



Erasmus+

Scientists-Wanderers

## Education in the XXI century - innovative methods of teaching mathematics and science in the face of new challenges of technology.

### KA2 - Cooperation for Innovation and the Exchange of Good Practices Strategic Partnerships for Schools Only





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The Erasmus Plus Project (2015-2017) has involved five schools:

**POLAND (Gimnazjum nr 2 im. Jana Słomki w Tarnobrzegu);**

**FRANCE (Lycée Charles Renouvier, Prades); TURKEY (Bursa Atatürk Anadolu Lisesi);**

**CYPRUS (Pascal English School, Larnaka);**

**ITALY (IIS LS Piccolo, Capo d'Orlando)**

The common objectives have been:

- Expanding the knowledge and skills of students in the field of science and of teachers in the field of professional culture
- Increasing students' motivation to learn science and to work in cooperation within international groups, overcoming the barrier language and with an open-minded disposition to the knowledge of other cultures and traditions
- Improving the quality and functionality of classrooms as well as the teaching methods and resources
- Acquiring knowledge about the demand for labor markets, including competition and employment opportunities - which will facilitate students the choice of suitable courses of education at a higher level
- Strengthening cooperation with local schools through establishing cooperation with employers, occupational sectors representatives of the professions.



The Project work throughout the two years and until the final product has deeply increased: intellectual curiosity, scientific attraction, will of challenging researches, problem solving frame of mind, ambition of fulfilling didactic and meta-cultural objectives. Every country has its own specific final product to realize, that is a brochure collecting the works of the partners for the four semesters of the whole project on a peculiar field. As regards the final product for Italy, it is a brochure with the title taken from the **A5 SECTION: "Scientists-wanderers", with lesson plans carried out "in the field"** by all schools during the project, as an attachment modifying school curricula in science in a way that some of the planned activities will be implemented in the field. The project group has educated the students to:

- ✓ awareness of the importance of the European dimension;
- ✓ respect of the others in a daily well-built context of mutual understanding;
- ✓ importance of synergetic team work in order to achieve common goals;
- ✓ willingness of overcoming personal and social limits
- ✓ interpretation of the reality in a scientific key starting from the assumption that the rules of Math, Physics, Science, Chemistry and Biology are the basis of life
- ✓ implementing the interdisciplinary ability for the resolution of real and concrete problems
- ✓ gradual improving of mental skills and reasoning abilities
- ✓ relational, comparative, interactive synergy work





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## ITALY A5 FIRST SEMESTER

According to the Legislative Decree n.81 of April 9th 2008, Article 37, the students have followed a training course on the importance of Health and Security on the working places.

This course took place in the gym of the IIS LS Piccolo of Capo d' Orlando.

It marked the starting moment of a very formative and challenging period of working training experience for the students of the third and fourth year of our school.



The students had a very interesting and motivating period of one week, "School-Job Alternation" (40 hours for the third classes and 30 hours for the fourth classes).

The students chose to work as apprentices in Dentists' and Doctors' Studios





## in Blood and Test Diagnosis Labs



## in Hotels





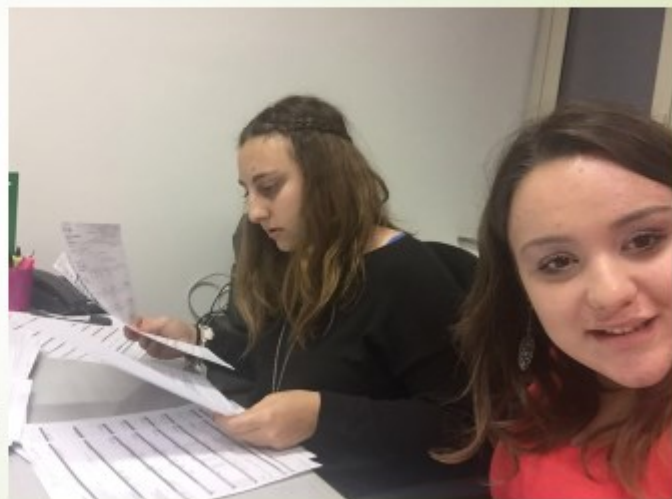
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## Shipyards



## Architects' and Notary's Studios





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## ITALY A5 SECOND SEMESTER



Having come to its second edition, *Capo d'Orlando for World Earth Day* has been a symbolic event for a campaign of protection of the earth natural resources and also an important event to find solutions in favour of a much eco-friendlier lifestyle.





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On the 22<sup>nd</sup>, 23<sup>rd</sup>, 24<sup>th</sup> of April, specific areas have been the hosting location for such an important event: Matteotti Square, the pedestrian area, the suburban park of Scafa, the little lake and the beautiful atmosphere of the famous Bastione Castle.

The event has been organized by the «*Kind with the Earth*» Association, together with Sport, Tourism and Entertainment Department, the Town Hall of Capo d' Orlando with the contribution and involvement of...



Teachers and students of the IPAA section of IIS LS PICCOLO of Capo d' Orlando



Volunteers, Univerisity teachers, cultural associations, artists, artisans, farmers, local producers

Many meetings and appointments for planting and seeding labs, synergy vegetable gardens, markets of recycle and re-usage, long walks in the silence and peace of nature....



Open Debates about



Renewable Energies and Ecology

Permanent Agriculture and Culture

A great occasion to promote a more sustainable, gentler and cleaner use of Earth Energies with



