

Science 4 all



The Erasmus+ magazine

June 2018



Mobilities

France and Portugal were the destinations of the last mobilities.

Activities

In every country, many scientific events have nourished students.

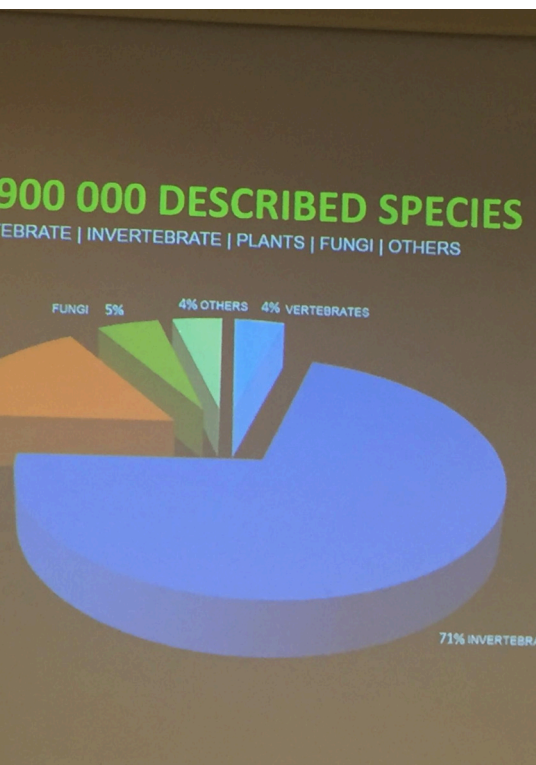
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Science 4 all



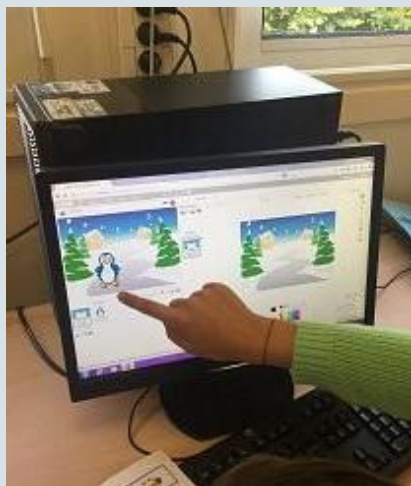
In 2017-2018, "Science 4 all" project continues to open pupils and teachers' mind and has brought new friendships

Interesting workshops

Scratch, a software discovered by partners.

French pupils taught their partners how to code with Scratch !

They manipulated the software very easily and really had fun!



Treasure Hunt

A nice way to walk in the magnificent gardens of the world-known Versailles palace and to learn some history about it.



The workshops involved participants' creativity

Versailles, an unforgettable mobility !

Morning coffee, juice, delicious pastries and exotic fruits greeted the guests in the beginning of every morning at the College Pierre de Nolhac. Then interesting teamwork activities were offered, such as different workshops for pupils and teachers, guided tours, games, etc. For example, one of the tasks was to interview parents from host families about their education, work, knowledge in the field of mathematics and the natural sciences they use every day. The pupils asked the host parents more

than 25 questions, and afterwards, they presented the results of their first journalistic practice to all the participants. Workshops on coding and art were also very appreciated.

Another very exciting activity was a game "Treasure hunt" in the beautiful park of the Versailles Palace. While playing the game, the participants got acquainted with the heritage left by the French kings from Louis XIV to Louis XVI.



Workshop "art and science"

Students must imagine a poster from a piece of work which needed knowledge in mathematics to be created.

How to combine 2 fields: mathematic and art ?

Discovering a new country and its culture

Of course, there was a visit to the palace, where the participants saw rich apartments of the Kings, private queen chambers and the famous Mirror Gallery, designed by Jules Arduin-Mansart. It was a terrific experience! In addition, we all visited the Museum of Science, where the guests of France participated in the most interesting chemical experiments, and afterwards there was a picnic right at the foot of the Eiffel

Tower! We visited Notre-Dame de Paris, admired the pyramids on the territory of the Louvre and took a ride along the Seine by boat.

