

Moving forward with key competences

**On-line survey on maths and science.
Initial and final results
November 2016 – May 2018**

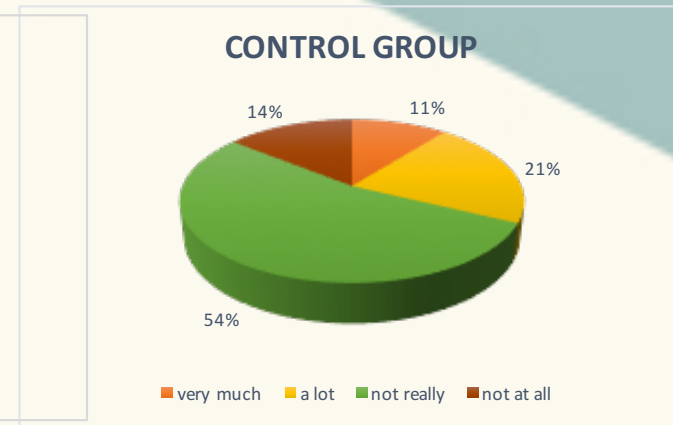
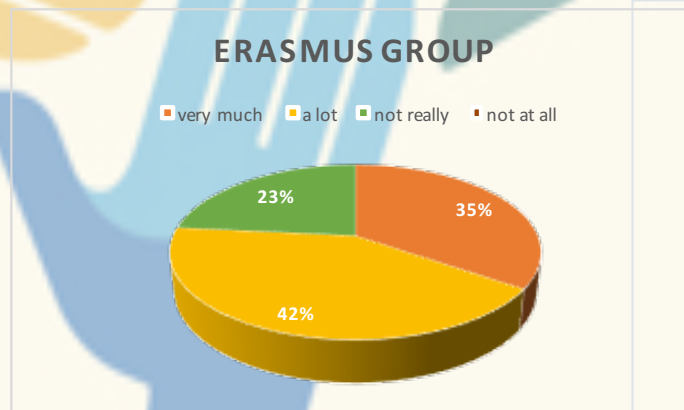
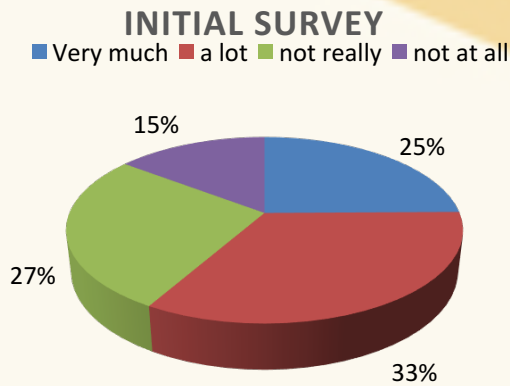
Description of final survey

- The final survey was carried out among 109 students
- 81 of them (ErasmusPlus group) had taken part in the current project and 28 (control group) had not

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- ErasmusPlus group was made up of:
 - 30 boys and 51 girls
 - 25 pupils from Germany
 - 11 pupils from Hungary
 - 12 pupils from Italy
 - 21 pupils from Poland
 - 12 pupils from Turkey
 - Control group was made up of:
 - 4 boys and 24 girls
 - 3 pupils from Germany
 - 13 pupils from Hungary
 - 12 pupils from Italy

Question 1: I like sciences and maths

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	66	28	3
A lot	89	34	6
Not really	72	19	15
Not at all	39	0	4
Tot	266	81	28



Commentary:

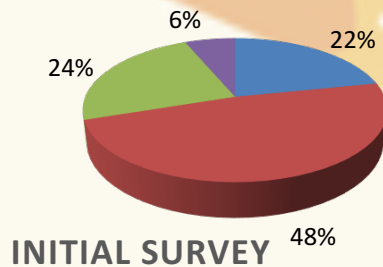
Liking of scientific subjects has been considerably modified by taking part in the present project:

- Initially 58% liked Maths and Sciences to some extent, whereas 42 did not
- At the end of the project in the Erasmus Group, 77% of students liked the subjects, whereas only 23% did not like them much
- In the control group 32% liked the subjects, and 68% did not like them

Question 2: Sciences and maths are important in everyday, practical life

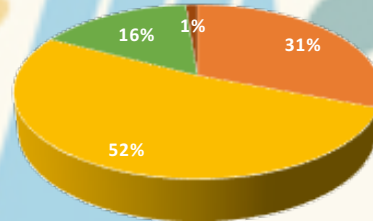
	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	58	25	6
A lot	128	42	14
Not really	63	13	7
Not at all	17	1	1
Tot	266	81	28

■ Very much ■ a lot ■ not really ■ not at all



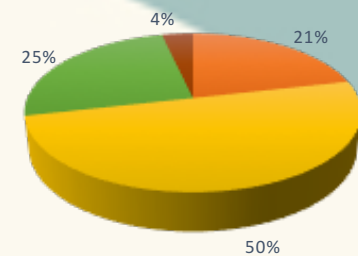
ERASMUS GROUP

■ very much ■ a lot ■ not really ■ not at all



CONTROL GROUP

■ very much ■ a lot ■ not really ■ not at all



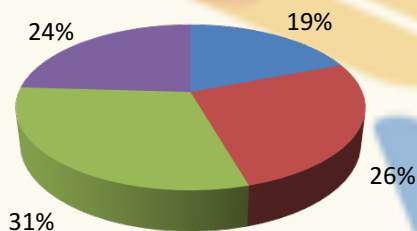
Commentary:

- Perception of usefulness of scientific subjects in everyday life has been considerably increased in the pupils who took part in the project, with the percentage of students who thought so (either very much or to some extent) moving from 70 to 83%.
- The perception in the control group remained roughly the same as in the initial survey

Question 3: In my future, I would like to have a job requiring mathematical skills

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	51	28	2
A lot	70	17	9
Not really	81	28	10
Not at all	64	8	7
Tot	266	81	28

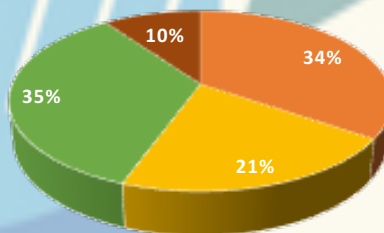
■ Very much ■ a lot ■ not really ■ not at all