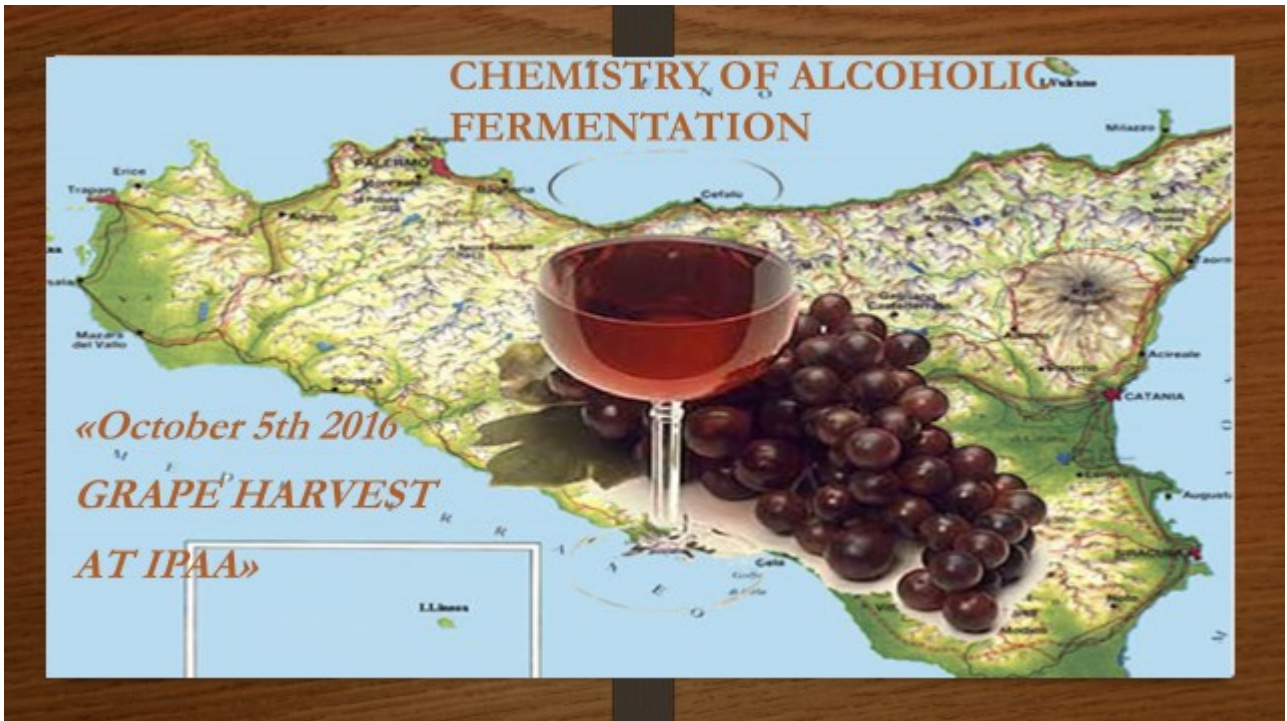
Theme Parks for kids




Cultural Events  
Green Laboratories





# ITALY A5 THIRD SEMESTER





The students were carefully prepared both in the rooms and *«in the field»*, with a patient work of historical, chemical and practical training. All started with a brief shift in time.....

The students and the chemistry teachers of IPAA realised the «Grape Harvest», on the 5th of October 2016. After weeks of study, preparation, theory and practice, finally the best fermented product which the School is really proud of: hand made wine.

...to discover the origins of a very special fermented drink...



Information about wine traced back to the Assyrian times (about 3500 BC) and, from then on, wine spread throughout the whole Mediterranean territories.

The transformation of sugary beverages into alcoholic drinks, and in particular, of the grape must into wine, was called *fermentation* (from Latin *fervere* = to boil).



The phenomenon attracted the attention of Chemists, naturalists and alchemists in the Middle Ages. And through the *Still*, first used by the Arabs in the 11 BC, it was possible to separate alcohol from wine.



In 1789 Lavoisier proved that sugar was transformed into alcohol during alcohol fermentation.



And in 1813 Gay-Lussac established the process through the equation  $C_6H_{12}O_6 \longrightarrow 2C_2H_5OH + 2CO_2$



Other information about alcohol fermentation were diffused in the XIX<sup>th</sup> century by the French Caignard-Latour (left) and the German Schwan (right) who both labelled the fermentation agent by the name of *yeast cell*, and later *yeast*, from Latin *levare* = to ferment.





The grape ripening is verified,  
 with the perfect balance  
 of all the components  
 decreasing of acidity,  
 increasing of sugary level,  
 enriching of  
 aromatic components,  
 softening of polyphenols –  
 responsible of  
 the red wine's tannic feature –



Now students  
 and teachers  
 can proceed  
 with the harvest



and grapes are picked manually



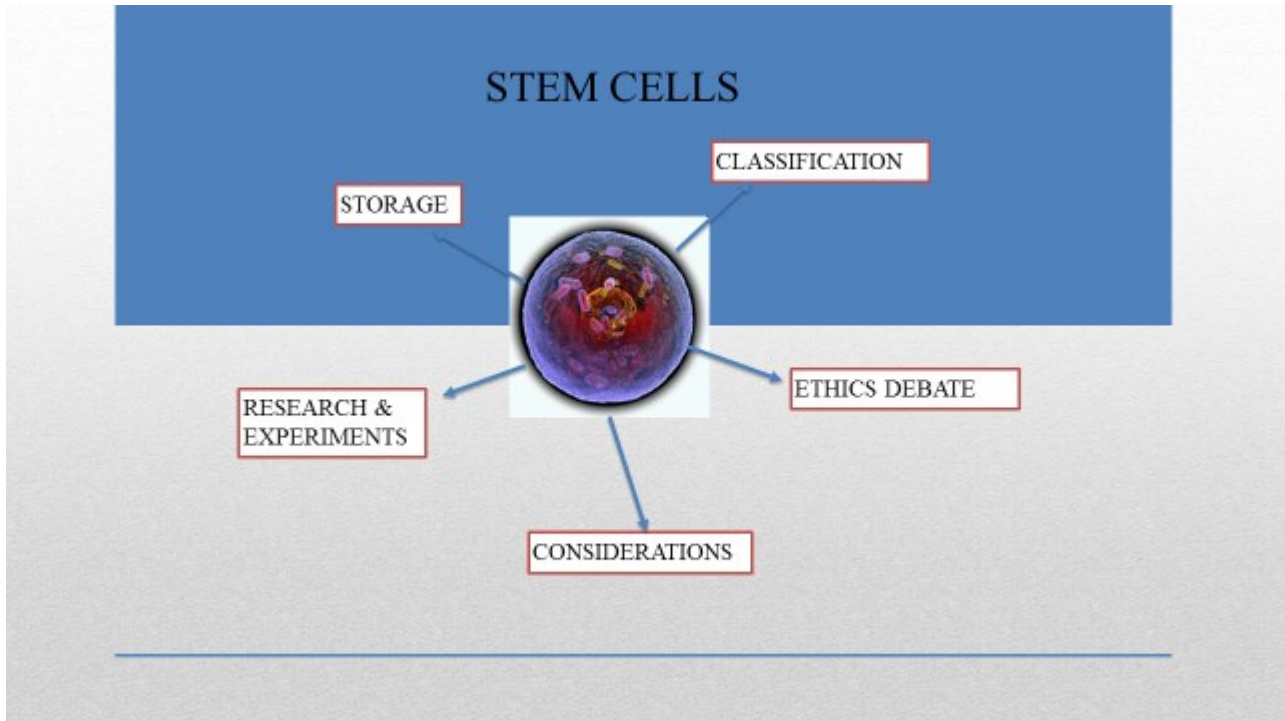
They check the sugary degree of the grapes with a specific tool, the «Babo» must gauge in order to establish the probable future alcoholic level



Here is the teacher in the lab, while trying to determine the real sourness or PH of the wine of our production by Amola Firm with a «Pot-Potentiometer» method.



## ITALY A5 FOURTH SEMESTER



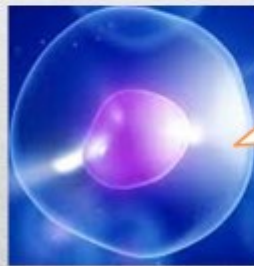
**They are primitive cells, non-specialized, able to differentiate in approximately 200 different cell types that make up our body. Neurons, skin cells, muscle cells, bone cells, liver cells and so on.**







- We can compare the stem cell to a baby cell that has not decided yet what to do when it grows up. Once it has decided what to do and then the role it will play in the body, the stem cell specializes through a process called differentiation.



