

ISTITUTO COMPRENSIVO  
PANICALE-PIEGARO-PACIANO  
ITALY



SCIENCE  
GIRLS



SCIENCE  
GIRLS



Erasmus+

# **What we did MARCH-JULY 2017**

ACTIVITIES

DISSEMINATION

STEM SUMMER CAMPUS

REFLECTION ON THE PATH DONE

IDEAS FOR THE FUTURE ACTIONS

# ACTIVITIES

## SCIENCE LAB – BALANCE OF LEVER

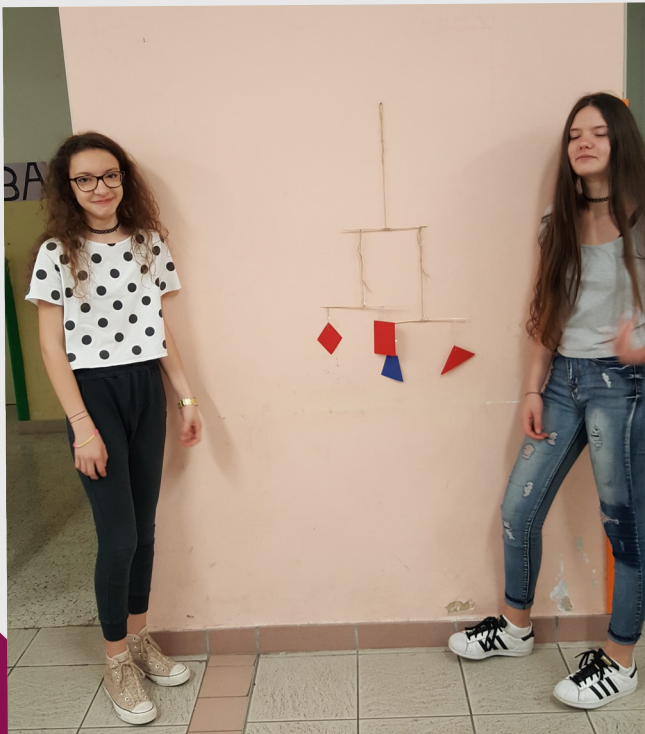
This activity arises from the need to consolidate the theoretical knowledge acquired by students on proportionality, through laboratory activities, peer discussion and manipulation of models built with companions using simple, readily available materials.