INITIAL SURVEY

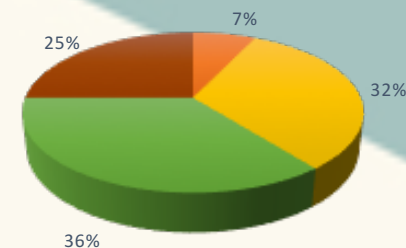
ERASMUS GROUP

■ very much ■ a lot ■ not really ■ not at all



CONTROL GROUP

■ very much ■ a lot ■ not really ■ not at all

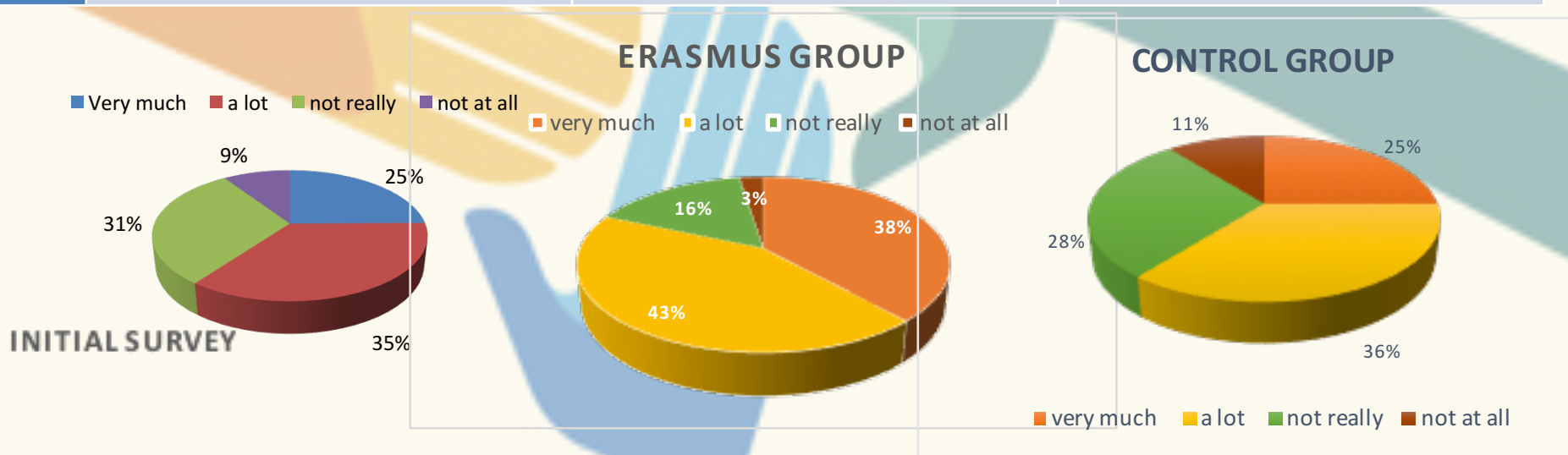


Commentary:

- The ratio of students who would somehow like to find a job requiring mathematical skills (as opposed to those who would not) has been reversed in the Erasmus group, whereas it has been confirmed in the control group, where more students are not interested in such a kind of job.
- This means that the students who did not take part in the ErasmusPlus Project carried on having negative ideas on a mathematical-oriented job, whereas the ErasmusPlus students changed their minds

Question 4: Scientific subjects are made up of a set of rules to be learnt by heart

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	66	31	7
A lot	94	35	10
Not really	81	13	8
Not at all	25	2	3
Tot	266	81	28





Commentary

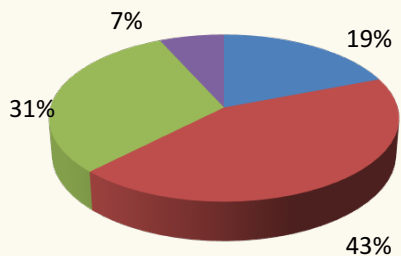
- Participation in the project seems to have increased in the students the idea that scientific subjects are made up of a set of rules to be learnt by heart

Question 5: Sciences and maths are subjects with a lot of practical uses in everyday situations

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	51	24	2
A lot	115	35	18
Not really	82	21	6
Not at all	18	1	2
Tot	266	81	28

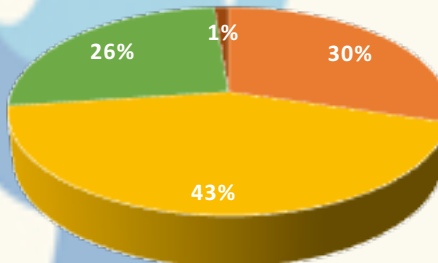
INITIAL SURVEY

■ Very much ■ a lot ■ not really ■ not at all



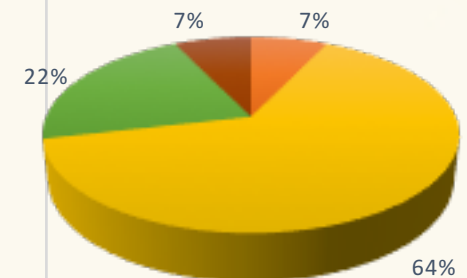
ERASMUS GROUP

■ very much ■ a lot ■ not really ■ not at all



CONTROL GROUP

■ very much ■ a lot ■ not really ■ not at all



Commentary

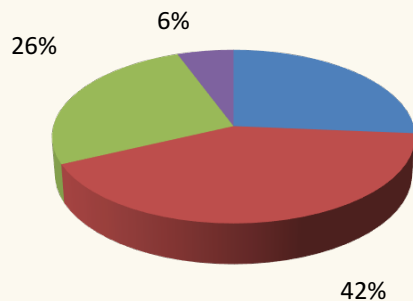
- All students interviewed in the second year showed increased awareness of the importance of science and maths skills in everyday life, regardless of their participation in the project
- but the percentage of people believing that such skills are of no use at all has been reduced to 1% among the pupils involved in the project

Question 6: scientific subjects are more difficult than other subjects, and therefore suitable only to few people

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	70	24	12
A lot	111	26	8
Not really	70	24	7
Not at all	15	7	1
Tot	266	81	28

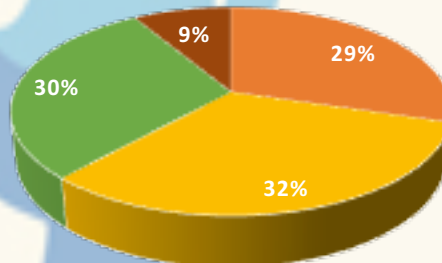
■ Very much ■ a lot ■ not really ■ not at all