Which genes should I activate?



## Application in medical field

Concerning the medical field, Stem cells could be used for many purposes but, with exception of those therapy based on hematopoietic stem cells, at the moment, in the clinical practice no other treatment is based on these cells (only some animal trials)

However, adult stem cells have been clinically tested and can give us a huge hope concerning the possibility of future therapy regarding:

- degenerative diseases of the nervous system ( Parkinson's disease, Alzheimer's disease, multiple sclerosis)
- reconstruction of the spinal cord damaged by physical trauma.
- musculo-skeletal diseases
- cardiac tissue reconstruction (following an infarct)



## What about Italy?

- A particular case concerns Italy.
  - according to the Italian law it is allowed the utilization on already derived lineages which can be exchanged and imported in case of collaboration between different countries but the funding to allow researches is denied.
  - The Italian law does not allow to make experiments on embryos and human clonation (therapeutic and reproductive)
- 
- We can differentiate 3 different types
    1. Stem cells donated by adult individuals (in the case of juvenile age it's fundamental to have the parental consense)
    2. stem cells taken from "waste tissues", such as in the case of the umbilical cord; in this case it is mandatory to have the parent's authorization.
    3. In the case of abortion the mother can give her consensus regarding the donation of "abortion material"





## Reason to say either YES or NOT

### REASON TO SAY YES

- The embryo is not yet an individual
- It is available “biological Material” which can be used to improve knowledges and experimentations
- Thanks to the acquired knowledge it would be possible to treat untreatable diseases (Alzheimer, Parkinson, dystrophies, etc)

### REASON TO SAY NO

- The Embryo already is a human being
- “It” has the right of life, it is not “available material” although it can be used for advancement of knowledges
- ESC sample requires the embryo’s death, therefore it is unacceptable.
- a knowledge improvement could be reached also through experiments on adult stem cells





## Presentation PROMES

- The site is located in Odeillo
- It is a clean unit attached to the CNRS Institute of Engineering Sciences and Systems ( ISIS ) .
- It is located in three places :
  - Odeillo (Four solaire)
  - Targasonne (Thémis)
  - Perpignan (Tecnosud)



## Presentation areas

- It is composed of two axes
  - Materials and extreme conditions
  - Conversion , storage, transport of energy





## Number of researchers

- Fifteen researchers between Odeillo and Perpignan



## Ongoing Developments

- The data on current research are confidential





## FRANCE A5 SECOND SEMESTER

### Thémis Pégase

- 1. Présentation
- 2. Où elle se trouve?
- 3. Au cours du temps
- 4. Le projet Pégase
- 5. Nombre d'employés

## Présentation

THÉMIS EST UN CENTRE DE RECHERCHE ET DE DÉVELOPPEMENT CONSACRÉ À L'ÉNERGIE SOLAIRE AINSI QU'UNE CENTRALE SOLAIRE THERMODYNAMIQUE PRODUISANT DE L'ÉLECTRICITÉ POUR LE RÉSEAU ÉLECTRICITÉ DE FRANCE (EDF). ELLE EST SITUÉE EN CERDAGNE À TARGASSONNE DANS LES PYRÉNÉES-ORIENTALES.

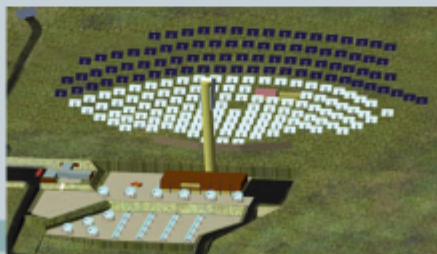




## Où elle se trouve ?



- La centrale de Thémis, propriété du Conseil général des Pyrénées-Orientales, a été implantée stratégiquement en Cerdagne, pour ses conditions météorologiques qui sont très favorables au développement de l'utilisation de l'énergie solaire. La Cerdagne bénéficie d'une exposition de près de 2 400 heures de soleil par an, un vent très faible limitant les temps de non-fonctionnement des installations de la centrale, et se situe à une altitude (1 650 à 1 690 m) favorisant la réception du rayonnement solaire direct. L'inclinaison du terrain choisi pour la centrale se situe entre 6° et 18°, idéale pour une centrale à tour.



## Au cours du temps ...



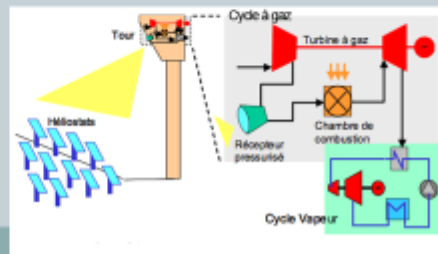
- L'opération THEMIS-PV, portée par l'entreprise SUNERGIE, a pour objectif de réaliser une puissante centrale solaire photovoltaïque : 80 héliostats équipés de 8,8 kWc chacun, produisant annuellement plus de 800 MWh, ce qui correspond à la consommation annuelle d'environ 500 foyers. L'électricité est revendue à EDF. La mise en place de ce projet est prévue en 2 phases :
- phase 1 (2007) : équipement de 4 héliostats pilotes afin de permettre d'établir les conditions techniques et économiques de définition, conception, mise en œuvre et validation du projet THÉMIS-PV ; les premiers kWh ont ainsi été produits dès octobre 2007 ;
- phase 2 (2012) : équipement et mise en fonctionnement des 80 héliostats.





## Le projet Pégase

- Il s'agit de produire de l'électricité à partir de l'énergie solaire en utilisant de l'air comprimé (à une pression de l'ordre de 6-8 atmosphères) réchauffé dans un récepteur solaire et détendu ensuite dans une turbine (principe des turbines à gaz).
- L'ensemble sera installé en haut de la tour de Thémis La puissance de ce démonstrateur (centrale expérimentale) sera de 1,6 MW environ.



## Nombre d'employés

- Il y a 20-25 employés a Thémis mais ils ne travaillent pas à plein temps car ils ont des missions dans d'autres pays.





## FRANCE A5 THIRD SEMESTER



- **Airbus Helicopters** is the world's leading helicopter manufacturer offering the most comprehensive range of civil and military helicopters in the world.

Airbus Helicopters is part of Airbus Group, a global leader in aeronautics, space and related services.

## Company Presentation



# AIRBUS

## HELICOPTERS

- Airbus Helicopters (formerly Eurocopter Group) is the helicopter manufacturing division of Airbus Group. It is the largest in the industry in terms of revenues and turbine helicopter deliveries. Its head office is located at Marseille Provence Airport in Marignane, France. The main facilities of Airbus Helicopters are at its headquarters in Marignane, France and in Donauwörth, Germany, with additional production plants in Brazil (Itajubá, MG), Australia, Spain and the United States. The company was renamed Airbus Helicopters on 2 January 2014.