It was an unforgettable mobility!

The Estonian team.



Versailles palace was impressive especially the mirror gallery

A day in Paris: the Eiffel tower, the Louvre and a walk in the quartier latin where we bought nice souvenirs



Chamallow challenge was a nice and fun ice-breaking activity.



Students worked in groups most of the time



In this last mobility most students already knew each other and there was a good atmosphere

Activity on fossils



We arrived in Lisbon on Sunday afternoon. From the airport, we went to Sintra and met our host families. Next day, we had some activities at school: students from all countries presented "Dream stories of their lives" and the summary of the weather station measurements. In the afternoon, we went to the coast and saw amazing views. What is more, we saw huge dinosaur footprints there! Later, everyone had classes with their host students. On the second day, we had some activities at school but after that, we went to Cascais to play games on the beach. We had a lot of fun!

On Wednesday, we went to Lisbon. First, we went into a cable car. After that, we had a workshop: "We are Biodiversity" and after it, we went to the Lisbon Oceanarium. The Oceanarium was awesome! We were back at school at about 4:30 pm and then, we went bowling with our host families. On Thursday, we came back to Lisbon to visit Belém, after which we had a picnic in the auditorium of the museum that we were going to visit next. We visited the Museu dos Coches and

returned to school at the same time as Wednesday after which we went to the mall in Sintra.

When we returned home, we prepared a meal for Friday's party. It was a great experience to cook together with host families.

On Friday, we started the day at 9:30 with the lesson at the Science museum in Sintra. We were to have a Sintra Selfies trail but the weather was very bad and we had to stay in school, where we had very interesting activities related to fossils. Later, we went sightseeing in Sintra; we walked around the souvenir shops and we had a great time there. In the evening, we had a party prepared by host families and the teachers at school. The party was great and everyone had fun there. Unfortunately, we had to say goodbye, because it was the last day of our mobility. All the girls were crying - it was a very touching moment. Next day, we returned home.

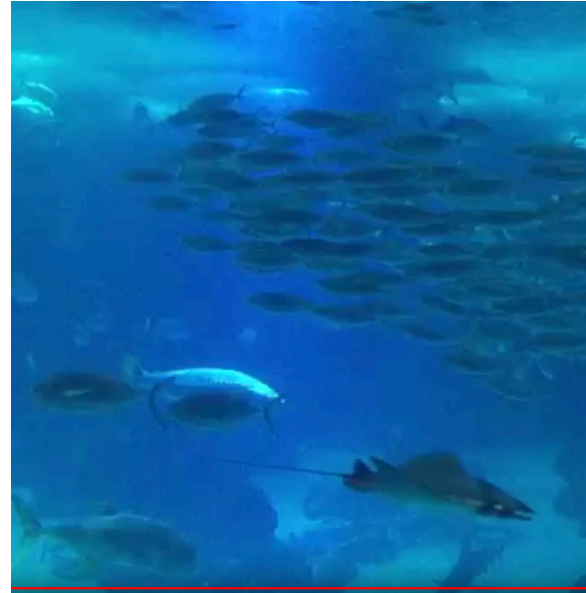
This is how our wonderful and unforgettable journey to sunny Portugal ended.

Portuguese students coached their partners during the activities. They were really implicated and gave instructions and explanations in English.



It was so windy that we couldn't go and see the dinosaurs footprints. We went to Cabo da Roca, the most western extent of continental Europe.