INITIAL SURVEY

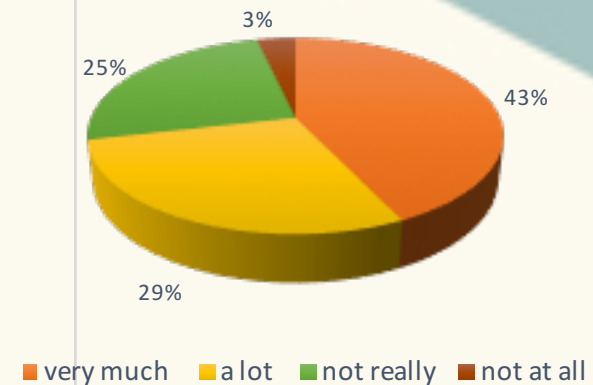


ERASMUS GROUP

■ very much ■ a lot ■ not really ■ not at all



CONTROL GROUP



Commentary

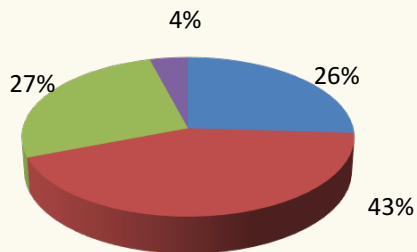
- After one year percentages remain more or less the same, regardless of participation in the project.
- Yet, the students who believe that scientific subjects are absolutely not suitable only to few people jump from 6 to 9% among the ErasmusPlus students

Question 7: Everyone should have some knowledge in scientific subjects

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	69	38	6
A lot	115	32	13
Not really	71	10	8
Not at all	11	1	1
Tot	266	81	28

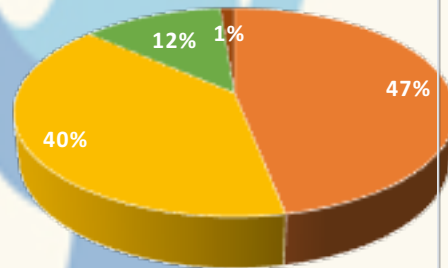
INITIAL SURVEY

■ Very much
 ■ a lot
 ■ not really
 ■ not at all

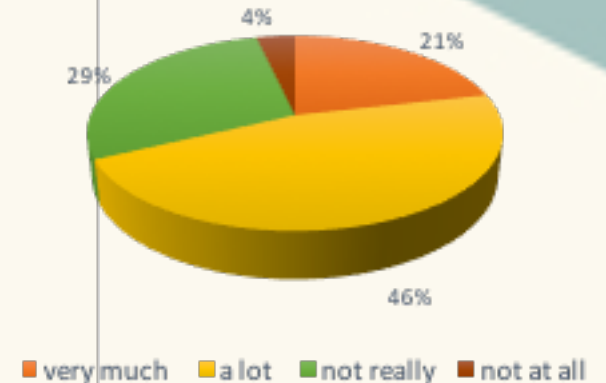


ERASMUS GROUP

■ very much
 ■ a lot
 ■ not really
 ■ not at all



CONTROL GROUP

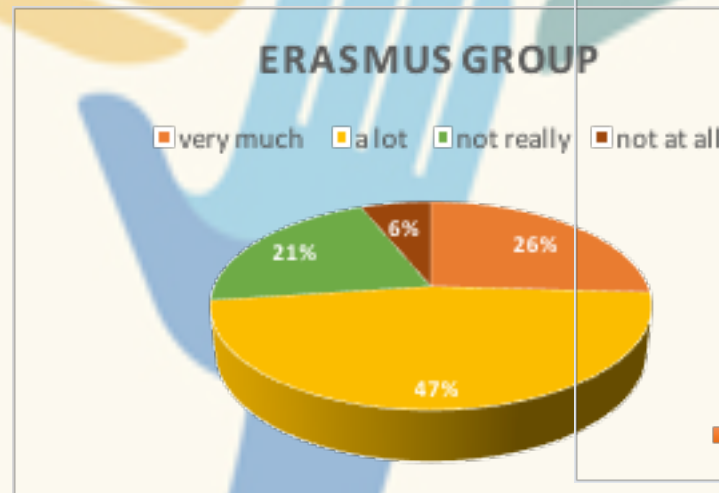
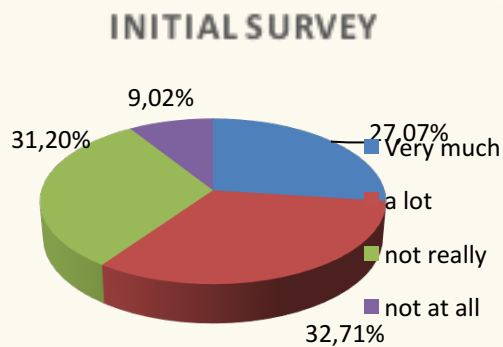


Commentary

- Remarkable increase (from a total of 69% to 87%) of students who believe that everybody should have some knowledge in scientific subjects is noticed among ErasmusPlus students.
- Control group shows the same attitude as students before starting the project

Question 8: When I have doubts in one of the scientific subjects of my curriculum, I ask my teacher for further explanations

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	72	21	4
A lot	87	38	13
Not really	83	17	10
Not at all	24	5	1
Tot	266	81	28



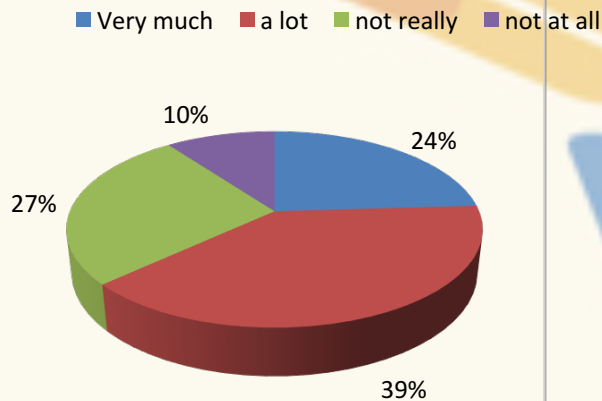
Commentary

- Relationships with teachers seem to have greatly improved in the pupils involved in the project, and now most of them feel free to ask for further information to their teachers