<https://youtu.be/yWltKi2VqOc>



# ACTIVITIES

## SCIENCE LAB – BALANCE OF LEVER





# ACTIVITIES

## SCIENCEGIRLS NEWSPAPER

#LiveInTheScience

### CONTENTS

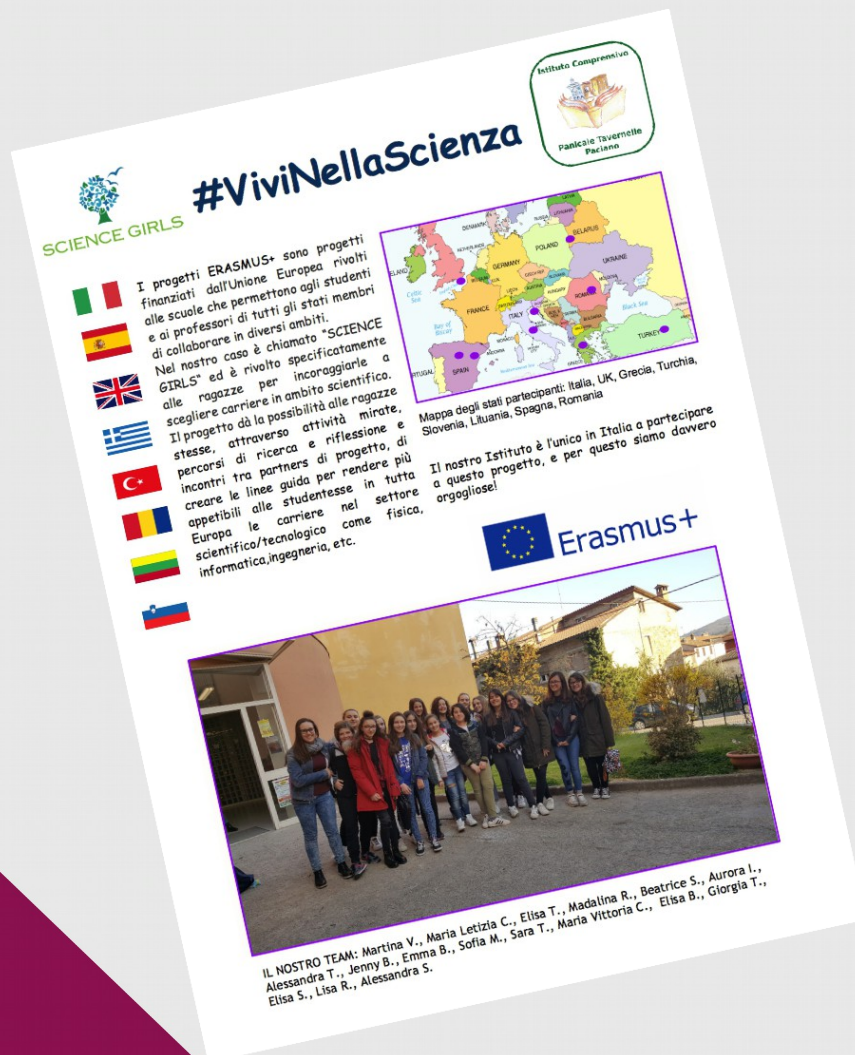
The project

The visit to University

If I were a scientist

Science&Poetry

The role model Margherita Hack



# DISSEMINATION EVENT

## 9 JUNE 2017

The girls met their parents, schoolmates, teachers, the Mayor and the Councilor of Paciano and Panicale to explain them the project and their experience during this first year

[https://youtu.be/Qw7fzl\\_2kWA](https://youtu.be/Qw7fzl_2kWA)

# SUMMER CAMPUS ScienceArt@Umbria

## *“WE LEARN STEM DURING THE SUMMER”*

The project concerns the study and monitoring of the health of an artwork symbolizing the historical-cultural identity of the Panicale Community, the fresco of the Perugino "The martyrdom of San Sebastiano" (1505 ca.) located in the church of the same name.

In order to involve the younger girls in the study of science and technology, our team has preferred to adopt a problem-based, experimental, inductive constructivist approach based on cooperative learning.

The girls become the main actors of their knowledge, but they are also scientific divulgatives, who promote what they learned to their peers and the community.

The local subjects involved are the San Sebastiano and Panicale Culture Office, CIRIAF (Interuniversity Research Center on Pollution and the Environment - Department of Civil and Environmental Engineering - University of Perugia) who, with its qualified staff and with the appropriate devices, supported the project in its experimental fieldwork and data processing.



# TOPICS AND LABS

**Math and Renaissance art:** perspective, proportion and golden section in the artwork and in the human body

**Art lab:** the technique of the fresco, how to make a fresco history and science of the colors

**Coding and augmented reality:** scratch and aurasma apps used to implement the informations on artworks

**Monitoring of the microclimate conditions** outside and inside the church where the fresco is located. The CIRIAF researcher's equipment consists of a wearable helmet with

- Visible light camera
- Infrared camera
- Probes for: air temperature, humidity, CO2 concentration, VOC concentration, global radiation and light, direction and wind speed

<https://youtu.be/004ObFPuzSQ>

<https://spark.adobe.com/page/BzYminXa9OB9i/>

## THE GIRLS THOUGHTS AFTER A YEAR

MARTINA: *"To me, the world of science has always been huge and varied, sometimes unintellegible, sometimes easy to understand; in any case, my idea of science was confused before ScienceGirls. Thanks to this project, my curiosity and my scientific knowledge are increased"*

ELISA: *"I was convinced I'll have followed a scientific career before the project, but thanks to it I'm absolutely sure now".*

ALBINA: *"I've been a science-lover since I was ten years old, and this experience strengthens my dream to be a researcher in the field of medicine."*

LETIZIA: *"To me, science was a school matter just like the others, now it has a more important role in my life"*

# IDEAS FOR ENCOURAGING SCIENCE LEARNING

- More science labs
- Days/meetings dedicated to science
- Studying nature “in nature” (field work)
- Meeting more role models in the field of science
- Change cultural behaviour (ex. the role of the women in the society, family management)

## IDEAS FOR THE 30' VIDEO

- Best answers from the role models of every country
- short interviews to girls aged 8 to 18 years old
- Short movies of our scientific experiment, experiences, lessons made to younger girls
- Our science vision before and after the project and our advices to encourage science learning



## INTERESTING WEB RESOURCES

[www.scientix.eu](http://www.scientix.eu)

<https://ngcproject.org/>

[www.wisecampaign.org.uk/about-us](http://www.wisecampaign.org.uk/about-us)

[http://www.scigirlsconnect.org/resource\\_topic/role-model-profiles/](http://www.scigirlsconnect.org/resource_topic/role-model-profiles/)