## Display products



- EC145

The EC145 is at the top of its class in the medium-sized, twin-engine helicopter category, incorporating Airbus Helicopters' advanced cockpit design, avionics and a sophisticated electrical system.

The aircraft is a member of the proven EC145 family, which today has logged over one million flight hours with its fleet of more than 650 aircraft worldwide.



## AS365 N3+

- The AS365 N3+ is a member of Airbus Helicopters' medium weight Dauphin family of helicopters.

Some 700 twin-engine Dauphins have been delivered for civil use in more than 60 countries with nearly 200 operators. Together these helicopters have accumulated around 4 million flight hours





## H225M



Designed for the most demanding missions, the H225M's reliability and durability have been demonstrated in combat conditions and crisis areas that include Lebanon, Afghanistan, Chad, Ivory Coast, Central African Republic, Somalia and Mali, while also supporting NATO-led operations in Libya. The H225M is relied upon by France, Brazil, Mexico, Malaysia, Indonesia, and Thailand to support them in their most demanding missions.

As the latest member of Airbus Helicopters' military Super Puma/Cougar family, this 11-metric-ton helicopter, previously named the EC725, is ready for multiple missions.

## Tiger HAD



The Tiger HAD is Airbus Helicopter's multi-role attack helicopter. It is designed to perform armed reconnaissance, air or ground escort, air-to-air combat, ground firing support, destruction and anti-tank warfare, day or night and in adverse conditions.

The Tiger attack helicopter has proven its capabilities during operational deployments in Afghanistan, the Central African Republic, Somalia, Libya and Mali. The enhanced Tiger HAD variant provides air-to-ground missile capability, improved target acquisition and ballistic protection, 14 percent more power, an evolved electronic warfare suite, and the latest interrogation systems.



## Development phases of a Helicopter



To better serve its customers, the company has recently engaged in a global transformation plan which provides for the replacement of existing operating systems by the latest digital tools. In this context, Airbus Helicopters was particularly interested to develop a powerful solution for planning of factories and workshops, which would allow it to reduce time to market while improving operational efficiency. With this solution, Airbus Helicopters can model, plan, implement and share best practices, processes and products in a virtual environment, throughout the design, engineering, manufacturing and delivery of its helicopters, whether new or existing. With the execution of simulation and process validation operations in a virtual manufacturing environment, the group can define and implement manufacturing practice "lean" that improve the performance of its programs.



Until then executed separately global operations production management, quality, labor and supply chains are now synchronized to a coordinated data flow. Procurement and sub-assembly of the basic components to the final assembly line, a common digital platform provides visibility and real-time control required to optimize business processes. The analytical functions of the digital factory Helicopters enable Airbus to assess the impact of engineering changes and so quickly solve any production problems.

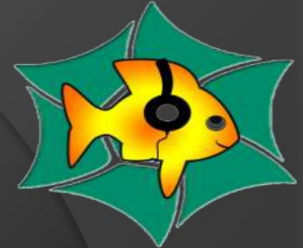


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## FRANCE A5 FOURTH SEMESTER

# AUDIOMAR



Forest Aydoner Blanque Rouffia Amato



## Présentation du projet

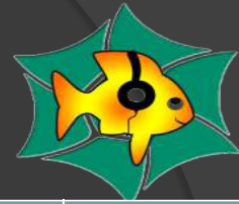


- Le but de notre projet est d'intégrer un audio guide sur un masque faciale





# Critères



- Bonne autonomie
- Relativement léger
- Peu encombrants
- Recharge facile
- Changement de piste facile
- Prix < 100€

	Criteres	Explications
Autonomie	7-8 heures	Permettre a la réserve marine de minimiser le nombre d'achats de mp3
Poids	<200g	Ne doit pas gêner le nageur dans sa découverte marine
Encombrement	Ne doit pas dépasser 1/10 de la taille du masque	Ne doit pas gêner le nageur dans sa découverte marine
Recharge	Recharge facile	Rechargement par port jack, la durée de charge est de 3 heures pour une charge maximale.
Accessibilité	Accessibilité aux boutons facilement	Le nageur doit pouvoir changer de pistes sans problèmes ce qui n'est pas le cas avec ce mp3
Prix	<100€	Ne pas être trop cher car un grand nombre de mp3 sera acheté

# I. Etude Préliminaire



## SUPPORT MP3

- Doit s'installer /désinstaller facilement
- Hydrodynamique
- Longueur : <9cm
- Poids : <200g



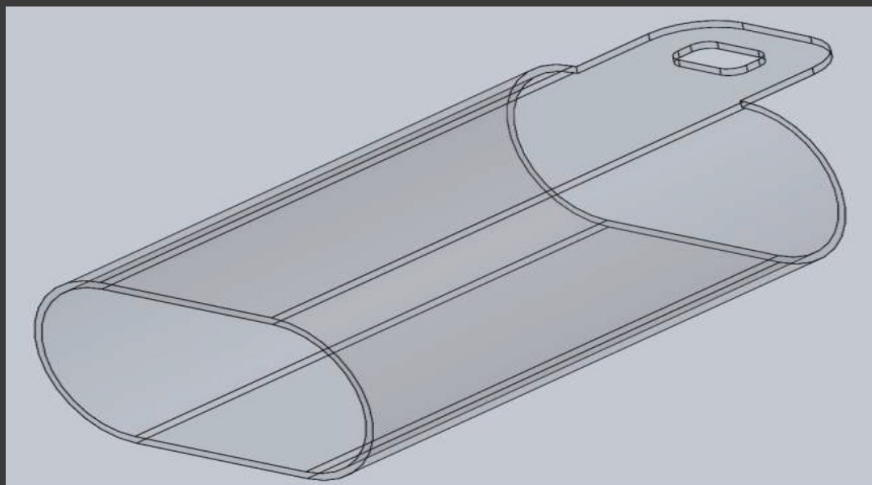
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## Modélisation numérique (Scan 3D)



## Modélisation du tuba Solidworks



Modélisation tuba :  
Maxence Amato





# Sustainability



## Acidification de l'air



3.8E-4 kg SO<sub>2</sub>e

Matériau:	2.0E-4 kg SO <sub>2</sub> e
Fabrication:	1.8E-4 kg SO <sub>2</sub> e
Transport:	5.0E-7 kg SO <sub>2</sub> e
Fin de vie:	1.3E-6 kg SO <sub>2</sub> e

## Eutrophisation de l'eau



4.2E-5 kg PO<sub>4</sub>e

Matériau:	3.5E-5 kg PO <sub>4</sub> e
Fabrication:	6.6E-6 kg PO <sub>4</sub> e
Transport:	1.1E-7 kg PO <sub>4</sub> e
Fin de vie:	2.8E-7 kg PO <sub>4</sub> e

Impact environnemental

# Choix des matériaux



- L'ABS (Acrylonitrile-butadiène-styrène) :
  - Solide
  - Résistant
  - Facile a mouler
  - Normalement opaque, mais certains transparent
  - On peut lui donner la couleur que on veut.
  - Alliages ABS-PVC plus solides que les ABS standards.
- **Composition :**
  - (CH<sub>2</sub>-CH-C<sub>6</sub>H<sub>4</sub>)<sub>n</sub>





## POLAND A5 FIRST SEMESTER

### We liquidate the wild landfills Fieldwork as part of the cleaning world

- „ Expedition - improvement "- under this slogan was launched this year's action Clean up the world - Poland. As part of this year's campaign, we draw attention to the role that each of us can play in the creation and operation of a municipal waste management system.