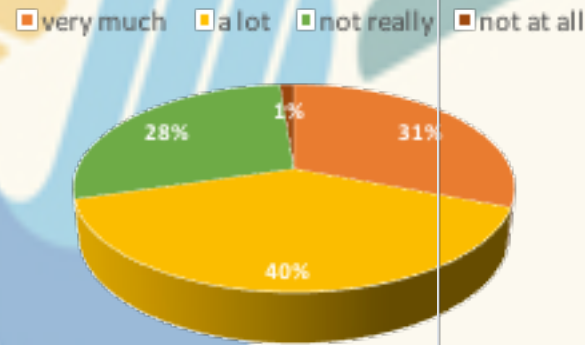
Question 9: I regularly study science and maths, so as to improve my performances

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	64	25	3
A lot	104	32	9
Not really	41	23	11
Not at all	27	1	5
Tot	266	81	28

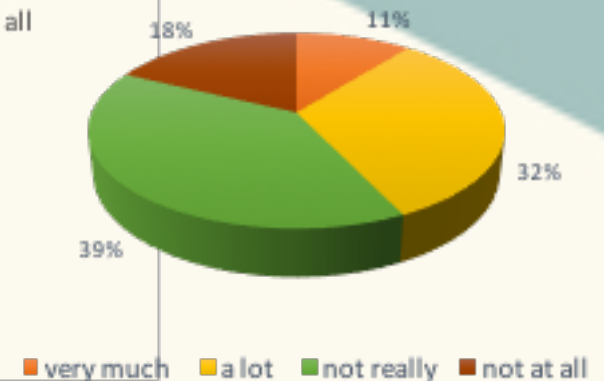
INITIAL SURVEY



ERASMUS GROUP



CONTROL GROUP



Commentary

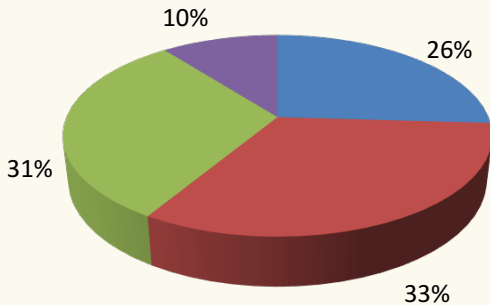
- Whereas students in the control group appear to have reduced their study of science and maths, the ErasmusPlus group have increased their regular study

Question 10: After studying the theory, I try to solve some problems, so as to consolidate what I have studied

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	69	30	4
A lot	87	29	11
Not really	82	20	10
Not at all	28	2	3
Tot	266	81	28

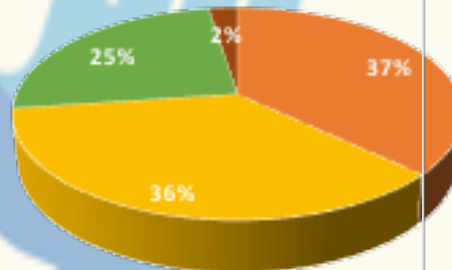
INITIAL SURVEY

Very much a lot not really not at all

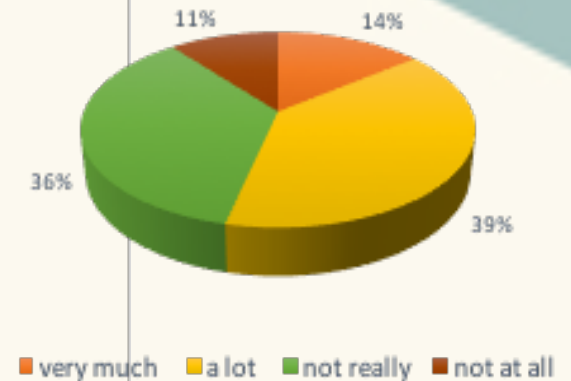


ERASMUS GROUP

very much a lot not really not at all



CONTROL GROUP



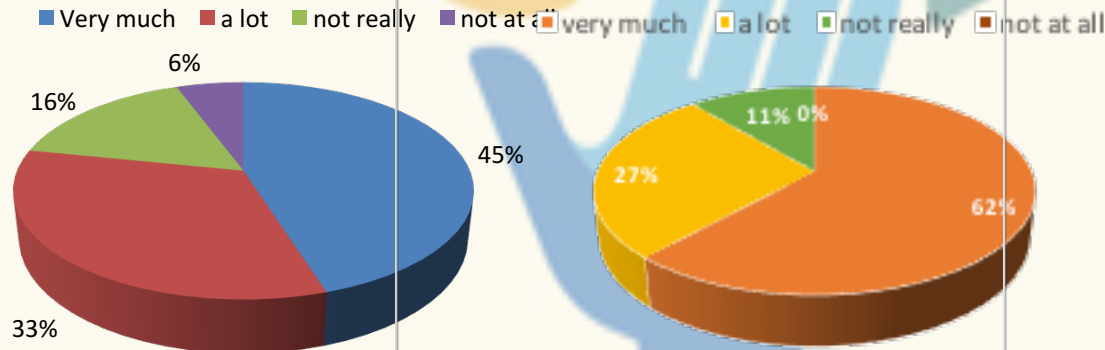
Commentary

- At the beginning of the project and in the control group the students who try to apply what they have studied to practical problems is approximately the same as those who are not interested in the practical applications of maths
- On the contrary, among the ErasmusPlus students those interested in solving problems have greatly increased

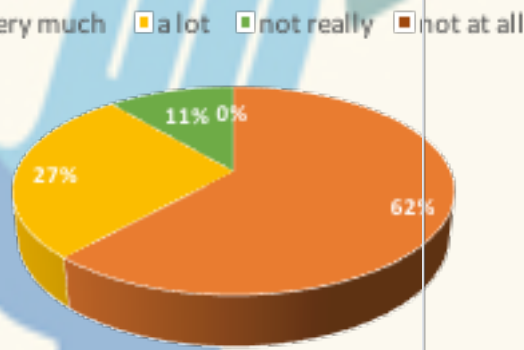
Question 11: In my opinion maths is helpful to develop logic skills

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	120	50	13
A lot	88	22	15
Not really	43	9	0
Not at all	15	0	0
Tot	266	81	28