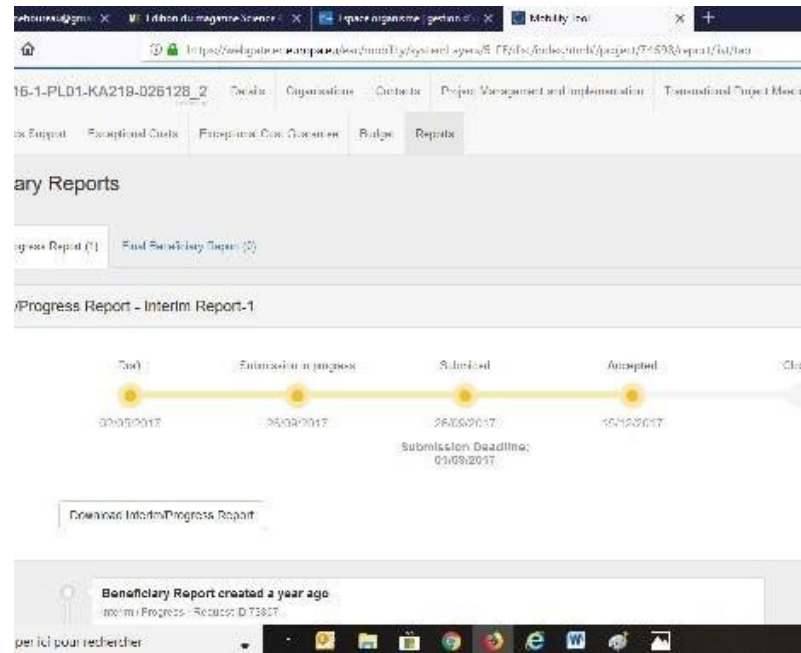
The Oceanarium in Lisbon



A nice trip to Belem



Icebreaking activity: cutting and decorating sardines for Easter.



Mobility tool is an European tool to follow the project along the 2 years

In June 2018, each country's coordinator met in Poland to finalise the project and write the final report

Krakow, 29 May 2018 the Portuguese, Estonian and French coordinators were welcomed by Ula, the main coordinator of the project. This meeting was quite emotional as it was the last one after 3 years of intense collaborative work.

The team went over activities, events and results of the project and realised that students and teachers have worked very hard and produced a lot of documents these two years.

The final evaluation shows that students and teachers have improved in English, in digital tools knowledge and general culture. Of course, for most of the participants, mobilities are the main

souvenirs of the project. Moreover, thanks to the evaluation, they realised that they have learnt a lot.

I would like to thank Ula, who was a wonderful coordinator; she knew how to ally rigor and good mood. Teachers from all countries have said this project was an unforgettable experience. Blandine, from France

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SCIENCE 4 ALL

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Lesson Plan

Grade: 14-16 years old	Time: 2 x 45 minutes
Date: December 2017	
Subject: Mathematics	
Star Wars with Maths	
Practising calculating volume and area of solids of revolution	
Increasing pupils' motivation in Maths.	
Improving pupils' skills in working in groups	
Developing creativity and	
Using an interactive whiteboard, worksheets, paper, markers, calculators	
Lesson: 1 st lesson for practising formulas and calculations related to circumference, volume and surface area of solids of revolution: ball, hemisphere and cylinder. Pupils aged 15. In this lesson, they will be using robots from Star Wars, as examples of solids of revolution. Additionally, pupils will learn deeper elements of the pop culture and a phenomenon of the Star Wars film. The lesson requires spatial imagination, proper reading data in the technical drawings and calculations. There are also some Maths skills from previous lessons needed: calculating area and volume, rounding, converting units. Links and a worksheet are attached. Students present their results of calculation	
In this lesson, students invent and draw a robot for doing a homework. They present results of their work to the rest of class vote for the best robot. If there is enough time a short discussion "What do you think about the face of humans?"	

Objectives: Know how to calculate volume and area of solids and what are Star Wars. Calculate area and volume of real solids in concrete situation. Understand relation between circumference of a ball (3D) and passed distance (2D). Join knowledge in robots in the film, solids of revolution and spatial imagination in the robot. Pupils go beyond known environment. Imagine world of XXII century and place their own robot.

Innovative lessons plans

Teachers shared their experience of lesson plans including innovative methods as for example cross-curricular, problem-based teaching, IBSE method (Inquiry Based Science Education), CLIL lessons, collaborative learning and teaching, worksheets, etc. Lessons were planned and conducted by teachers of the partner schools during the project.