## Waste groups / types of garbage

- I-Tins, scissors, metal cans, scraps, caps, metal parts of various devices.
- II- Jars, glass bottles, broken plates.
- III- Plastic bottles, sweet packaging, polystyrene, handbags, spoiled toys.
- IV- Objects of wood, paper, cardboard , Etc.
- V- Rags, old clothes, shoes.
- VI- Other packaging after aerosols, paints, varnishes, oils, lubricants.

## How long does the „waste" live in the soil?

- Sheet of paper A5 → 3 - 5 months
- Fruits and vegetables → 3 - 12 months
- Chewing gum → 5 years
- Aluminum box → 400 years old
- Plastic bottle → 800 years old
- Glass bottle → 4000 years old



## Trash - Waste

### cons

- Burning pollutes the air with compounds and dust.
- Trash can be a source of groundwater poisoning, they occupy large areas.
- Decaying remnants can cause spontaneous combustion, polluting the air with poisonous compounds.
- Recycling - big trouble with collection and transport.

### pros

- Energy for biogas power plants.
- Rescue the environment.
- Composting the backyard and the landfill.
- Compost, fertilizer for growing plants, fertilizing green.

## You can reduce the amount of rubbish!

- Use reusable packaging. Avoid disposable ones.
- Choose products that do not have unused packaging.
- Do not use disposable bags.
- Use rechargeable batteries instead.
- Use items as long as possible.
- Give away unnecessary things such as books, records, old equipment, TVs needed for people like children's homes.
- Choose reusable products.
- Segregate waste.

Everything you do is about the environment!



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## POLAND A5 SECOND SEMESTER

### We examine the purity of air

#### TASK 1

- **We examine the air dustiness**

Paste two pieces of colorless adhesive tape onto the twig of the selected tree (each at a different location in the tree). Carefully peel the tape off the twigs and glue them in the scorecard windows. Under the table, record the results of the observation and determine the source of the dust by looking at the color of the sticky tape: black carbon dust, light ash dust, brown metal dust.





## Task 2

- **We investigate the acidity of the deposited dirt.**

Dampen the cotton swab with water. Wash sediment out of twigs (in two different places in the tree). Rinse the cotton wool in jars of water. Stir the water, wait a few minutes for a better dissolution of the precipitate. Then from the jar # 1, pour the water in half of the first tube. Add 3 drops of pH 4.5-9, mix the contents of the sample to a uniform color of the solution, compare the color of the sample with the color scale bands on the pattern. Save the results in the table. Do the same with the water from the second jar. Enter data into the table.





- **Task 3: We determine air pollution with sulfur oxide, using a lichen scale.**

Watch the tree trunk, look for species of lichen (pattern-scale lichen). Enter recognized lichen names, sulfur oxide concentration and contamination zone.

- **Task 4: Specify the places of lichen incidence by typing "+" in the appropriate place in the table.**

Kind of subsoil	Presence of lichen	Kind of mold		
		Froncosa	Bushy	Crusty
Tree bark				
Soil				
Boulders, fence				
Other places				







## Summary

- On the basis of the quantity and quality of the lichen we find that our school is dominated by zones 2, 3 - called "combat zones". Lichens fight for survival in polluted environment. Dominant are the most resistant crustaceans (cups) and powdered (lichen).
- The lichen characteristic of Zone 4 is lurking, lichen (kestrel).
- Large amounts of dust deposited on the leaves come from motor vehicles moving along a busy street along our school grounds.



## POLAND A5 THIRD SEMESTER

# Tarnobrzekie Lake the great environmental transformation

In the south of Poland, in Sandomierska Valley, on the right side of Vistula river lies Tarnobrzeg. The town was founded in 1593 by Tarnowscy family.

Tarnobrzeg occupies 86 km<sup>2</sup>. About 50 thousands people live there. The town has developed right after the II WW as sulphur mining centre. Until recently, it was the most important sulphur mining and sulphur acid production centre. It is known as «the capital of Polish sulphur mining industry.»



### Chemical plant «Siarkopol» and its products:

Sulfur - is used:

- for the production of artificial fertilizers
- for the production of black powder and fireworks,
- as a means of controlling plant parasites
- for the manufacture of medicaments, pesticides, matches, paper,
- for vulcanization of rubber.





**Sulfuric acid** - It serves, inter alia, for the production of other acids, for the production of dyes, fertilizers and artificial fibers, explosives.

**Bleaching soil** - used for the refining of oils, vegetable and animal fats and for the removal of color impurities from petroleum substances.

**Fluorine gases** - used in the manufacture of monomers, fluorinated alkenes, from which Teflon and its derivatives are obtained.

**Hydrogen fluoride** - Used for etching glass.

**Battery acid** - serves as an electrolyte for filling lead batteries.



### Sulfur Mine "Machów" and Chemical Plant "Siarkopol,,

They played a very important role for our environment.

They had and have an impact on the development of our city and people's lives because:

- they gave the work of thousands of inhabitants of our city and its environs,
- thanks to them, the city has developed,
- founded many cultural, sports and educational centers,
- were the main investors, including: our school – Secondary School No 2, Siarkowiec housing estate, sports facilities in Tarnobrzeg, Baranów Sandomierski Castle was rebuilt and restored.

At the end of 1992, the extraction of sulfur was completed in the "Machów" exploration and the mine was liquidated





Liquidation and reclamation work  
- Sulfur mine "Machów"

- restored the usable and natural values of the devastated areas
- they made the environment better
- returned once destroyed flora and fauna
- residents have acquired grounds for rest
- water sports are developing
- tourism is developing.

Today, only boards inform about the old mine.



At the mine site was created artificial water reservoir for recreation.





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Lake Tarnobrzeskie became very attractive:  
for diving and windsurfing



Today, the youth learns from albums and views  
about this great transformation of the environment ...





## POLAND A5 FOURTH SEMESTER

### Topic: A field trip to the Pepper Mountains

**Aims:** learn about natural values of the nearest area (the Vistula River Valley near Sandomierz, fauna and flora, geological structure of the region, consolidation of the rules to obey in protected natural sites, cooperation in a group, interdisciplinary learning.