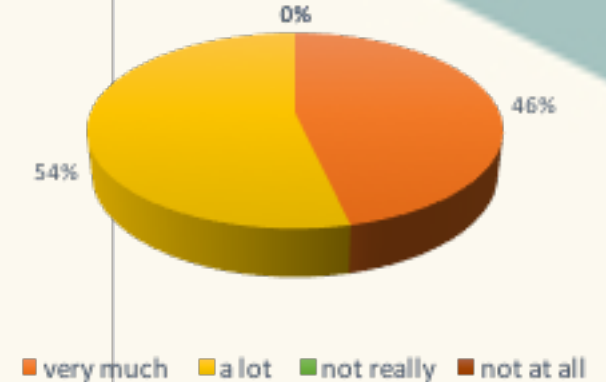
INITIAL SURVEY



ERASMUS GROUP



CONTROL GROUP

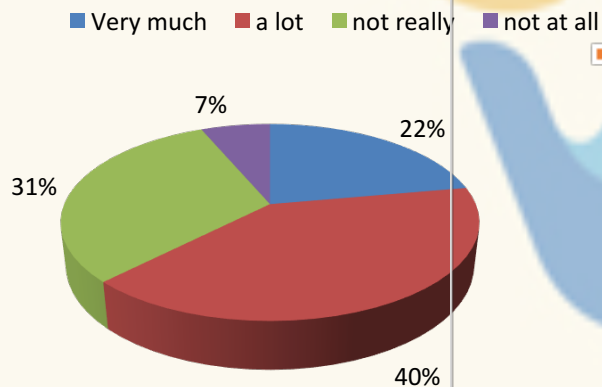
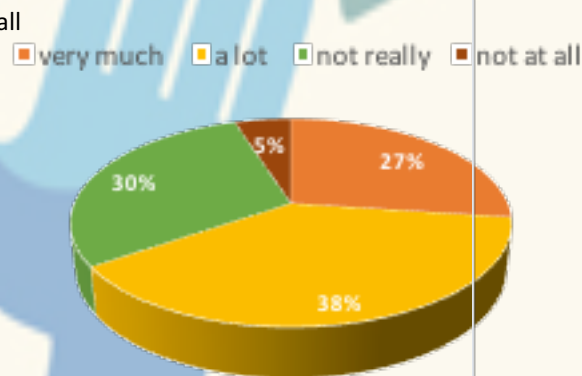
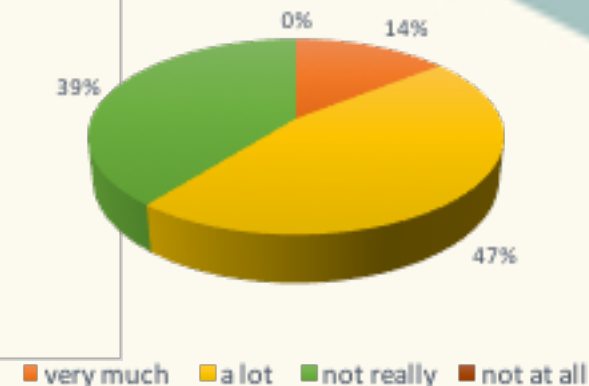


Commentary

- The students who believe “very much” in the power of maths to develop logical skills are about half of the students at the beginning of the project and in the control group, whereas the ratio has rocketed to 62% in the students involved in the project

Question 12: There is a clear correspondence between my feelings about scientific subject and my school results

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	59	22	4
A lot	107	31	13
Not really	83	24	11
Not at all	17	4	0
Tot	266	81	28

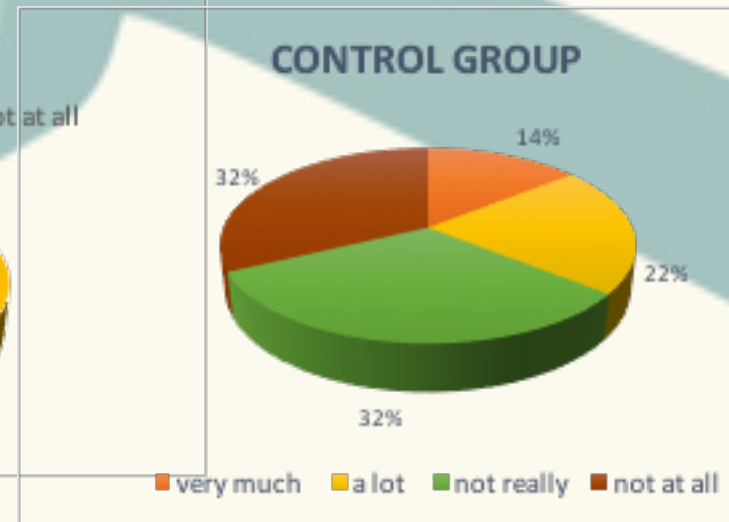
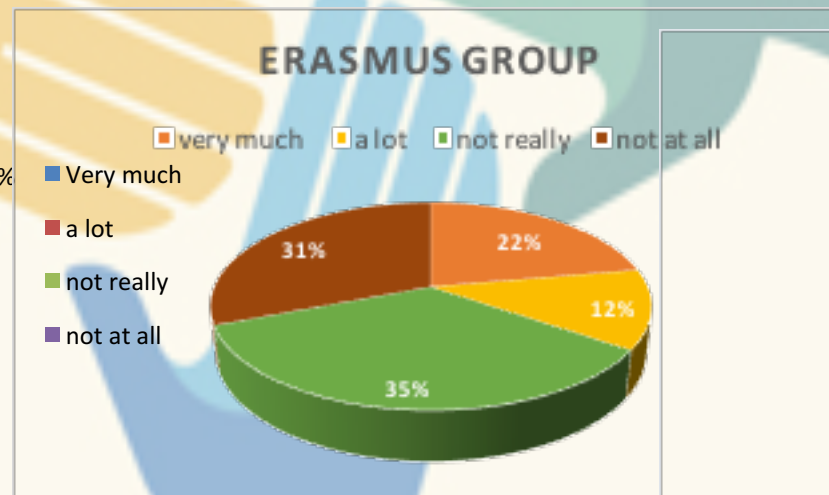
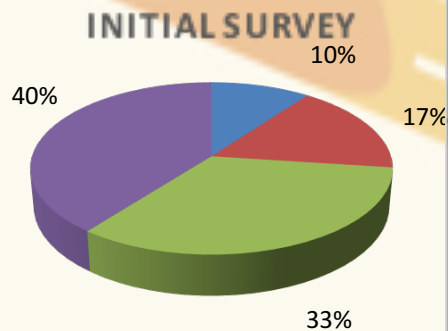
INITIAL SURVEY

