust, and who thinks like me").

A few students introduce the **time** factor, the future generations ("In order not to spoil nature for the next generations") and the urgency of taking action ("It will be too late to do something in the future"). On the other hand, the lack of time was mentioned by one student, as a demotivating factor ("Unfortunately, I also lack time, so if I had less things to do I would be able to put myself more on the line).

A few students made claims based on their **knowledge** ("I know plastic is not biodegradable") or their **need for more information** ("Correct information on the damage of plastic in nature and on the potential of recycling and the advantages it can have", "More information", "Advertisements", "I think I need a little inventiveness and information, because not all people give weight to this topic", "Make some tutorials, use them to do nice things") and a few mentioned their **school education** or projects, mostly in art, as a motivating factor ("Talk more about it at school", "More time for art creations at school").

Finally, we need to mention two important groups that we believe should be addressed through the future PLASTEAM activities.

The first one concerns the "**Already doing it"** ones: We are happy to know that many students mention they already undertake action about plastic in their daily activities ("I already recycle everything", "I think I already use little plastic, to drink I bring the bottle and the aluminum of the snack I bring it home and throw it in the separate collection", "I always use the same bottle of water"). So, in our activities we should be creating opportunities that enable these students to move further, beyond what they are already doing. Such a challenging activity could be, for example, to intensify reduction (not just recycling) in their daily lives, to advocate for a plastic-free school policy, to run a campaign to influence their communities, etc.

The second group is the "**Don't know**" ones: Around 1 out of 10 responding students state that they do not know their motivations, or they do not have any. If we add to this group the other ~400 students that simply did not reply to this last question and were not taken into account in the survey analysis, we see that they become the majority. As educators, we should be very concerned about creating the means and ways to reach out to this important part of the student population that is indifferent, or numb, or ignorant, or simply does not know what to do.

# Conclusion

The survey aimed to explore aspects related to pupils' behaviour regarding plastic use, also to their mentality in this aspect. Their answers varied, but offered an overview about what type of SUP items are mostly used, in which school or daily activities, to what extent they use to reuse or recycle plastic items and what motivates them to reduce plastic use.

The students' answers are indicative of the related culture of plastic use, in schools and families. What we can emphasize, is the fact that pupils seem to be quite aware of the risks of plastic pollution, also quite disposed to contribute to reducing it.

According to the answers, it seems that many pupils and schools have already done a great job related to reduction of plastic pollution in the areas below:

- Pupils are very aware on plastic pollution and recycling
- Pupils are motivated to increase their knowledge about plastic footprint issues, plastic pollution, the importance of decreasing plastic usage etc.
- Some canteens do not deliver food in plastic items

The answers emphasized also that there are areas that need to be improved, such as:

- Reducing further the SUP items in daily life. Insist on reduction rather than recycling.
- Develop educational activities and/or projects, in order to increase pupils' knowledge about plastic pollution and practical ways to reduce plastic use.
- Provide updated, accurate, scientifically sound information about plastics. The identified knowledge gaps in the survey concerned the recycling options of plastics, as well as the term "single use plastic".
- Address the contradictions between knowledge and behaviour: The fact that we know something has environmental impacts does not necessarily mean that we adopt a responsible action for it.
- Decrease the SUP availability and distribution in schools.
- Develop the opportunities for a school to 'walk the talk' -possibly through its adopted overall waste management policy- and act as a model showcasing that a SUP-free lifestyle is possible.
- Address the 'family culture', possibly through family activities where parents and pupils can be made more aware of the imperious need of reducing plastic use.
- Address a major part of the student population that is numb, or ignorant or indifferent to plastic pollution, but also another part who believe that they are done with their responsibilities just because they recycle.

As a conclusion, this survey done in some schools from the 5 project countries demonstrates pupils' awareness of plastic pollution and of ways to reduce their plastic footprints. Nevertheless, there is still a long way to go to a society that cares more about the future generations than about its present. It seems that it is our responsibility to educate our pupils to become conscious about the fact that a healthy environment opens the door to a healthy life, a healthy mind and a healthy soul.