1. Leaving for Sandomierz, the Pepper Mountains
2. Meeting with the tourist guide
3. Walking along the red tourist track through the Pepper Mountains landscape park
4. Identifying the rocks which formed these mountains
5. Identifying plants that grow there
6. Distinguishing the features of a river valley
7. Observing the surrounding nature
8. Coming back to school





### Description of the activity

Students of the class 2c with the teachers went on a field trip to the Pepper Mountains. The guide led the group along the red tourist track through the Pepper Mountains landscape park. From the start, she reminded the students about the rules that must be obeyed in in protected natural sites. During the field trip, students learned about geological structure of the region. They also identified the rocks wich form the edge of Kielecko-Sandomierska Upland (f.ex. Cambrian slates an loess) and the plants growing on the mountains.



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The distinguishing traits are wild roses and water caltrop-which was not visible due to high water level after heavy rains- and steppe plants. While walking along the left bank of the Vistula , students identified the features of a river valley such as river terraces, river bed and old river bed. The effort of climbing up the mountains and going down was rewarded by picturesque views and the birds singing for which the place is a real paradise. At the same time, students learned about the job of a tourist guide.





## TURKEY A5 FIRST SEMESTER

### MARBLING TRADITIONAL TURKISH ART

#### THE ART OF *EBRU*

Another feature is that the art of marbling of traditional Turkish handicrafts.

Another into the past, but with no history of fixed colors and shapes look to be distinguished from "Ebru" is called.

Ebru art, it was decorated with water sprinkled on the liquid paint random shapes and figures in this paper, is transferred from the place by the figures on display for intervention.



#### THE ART OF *ÇINI*



It is piece of earthenware decorated with opaque colored glazes and motifs that are characteristic of Turkish art (It resembles faience or majolica.)

Since 14th century, Kütahya tiles are manufactured to the present day, high-quality production of İznik tiles making provision for capital and palace Kütahya tiles, designed to meet the needs of the population, and has continued the tradition of Anatolian tiles.



Interconnected pieces of colored glass placed in compartments lead transparent window decoration occurring.

- We visited Stained-glass' workshop.
- Lecturer told about Stained-glass to us.





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We observed some works there.





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## TURKEY A5 SECOND SEMESTER

### VOLCANO PRESENTATION

#### Our Early Preparation

First we talked about our materials



We talked about how we do it then we have idea.





## Building a volcano

### Materials

- Plastic glass
- Plastic dish
- Carbonate
- Red food dye
- Water
- Acetic Acid



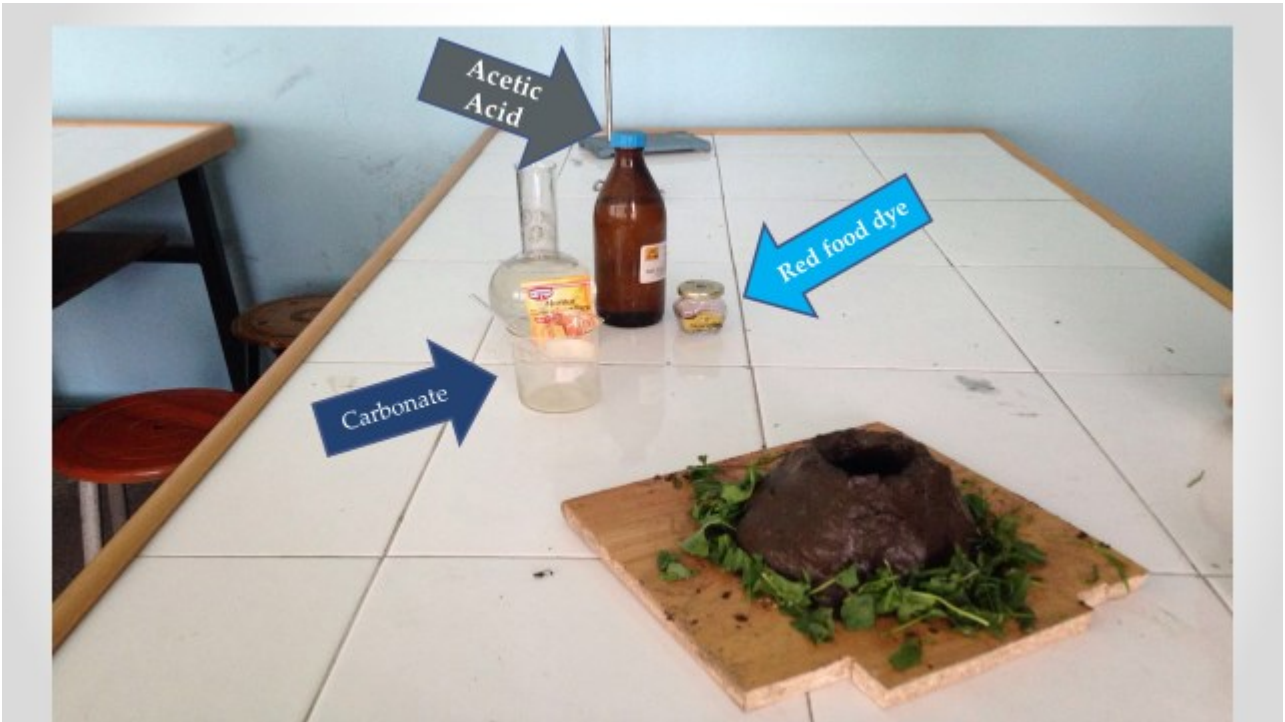
We gathered our needed materials.





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## TURKEY A5 THIRD SEMESTER

**ERASMUS + PROJESİ**  
**ETKİNLİK – DERS FAALİYET RAPORU**  
**ACTIVITY/ LESSON REPORT**

<b>Tarih:</b> <b>Date</b>	<b>22.10.2016</b>
<b>Dersin Adı:</b> <b>Lesson</b>	Biology-Maths – Chemistry
<b>Etkinliğin Adı :</b> <b>Name of Activity</b>	<b>CALCULATING THE CALORIES OF CERTAIN TYPES OF FOOD</b>
<b>Etkinliğin Lideri</b> <b>Leader of Activity</b>	Nurcan METİN
<b>Etkinliğin Amacı:</b> <b>Objectives of the Activity</b>	<ul style="list-style-type: none"><li>▪ Understanding the importance of healthy eating</li><li>▪ Calculating the calories of certain types of food and comparing them with respect to the enzymes they contain.</li><li>▪ Evaluation of the calorie amounts in different foods and drinks, and comparing them according to energy amounts that they include</li><li>▪ In this way, providing students to use these informations in their daily life for eating healthy food</li></ul>
<b>Etkinliğin İçeriği:</b> <b>Content of the Activity</b>	<p>*the amounts of calory per 100g of the different types of food the students brought were measured:</p> <ul style="list-style-type: none"><li>○ milk: 64 cal</li><li>○ phyllo: 154 cal</li><li>○ tomato: 22 cal</li><li>○ cheese: 350 cal</li><li>○ biscuit: 420 cal</li><li>○ banana: 85 cal</li><li>○ chocolate: 528 cal</li><li>○ green peas: 84 cal</li><li>○ orange: 76 cal</li><li>○ pasta: 365 cal</li><li>○ carrot: 42 cal</li></ul>