ERASMUS GROUP

CONTROL GROUP


Commentary

- The percentage of students who noticed a relevant correspondence between their feelings about scientific subjects and their results has moved from 22 to 27% in the ErasmusPlus group, whereas it has dropped to 14% in the control group

Question 13: I often read scientific magazines

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	27	18	4
A lot	145	10	6
Not really	89	28	9
Not at all	105	25	9
Tot	266	81	28

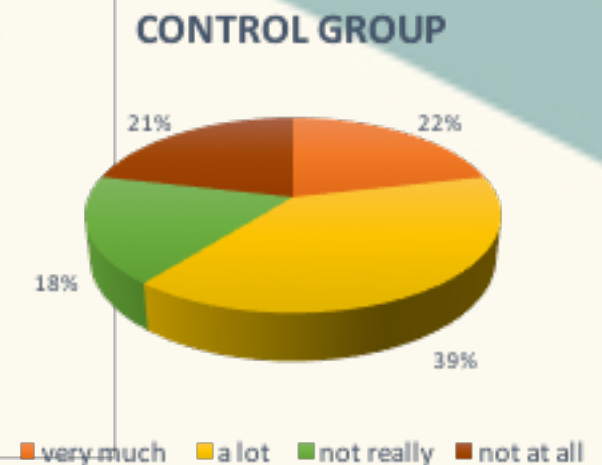
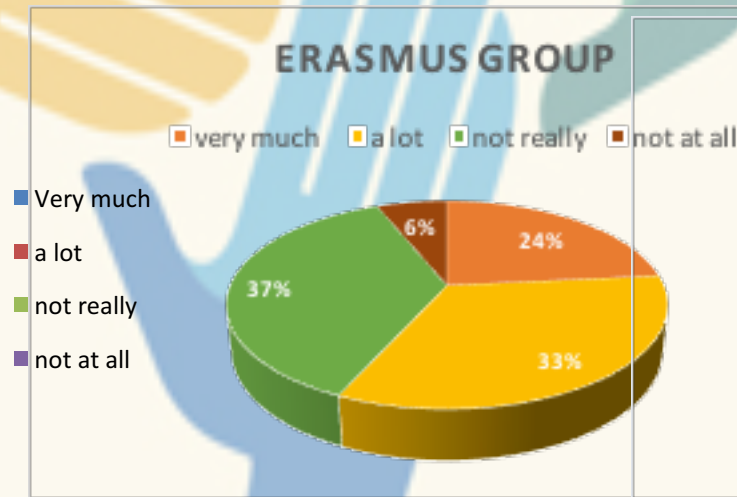
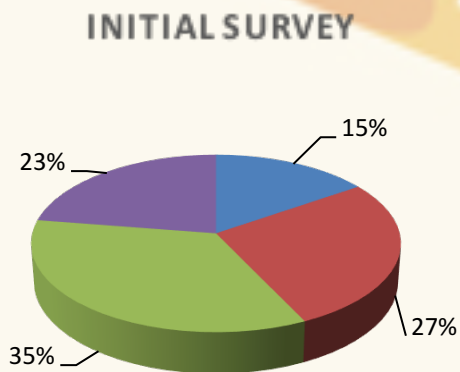


Commentary

- The reading of scientific magazines has increased both in the ErasmusPlus group and in the control group, but the percentage of the former has almost doubled

Question 14: I often watch TV programmes about scientific topics

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	41	19	6
A lot	73	27	11
Not really	92	30	5
Not at all	60	5	6
Tot	266	81	28



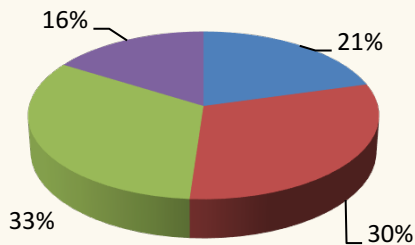
Commentary

- The percentage of students who never watch scientific TV programmes has dropped slightly in the control group, but it has gone from 23% to 6% in the ErasmusPlus group

Question 15: If I am curious about a topic studied at school, I search for more information on the web

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	55	33	4
A lot	81	34	14
Not really	87	13	9
Not at all	43	1	1
Tot	266	81	28

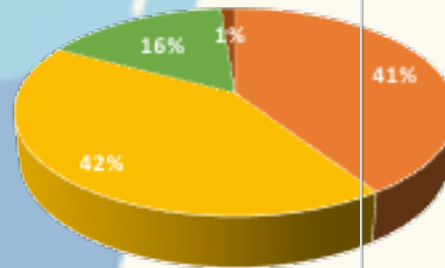
INITIAL SURVEY



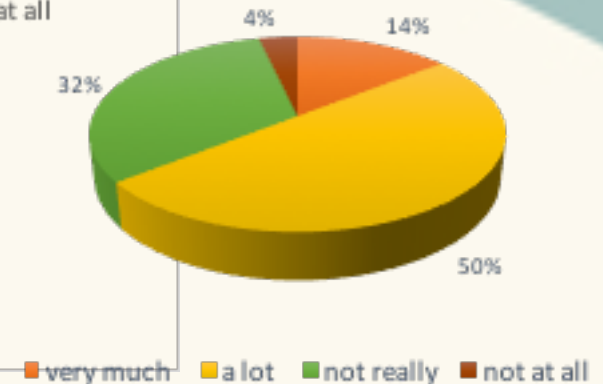
- Very much
- a lot
- not really
- not at all

ERASMUS GROUP

- very much
- a lot
- not really
- not at all



CONTROL GROUP



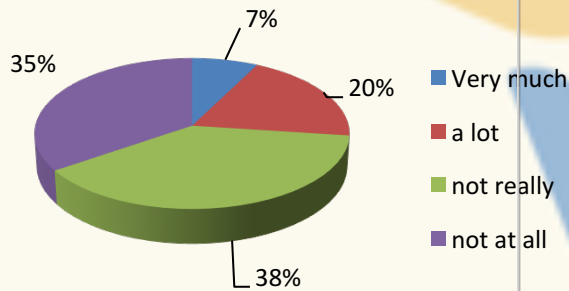
Commentary

- Curious students who often or sometimes search information on the web have moved from 51% at beginning of the project to 64% in the control group and to an impressive 83% in the ErasmusPlus group