24 innovative lessons are suggested on etwinning website <https://twinspace.etwinning.net/25393/pages/page/156659>

NIGHT OF SCIENTISTS

September 29, 2017 in Krakow

A group of about 20 students took part in the Night of Scientists. They set off at 3 pm, and arrived in Krakow at 6 pm. They took part in shows dedicated to chemistry, telecommunication, physics etc.

On telecommunication display, they communicated with people from whole Poland and on physics ones there was



a presentation of UV rays. During the event, there was a lot of entertainment and occasions to compete with each other for example while finding gold. It was funny and instructive. The experience was really unforgettable as we did all the activities during the night.



Different events to get to know better labour market

On January 29, we went on a trip to Nowy Sącz. We arrived in the morning and first we walked to labour office and listened to a short lecture about the changing labour market. Then we went to „Zespół Szkół Elektryczno-Mechanicznych” School in Nowy Sącz. We were able to see there how students were taught and what was the equipment of classrooms.

We also listened to lectures about different specializations that school could offer to teach. At the end of our trip, we went to NEWAG workplace where we were able to see different stages of making a railway wagon.



Labour market festival

On March 22, we went on a trip to Krakow to take part in Labour Market Festival I Hala EXPO. We arrived at 10 am and shortly after, we went to see what was inside. We spent almost 2 hours walking around, listening and exploring wide offer of many schools.

We were able to see a lot of stands full of equipment stretching from gastronomy to police staff. We left it at about 12 am.

Rakvere

In April, our students visited the city of Rakvere. The program included a visit to a museum and the Rakvere Castle. In the museum, we were told a lot of interesting things about proper nutrition, about the consequences of water and air pollution.



In the Rakvere Castle we learnt a lot about the Middle Ages, the history of the castle, the knights and the plague epidemic. In the castle, we were able to try our hand at archery, produced black powder, which was later set on fire, and in the end we were shown a torture room, and the bravest of us descended into it.



The Narva Bastion, Tartu and Rakvere



Students made a toy in a form of a bat

Our team went to an excursion to the casemates of the Narva Bastion Victoria. In the casemates, we were told a lot of information about bats, watched an interesting film and we were even taken to the dungeon. Underground we were lucky enough to see some real bats in hibernation. We learned a lot of interesting things, for example, how and where bats live, how many of them exist in the world and in Narva; what they eat and how they breed.

Visit in Tartu

In February, our team visited the Estonian National Museum and the science centre "Ahhaa in Tartu". In the museum, we managed to see exhibits from different times, starting from Ancient Estonia up to the present time. Afterwards, we went to the "Ahhaa" centre. The students learnt a lot of new and interesting information about the vision (eyesight) and an eye as an organ. Also they could check how confidently they could hold a scalpel in their hands while cutting frozen pigs' eyes. The students from the second group isolated the DNA from their saliva.

How do we protect nature ?

A visit of a farm in Grignon

On Monday June 4, 2 classes went to visit a special farm. The latter was created to help future agronomists to get knowledge about agriculture and breeding. They saw stables and their 300 hundred cows, sheep and lambs. They even tested sheep's milk and in the afternoon participated to a workshop about making butter.



Year 8, pupils were very enthusiastic to approach cows.

On Tuesday March 20, thanks to the Erasmus project «Science4all», we had the chance to go to the Port Royal forest, near Rambouillet. We went along a long-distance footpath to study trees and the biological life in the woods. We met a forest ranger who explained us how to measure height and age of trees. In groups, we tried to make measures. We realised that maths are very important to understand the forest. While walking in the woods, we discovered a pond and marsh. The ground was very muddy and we saw ferns. At last we had free time and we built a hut. It was fun ! **Pupils, year 8.**

The arboretum of Chèvreloup is a big park where different animal and plants species live. The meadows aren't mown down to let insects pollinize plants. We visited the humid greenhouse and the dry and hot greenhouse. We saw various tropical plants such as cactus, and vanilla trees. We noticed that names were written in latin, the universal language for scientists. This visit gave us an opportunity to see plants we could never see in our natural French life.