	<ul style="list-style-type: none"><li>○ strawberry: 37 cal</li><li>○ cheddar cheese:349,</li><li>○ peas:84,</li><li>○ yoghurt:61,</li><li>○ honey:315</li></ul> <p><b><u>ENERGY VALUES OF THE NUTRITION;</u></b> *FATTY YOGURT (100 GRAM)=61 K.CAL *HALF RING-SHAPED BREAD=150 K.CAL *CHEESE=200 K.CAL *PLUM=65 K.CAL *WHITE BREAD=120 K.CAL *CUCUMBER=35 K.CAL</p>
<p><b>Sonuçlar ve Değerlendirme:</b></p> <p><b>Results and Evaluation of theActivity</b></p>	<p>The balance between calorie intake and burning is very important for a healthy life. The calorie amount that the human body needs is connected to individuals' weight and their job. Childrens needs for calorie is more than adults. Because, nutrients transformation to energy is faster in children (their metabolisms are fast) As a result of the lab working, students learnt the calorie amounts in food, so they will be more conscious while they eat.</p> <p>The energy given to the body by the food we take is called 'calory'. This energy is released by the burning of the food taken. Different types of food possess different amounts of energy depending on the protein, fat and carbonhydrates they contain. It's crucial for a healthy life to set up the balance between the calory taken and burnt. The amount of calory a body needs is related to its weight and the work it does.</p>

Teacher's Name : Mr. Bayram Bulut - Mrs. Nurcan Metin - Mr. Nevzat BÜYÜK



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## CYPRUS A5 FIRST SEMESTER

### Visit to Archimedes Museum Limassol

**Event:** Science related excursion

**Venue:** Archimedes Museum (Limassol)

**Date:** 13 November 2015

#### **Description:**

Pupils were taken to Archimedes Museum in Limassol with the aim to be entertained, educated, and fueled by passion for science and technology. At the museum's premises, pupils learned through play, but also through a special educational program, with two cartoons on the history of Archimedes and the ancient machines. With the help of a quiz and a multiple choice questionnaire the students were able to recognize the ancient machines and their use in our everyday life.

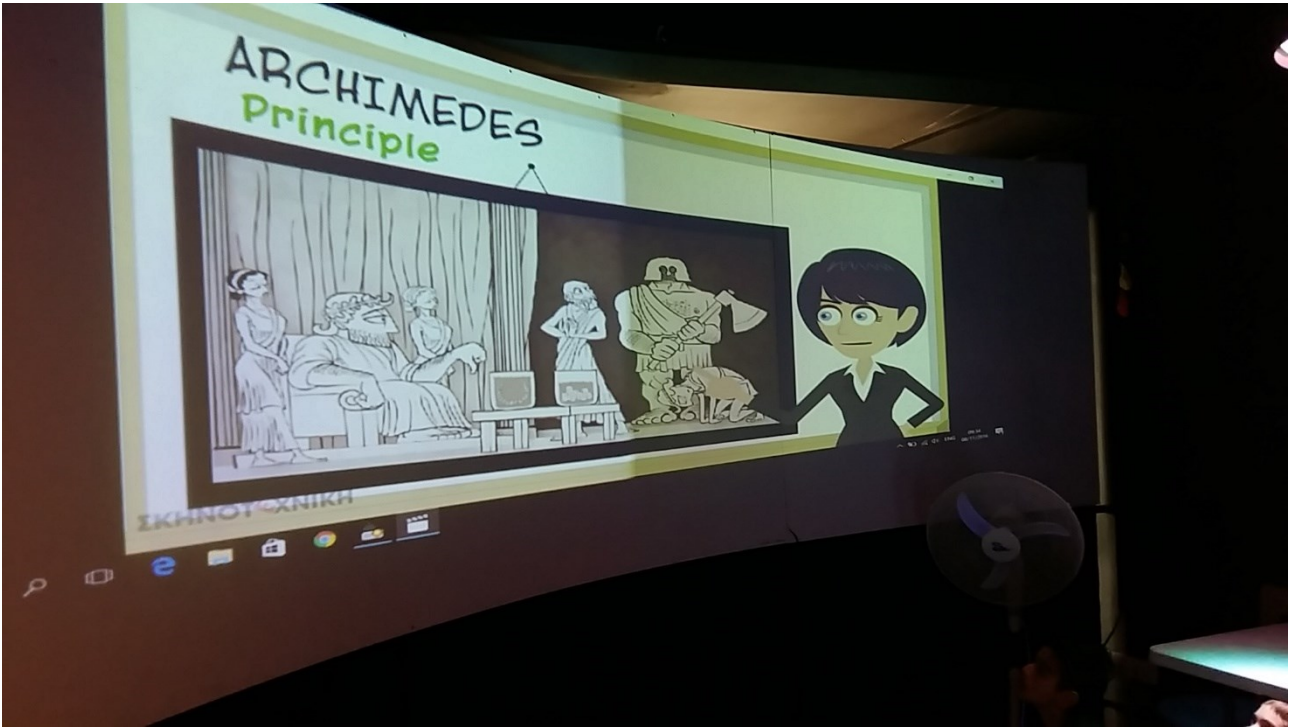
#### **Attached:**

Photos



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# CYPRUS A5 SECOND SEMESTER



## Scientists as Travelers

### Beach Clean-up at Gold Fish Beach

26 May 2016

On Thursday 26 May 2016, 50 students of Class 2 and 4 teachers carried out a beach clean-up of Oroklini beach east of "Gold Fish Restaurant".



This activity was carried out as part of the European ERASMUS+ 2015-2017 project under the section "Scientists as Travelers" and in cooperation with the NGO "AKTI" and the Oroklini Municipality.



Under the guidance of their teachers and the representatives of "AKTI" students of collected trash

from a 500m stretch of beach and recorded all the items collected for use in statistical research by "AKTI".



A detailed analysis of the garbage collected I presented in the table on the right. More information may be found at the AKTI Marine Litter Database using the following link:

<http://www.marlitcy.eu/marine-litter-database.html#23>

Our aim for this activity was, not just the cleaning of this particular beach but mainly to raise awareness among our students, something which we hope will contribute to a change of attitude regarding pollution in our country.