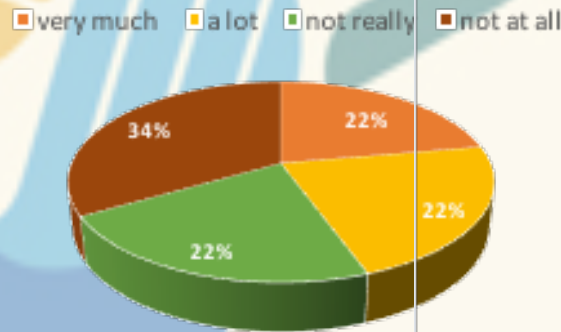
Question 16: I have read books regarding scientific topics

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	20	18	2
A lot	52	18	10
Not really	102	18	5
Not at all	92	27	11
Tot	266	81	28

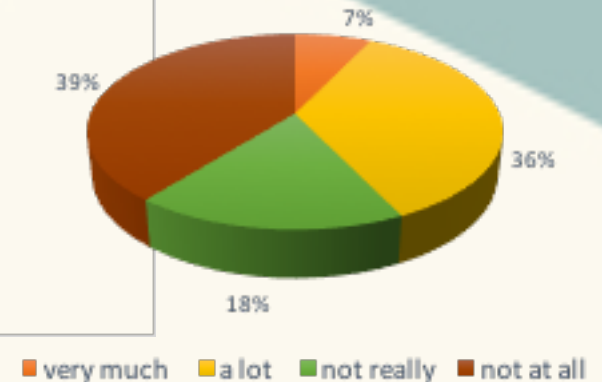
INITIAL SURVEY



ERASMUS GROUP



CONTROL GROUP



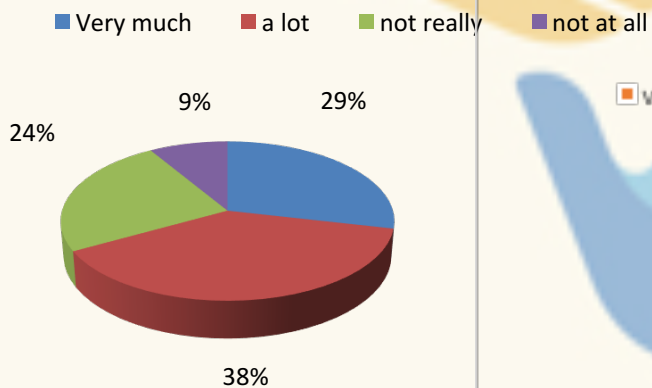
Commentary

- Whereas the number of students who read quite a lot of scientific books has remained the same in the control group (7%), it has trebled in the ErasmusPlus group

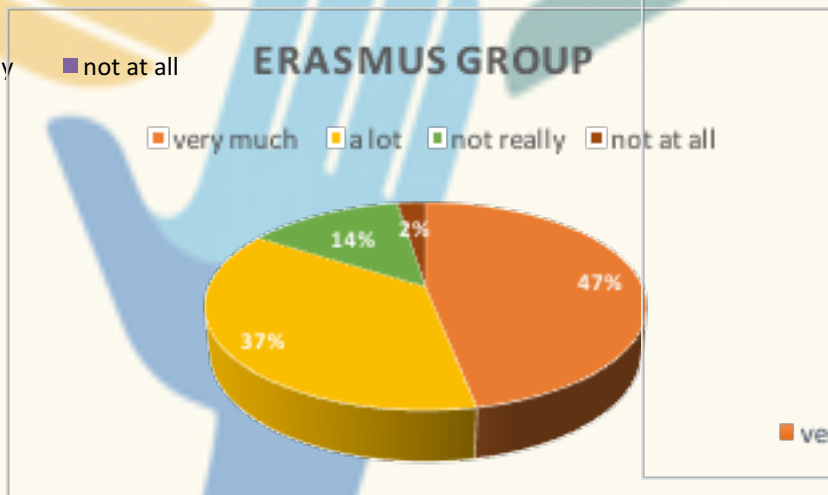
Question17: When in the presence of a natural phenomenon, I would like to know its cause

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	76	38	8
A lot	102	30	12
Not really	65	11	7
Not at all	23	2	1
Tot	266	81	28

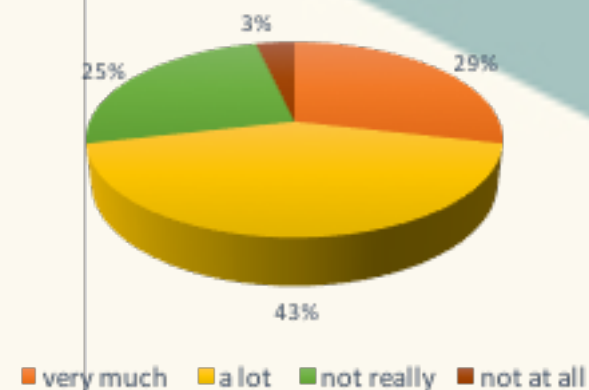
INITIAL SURVEY



ERASMUS GROUP



CONTROL GROUP



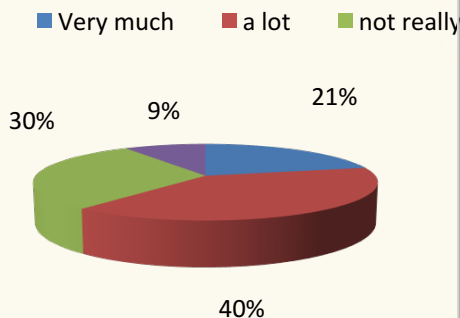
Commentary

- The curiosity of ErasmusPlus students in front of a natural phenomenon has almost doubled (29% to 47%), whereas it has remained the same in the control group

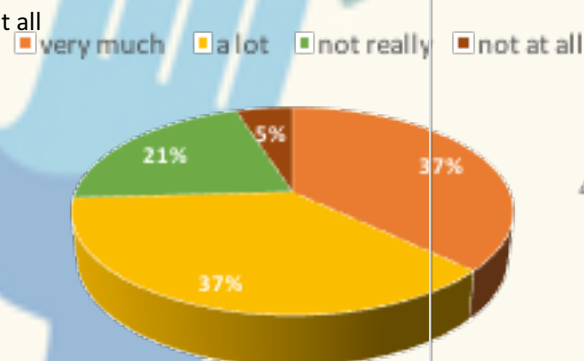
Question 18: When I see an object that is interesting to me because of its form or function, I am curious to disassemble it so as to see what its inside is like

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	57	30	5
A lot	105	30	9
Not really	80	17	12
Not at all	24	4	2
Tot	266	81	28