4e4 Class



Hey!

We have not been told that trees needed genius mathematicians!

The aeronautical world



We went inside the Concorde

On Friday May 11th, a year 8 class from our school went to visit the aeronautical museum. It is situated at the Bourget airport, which was built during the first world war to let planes take off and land. After the war, the airport opened to civil aviation and became the spot for "Big Raids" such as Charles Lindbergh's performance in 1927 (we learnt that he was the first pilot to cross the Atlantic by plane). We saw very old planes like one of the aeropostale company which Antoine de Saint Exupéry used to carry mails from Europe to Sud America.

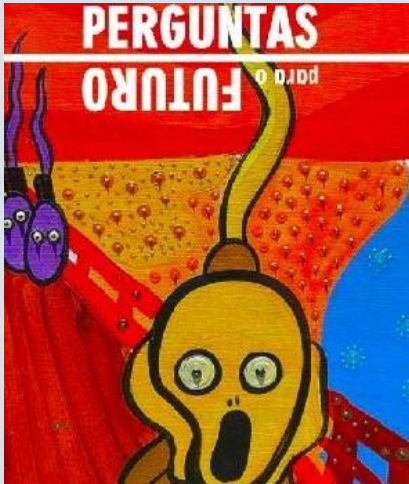
We had the chance to go inside the Concorde, the first supersonic passenger-carrying commercial airplane and a plane which carried paratroopers on D-Day, that is to say the day of the Normandy landings in 1944. It was quite impressive. We were told that there were only approximately no more than 5 soldiers out of 20 who managed to land with their parachutes. We also went into a Mirage's cockpit. It is just unbelievable to see all the instruments that are set in such a tiny space. We spent a very nice and interesting day !

4e4 Class

25th January 2018

“Perguntas para o Futuro”
(Escola Secundária de Santa Maria)

Year nine students from D. Fernando II school attended the 3rd edition of “PERGUNTAS PARA O FUTURO”. During ...



Students had excellence performance in tearing the accacias

In addition, they burn very easily, which means that if a fire occurs they will spread it more easily. As we were explained in the beginning, there is a specific way to tear off the acacias so they will not grow again - they must be pulled as close to the ground as possible so that most of the root leaves, if we leave the root, the acacia will soon grow again afterwards.



Article written by Diana Neto, 8B

Field trip to Escher Exhibition in Lisbon by Marta Grencho, 9B

On May 11, 2018, our 9th grade class went to visit the Escher exhibition. Escher was a Dutch graphic artist known for his woodcuts, lithographs and halftones that lived between the years 1898 and 1972. Our class arrived in Lisbon around 11:15 and went to eat the typical “pasteis de Belém”, the café was very full, since all the tourists that go there have to taste the traditional cake of Lisbon. Then we went to visit the exhibition, the group was divided into two groups with one teacher in each group. To better understand the exhibition, we were given a headset, thanks to that, the visit was even funnier and more interesting.

We all took lots of photos and tried all the experiments that this artist invented. At 1.30 pm we all went to McDonald's, a time for us all to have fun together, when we finished our lunch, we all laughed, played games, took pictures and much more in the garden of Belém until about 3pm. Then we waited for the bus ; we sang some songs and had a lot of fun. It was 4:15 p.m. by the time we reached our destination - Sintra. I think I can say for all the students in this class: WE LOVED IT !!! Thank you teacher Conceição for this great day and of course a thank you also to teacher Francisco for having accompanied us.



Escher, an artist who combines science and creativity

When you walk around Lisbon, do not forget to visit the historic area of Belém, and remember to taste the unforgettable pastel de Belém. Along the walk, you will see different monuments, memorials and museums.

whose creations are very interesting in the acquisition of scientific consciousness and had huge influence in the art world. Some cartoons and films also used graphic illusions based on Escher's work of art.

