

CONNECT

Inclusive open schooling
with engaging and
future-oriented science

GOOD PRACTICES

Description for the site:

The students were engaged in recording and studying the threats and risks facing our Ecosystems and in particular the White Mountains National Park. Through ICT applications they explored the Samaria gorge. Specifically, they dealt with understanding how to read, orient and edit a digital map (GIS) and the possibilities of GPS. At the end, the students prepared a model with the Samaria gorge and the Portes point in comparison, where they implemented a fire alarm mechanism using the Arduino microcontroller. The presentation of their work took place as part of the Connect Student Conference on May 21, 2022.

Title: Discovering the natural wealth of the White Mountains using ICT.

This good practice presents an open school education initiative through the CONNECT project, developed by the Primary school of Exp. Theodoropoulusta Chania from 01 / 02 / 2022 to 01 / 05 / 2022. The scientific research team of the Spatial Information Systems laboratory of the Mineral Resources Engineering department of the Technical University of Crete participated in the activities. It was supported by PDE Crete. This practice was presented previously <https://connect-eu.exus.co.uk/en/groups/discovering-the-natural-wealth-of-t/documents/>

Care: The students were engaged in recording and studying the threats and risks facing our Ecosystems and in particular the White Mountains National Park. The students who participated in the activities were 10 years old and went to Primary D. There were two sections and a total of 35 students participated in the program.

Know: The skills the students practiced was to explore the Samaria Gorge through ICT. The students initially dealt with understanding how to read, orient and process a digital map (GIS) as well as the possibilities of GPS. With the help of electronic files received from the Samaria National Forest Management Body and the use of the Google Earth computer application, they managed to see the path of the canyon but also to learn how to read and orient a map. Also through the Geogreece website they found information about the flora and fauna of our country, the National Forests and the habitats that exist. From the information they collected each group proposed 3 questions and thus each department made a Quiz. To create the quiz they used the kahoot application. Then they visited the Spatial Information Systems laboratory of the Technical University of Crete. There they were welcomed by the professor and head of the laboratory, Mr. Partcinevelos Panagiotis, where, together with his research team, he guided them around the premises of the laboratory and together they discussed the use of IT systems in the representation of maps, as well as automatic geo-location systems (GPS). In particular, they saw how they can use drones with built-in GPS to prevent fires and other natural disasters as well as to rescue people in the Samaria gorge. They also created a real relief map of the Samaria area using the Sandmap tool.

Do: At the end, the students prepared a model of the Samaria gorge and the Portes point in comparison. Then they built a fire alarm mechanism using the Arduino microcontroller. This mechanism was designed





and programmed through the tinkercad application with the help of the students of the third grade of the school. Thus they completed the activities as a group and supported by their family and the school's High School. The presentation of their work took place at the Connect Student Conference on May 21, 2022. Conclusions about Open Schooling: The activity was integrated into the curriculum. It was a challenge since, on the one hand, the Informatics, Artistic and Laboratory Skills courses had to be combined and all this in collaboration with the scientific community. Open schooling can be useful for other teachers because the pedagogical use of ICT transforms traditional teaching practices and enhances the active involvement of students in all phases of the teaching process. The participation of scientists in this process did not confuse the students but helped them to deepen the topic they studied.

The change/innovation was supported by: School management school association/network Local government Other: _____

Student results: The students saw the program positively, they were excited by the use of technological means in every phase of the program and they participated very actively in it. Concerns were raised regarding the dangers and threats facing our ecosystems, but they were particularly encouraged by both their proposal to deal with fires through an electronic self-construction and the fact that there are scientists working on their protection.

This practice contributed to the increase of:

engaging families with sciences involving girls in science raising awareness among students about careers in the natural sciences

Please specify: The students interacted with technological tools and applications in order to learn and understand their usefulness.

Select the most relevant photo related to your initiative (which will be public and published under an open license) to represent the practice.