#### MOST LIKELY TO FIND ITEMS

Cigarette butts	407
Food wrappers	53
Take out containers plastic	17
Bottle caps plastic	161
Bottle caps metal	3
Lids plastic	16
Straws	131
Forks knives spoons	11
Beverage bottles plastic	9
Beverage bottles glass	6
Beverage cans	16
Grocery bags plastic	61
Other plastic bags	19
Paper bags	1
Cups plates paper	1
Cups plates plastic	23
Cups plates foam	10

#### FISHING GEAR

Fishing net pieces	3
Rope	2

#### PACKAGING MATERIALS

Other plastic foam packaging	62
Other plastic bottles	1
Strapping bands	3
Tobacco packaging wrap	4

#### PERSONAL HYGIENE

Condoms	20
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#### TINY TRASH LESS THAN 2.5CM:

Foam pieces	17
Glass pieces	2
Plastic pieces	71





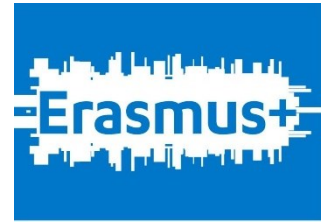
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## LETTER TO PARENTS



**PASCAL**  
English School  
LARNAKA



20 May 2016

Dear parents

On Thursday 26 May 2016 at 8:00 am, our school is organizing a beach clean-up at Oroklini beach East of “Goldfish Restaurant” in which students of Form 2 will take part.

This activity is conducted under the framework the European Union project ERASMUS+ (2015-2017) in which, as you may have heard our school is participating, and in cooperation with the non-governmental organization “AKTI” and Oroklini Municipality.

Under the guidance of their teachers and the representatives of “AKTI” students will record all the trash collected for use in statistical analysis and will be informed regarding marine and shore pollution. Our aim is not just the cleaning of this particular beach but mainly to raise awareness among young children something which we hope will contribute to a change of attitude in our country.

Your children must come to school on time as normal and not in school uniform but with clothes suitable to the purpose. We are informing you that students will not be allowed to swim. Please ensure that they wear closed shoes and that they also have with them a hat.

Thanking you for your cooperation

Elias Kamaratos

Teacher of Geography

ERASMUS+ Coordinator



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**PASCAL**  
English School  
LARNAKA



20 Μαΐου 2016

Αγαπητοί γονείς,

Την Πέμπτη 26 Μαΐου 2016 στις 8:00 π.μ., το σχολείο μας διοργανώνει καθαρισμό της παραλίας Ορόκλινης ανατολικά από το «Χρυσό Ψάρι» στον οποίο θα λάβουν μέρος οι μαθητές της Β' Γυμνασίου.

Ο δραστηριότητα αυτή γίνεται στα πλαίσια του Ευρωπαϊκού προγράμματος ERASMUS+ (2015-2017) στο οποίο, όπως ίσως γνωρίζετε, συμμετέχει το σχολείο μας και σε συνεργασία με την μη κυβερνητική οργάνωση «ΑΚΤΗ» και το κοινοτικό Συμβούλιο Ορόκλινης.

Με την καθοδήγηση των καθηγητών τους και των αντιπροσώπων της «ΑΚΤΗΣ» τα παιδιά σας θα καταγράψουν τα σκουπίδια που θα συλλέξουν για σκοπούς στατιστικής μελέτης και θα ενημερωθούν για την ρύπανση των θαλασσών και ακτών. Σκοπός μας είναι όχι μόνο ο καθαρισμός της εν λόγω παραλίας αλλά κυριοτέρως η ευαισθητοποίηση των παιδιών που ευελπιστούμε να συμβάλλουν στην αλλαγή νοοτροπίας στον τόπο μας.

Τα παιδιά σας θα πρέπει να έρθουν στο σχολείο στην ώρα τους χωρίς στολή αλλά με ρούχα κατάλληλα για τον σκοπό. Σας ενημερώνουμε ότι δεν θα τους επιτραπεί να κολυπήσουν. Παρακαλούμε φροντίστε να φορούν κλειστά παπούτσια και να έχουν επίσης μαζί τους καπέλο.

Ευχαριστούμε για την συνεργασία σας

Ηλίας Καμαράτος

Καθηγητής Γεωγραφίας /

Υπεύθυνος Προγράμματος ERASMUS+



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## PRESS RELEASE



**PASCAL**  
English School  
LARNAKA



(18/05/2016)

On Thursday 26 May 2016 at 8:00 am, PASCAL English School, Larnaca with 50 students and 3 teachers will carry out a beach clean-up of Oroklini beach east of "Goldfish Restaurant".

This activity is being carried out as part of the European ERASMUS+ 2015-2017 programme that PASCAL is taking part in and in cooperation with the NGO "AKTI" and the Oroklini Municipality.

Under the guidance of their teachers and the representatives of "AKTI" students of Form 2 will record all the trash collected for use in statistical research and will be informed regarding marine and shore pollution. Our aim is not just the cleaning of this particular beach but mainly to raise awareness among young children, something which we hope will contribute to a change of attitude around pollution in our country.

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## ΔΕΛΤΙΟ ΤΥΠΟΥ

(18/05/2016)

Την Πέμπτη 26 Μαΐου 2016 στις 8:00 π.μ., το PASCAL English School Λάρνακας με 50 μαθητές και 3 καθηγητές θα συμμετέχει σε εθελοντικό καθαρισμό της παραλίας Ορόκλινης, ανατολικά από το «Χρυσό Ψάρι».

Η δραστηριότητα αυτή γίνεται στο πλαίσιο του Ευρωπαϊκού προγράμματος ERASMUS+ 2015-2017 στο οποίο λαμβάνει μέρος το σχολείο μας και σε συνεργασία με την ΜΚΟ «ΑΚΤΗ» και το κοινοτικό συμβούλιο Ορόκλινης.

Με την καθοδήγηση των καθηγητών τους και των αντιπροσώπων της «ΑΚΤΗΣ» τα παιδιά της Β' γυμνασίου θα καταγράψουν τα σκουπίδια που θα συλλέξουν για σκοπούς στατιστικής μελέτης και θα ενημερωθούν για τη ρύπανση των θαλασσών και ακτών. Σκοπός μας είναι όχι μόνο ο καθαρισμός της εν λόγω παραλίας αλλά κυρίως η ευαισθητοποίηση των παιδιών, που ευελπιστούμε να συμβάλουν στην αλλαγή νοοτροπίας στην πατρίδα μας.



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## CYPRUS A5 THIRD SEMESTER

PASCAL ENGLISH SCHOOL LARNACA

**ERASMUS+ 2015-2017**

**A5 SCIENTISTS TRAVELLERS SEMESTER III**

Trip to Kato Drys Bee Museum

**Event:** Biology-related excursion

**Venue:** Kato Drys Bee & Embroidery Museum

**Date:** 24 November 2016

**Description:**

Students of class 3 visited the Kato Drys Bee Museum as part of a biology educational trip. Once there they were shown how honey bees were kept in antiquity and how bee-keeping is done today as well as how honey is harvested.

**Attached:**

Photos





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## THE BEE MUSEUM AND THE BEE KEEPER





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## ANCIENT AND MODERN BEE HIVE







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## CYPRUS A5 FOURTH SEMESTER

TECH FOR GIRLS: Microsoft Empowers European girls to #MakeWhatsNext in Science and Technology. [Evrilia Kiaya](#)

< <http://www.paideia-news.com/index.php...> >





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The program is available in electronic version on the project website [www.edu21.c0.pl](http://www.edu21.c0.pl)

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