I'm going to talk about one artist: on May 11 we saw an exhibition of the Dutch graphic artist - Maurits Cornelis Escher, in the Popular Art Museum. The exhibition features 200 works by the artist, a rich set of didactic equipment and scientific experiments. The exhibition is a complete creative journey through the work of this genius,

Anastácia Lvova, 9B

“Science 4 all” Dream story of my life A collection of imagined students’ biographies. Three pupils in every partner country will describe a character and send this description to colleagues abroad, who continue a story, including education and work in science brands

I hope to be accepted in a good high school. After my graduation, I would like to study Maths and Physics to be able to develop new technologies to help archaeologists discover new sites. In order to prepare my studies. I would take advantage of the summer breaks to visit famous archaeological sites.

It would be the opportunity to know how they were built and discovered. If I am lucky I even could work with a team of scientists.

Pierre Emmanuel Juliette Jilali (France)

I ended my high school very well and now I am in a college, learning about architecture. This is very spectacular for me and I got to know a lot. Of course, this is hard but I am getting used to it. I traveled throughout Europe and I saw different sites. After graduation, I want to go to work and to live in Sweden, because they have very interesting sites. So, I am getting ready for this and soon, I will be in Sweden.

Kaire (Portugal)

I graduated from college and I arrived in Sweden. I found a job as an archaeologist studying medieval architecture in South Sweden in Eketorp. I researched local buildings and tools. During a lecture about my finds, I met my new assistant, with whom I fell in love. Two years later I proposed to her and we bought a house and we got married. Not long after the twins were born to us: Lila and Lily. When I was on holiday in Peru with my family, I discovered an ancient city by chance. It made me very famous.

Olga M (Estonia)



Pictures illustrating the work done by students for the emuseum

After that, I bought a bigger house to my family. I started to spend more time at work than with my family. My wife and I started to argue every day because of that and she was starting to be very sad because I wasn't at home with the kids. My life started to go downhill, I wasn't happy anymore. That was when I realised that my biggest dream was to build a family and then be really happy. I started to spend more time with my daughters and with my wife and everything was much better. I love my family and that's everything to me.

Diogo (Poland)



e.museum

Which job will I choose ?

This exhibition is an e-museum related to scientific jobs needing some mathematical notion. This online virtual gallery has been prepared by the students, preceded by a research on attractive professions from MST area on local and European level

http://science4all.artsteps.com/exhibitions/36968/Which_job_will_I_choose_

Exercices, games and puzzles

Pupils were asked to create digital tasks with ICT tools and apps for Maths, Science and Entrepreneurship.

The collection will include various mathematical crosswords, Sudoku, Geometric puzzles, Tangrams, etc., created in computer programmes.

<https://www.thinglink.com/scene/1014872237800423426>

Experience and enthusiasm

Portuguese and Polish students comment their mobilities

Mobility to Versailles

Hi, I'm Nelia and I'm 15 years old. Well, I did not know that I would be chosen because there were other people who deserved it, too. When I was chosen, I was very happy because I had a lot of work to do. When I arrived in France, I still wasn't believing that I had succeeded and those days while I was there, were the best days anyone could have! What struck me most of the trip to France were the friendships and the people I met from the other countries of the project. Also, the France monuments were beautiful and I confess that I fell in love with the Cathedral of Notre-Dame. I loved the French language that seems to be complicated but in the end it is a romantic language. Everything struck me because everything was different and different is good.



The Portuguese team

Maria, 9A

Going to France was an experience I will never forget! I had the opportunity to meet new people and make amazing friends. I developed communication skills and came back to Portugal way less shy. Versailles was a very beautiful place full of history and I loved the day we went to Paris. I had a wonderful time! There was no better way to end this trip with the amazing party we had. I'm very thankful for this chance I was given. It was one of the best week of my life and I will forever cherish it!



Mobility to Sintra

We had a wonderful time in Sintra though the weather was awful... I love the Oceanarium . I love the party at the end of the week and I love the food especially the Pasteis de nata !

My partner was so nice to me; I was really touched. This Erasmus+ programm is an unbelievable experience !