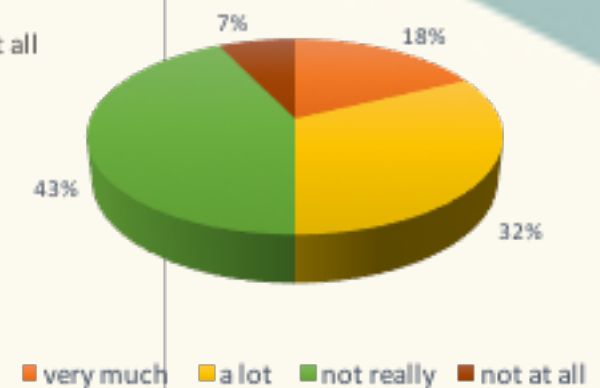
INITIAL SURVEY



ERASMUS GROUP



CONTROL GROUP



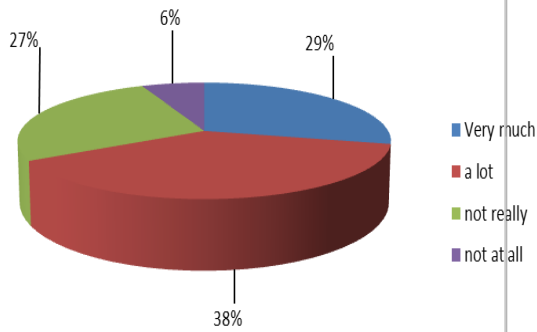
Commentary

- Curiosity about the functioning of an object has slightly dropped in the control group, while it has increased in a relevant measure among the students who took part in the project

Question 19: : I am attracted to natural environments and I would like to know them better

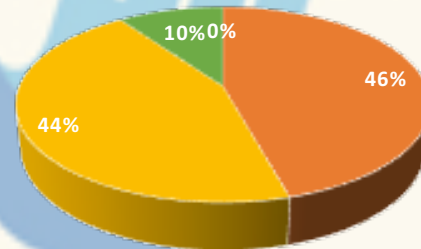
	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	76	37	8
A lot	102	36	13
Not really	71	8	6
Not at all	17	0	1
Tot	266	81	28

INITIAL SURVEY

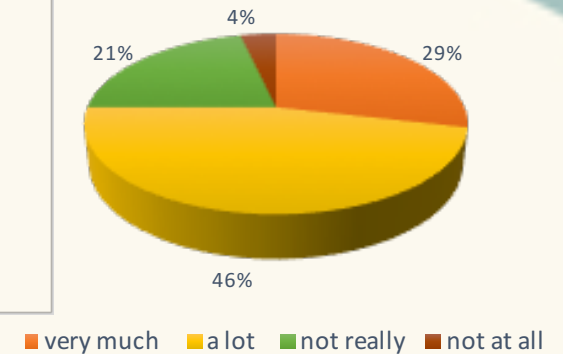


ERASMUS GROUP

very much a lot not really not at all



CONTROL GROUP



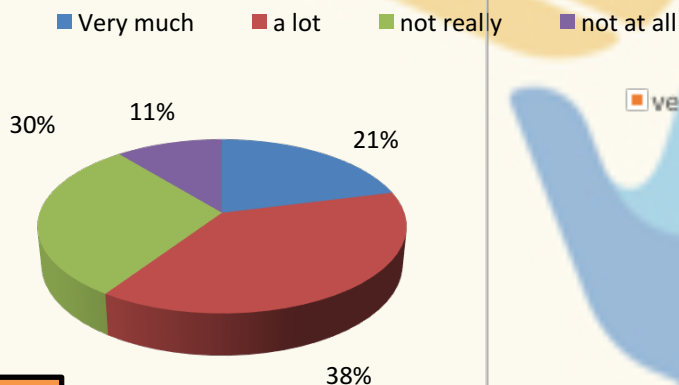
Commentary

- Curiosity towards the environment has increased, but among the ErasmusPlus group the increase is definitely more evident

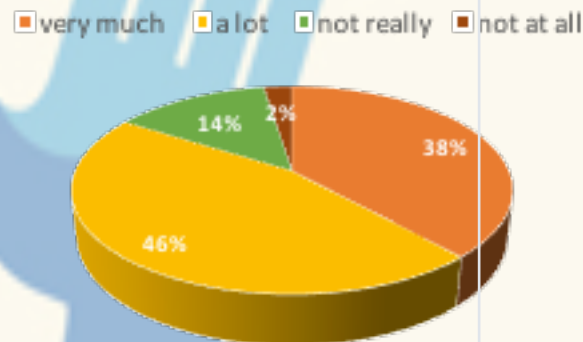
Question 20: In my daily life I happen to observe phenomena which I can explain using what I have learnt at school during Physics, Sciences and Maths lessons

	Initial survey	Final survey: Erasmus Group	Final Survey: Control group
Very much	56	31	6
A lot	102	37	13
Not really	79	11	8
Not at all	29	2	1
Tot	266	81	28

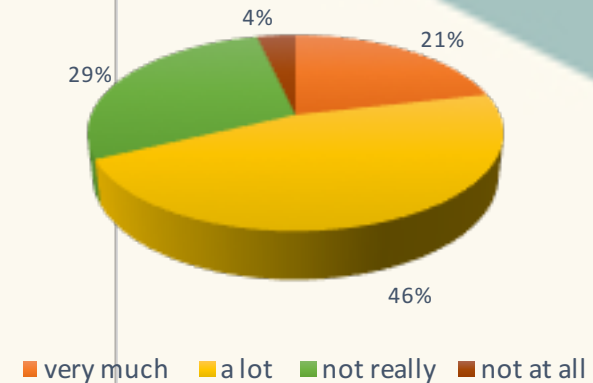
INITIAL SURVEY



ERASMUS GROUP



CONTROL GROUP



Commentary

- The percentage of pupils somehow able to use mathematical and scientific skills in everyday life has soared from 59 to 84% in the ErasmusPlus group, whereas a more modest increase to 67% has been detected in the control group

The present survey was carried out within the ErasmusPlus Project

“Moving forward with key competences”

by the partner schools:

- Liceo Bocchi-Galilei - Adria (Italy)
- Gmina Bytom ul. Parkowa 2 – Bytom (Poland)
- Vahit Tuna Anadolu Lisesi - Çanakkale (Turkey)
- Eötvös József Gimnázium és Kollégium – Tata (Hungary)
- Clemens-August-Gymnasium – Cloppenburg (Germany)