ABOUT THE CONNECT PARTNER that supported the school

ORGANISATION	Regional Directorate of Primary and Secondary Education of Crete (RDE)
COUNTRY	Greece
Όνομα συνεργάτη	Georgios Panselinas
Implementation period	Starting date: 01/02/2022 Ending date: 01/05/2022

ABOUT THE TEACHERS PARTICIPATED

SCHOOLS	Theodoropoulos Schools
TEACHERS names (for Good Practices' Certificates)	Bakaros Alexandros Michael Papaderos Alexander Thymaki Despina
Gender	
SUBJECT (Natural Sciences, Physics, Chemistry,	Informatics, Skills Workshop, Arts





Biology...)	
How many subjects were used in open schooling?	3
Title of open school education resource used	Discovering the natural wealth of my place: sustainable environmental and mythological routes
Type of learning scenario of science activities (structured or open scenario)	Structured Scenario
Curriculum modules	Digital Literacy - . Use of Applications, Media and Services
ABOUT THE STUDENTS PARTICIPATED	
Class	4 th grade
Age (average)	10 years old
Number of students participated that concluded the educational scenario	35
Number of students who completed the educational scenario of scientific activities	35
SCIENTISTS PARTICIPATED:	
Name	Partcinevelos Panagiotis
Field	Professor of the Mineral Resources Engineering Department of the Technical University of Crete

QUESTIONNAIRE

01. How have you (teachers) used open educational resources? Could you describe what you did in your lessons?

Student activities with scientists:

The students visited the Spatial Information Systems laboratory of the Technical University of Crete. There they were welcomed by the professor and head of the laboratory, Mr. Partcinevelos Panagiotis, where, together with his research team, he guided them around the premises of the laboratory and together they discussed the use of IT systems in the representation of maps, as well as automatic geo-location systems (GPS). In particular, we saw how we can use a drone with built-in GPS to prevent fires and other natural disasters as well as to rescue people in the Samaria gorge. They also created a real relief map of the area of Samaria using the Sandmap tool, while learning methods of orientation and map reading.

Student activities with their families:

At home the students discussed with their families the threats and risks facing ecosystems and drew related concept maps.





02. How have your students used the CONNECT resources? Do you have (or could describe) samples of better scientific actions (for our site/rewards)?

Any examples of what the students prepared?

The students prepared a model of the Samaria gorge and the Portes point in comparison. Then they built a fire alarm mechanism using the Arduino microcontroller. This mechanism was designed and programmed through the tinkercad application with the help of the students of the 3rd High School of the school.

Slide? Poster? Video?

(Add an image if possible)



03. How well did the science action learning scenario resources meet your needs?

Example related to the school curriculum:

Digital literacy. Students were involved with many IT applications during the program. Thus they became familiar with digital tools but also saw how IT and digital technology can influence and direct the evolution of society.

Students involvement:

Digital literacy. Students were involved with many IT applications during the program. Thus they became familiar with digital tools but also saw how IT and digital technology can influence and direct the evolution of society. Student engagement: The students made in the computer lab a knowledge Quiz through the online application kahoot, through questions they found themselves through a search on websites. Students' interest and confidence in science: The students showed particular interest regarding their involvement in the activities.



Student interest and confidence in science:

The students showed particular interest regarding their involvement in the activities.

04. How easy or difficult it was to use the science action learning scenario resources?

Issues related to materials, procedures, pressure from the interaction with the curriculum:

The most difficult point was the difficulty of getting along with the various scientific collaboration bodies mainly due to COVID restrictions.

05. What were the benefits of implementing the science action learning scenario for your students?

Describe the results of the students in their scientific actions related to:

KNOWLEDGE	The student was able to explain the threats facing ecosystems and propose solutions to protect them.
SKILLS	The student managed to develop skills in handling ICT tools.
ATTITUDES	The student was able to participate in cooperative learning activities

06. What have been the challenges of using educational science activity scenarios for your students?

Main challenges faced by students (Please select all that apply):

- Difficult...
- Long duration...
- Boring...
- Other (Please specify): ...





07. What activities worked well with the curriculum?

What helped the children achieve the learning objectives:

Their involvement in activities that included digital tools.

08. What activities did not work well with the curriculum;

Anything that could be done differently or avoided:

The integration of parents in the program.

09. The school Principal's opinion about CONNECT:

The students who participated in the program were actively involved in all the activities involved. By using digital applications and with the help of the scientific community, they raised awareness about environmental issues that concern us all. At the same time, they themselves looked for ways in which they could contribute to the protection of the environment. Finally, their participation in the CONNECT student conference contributed positively to enhancing their self-esteem.

10. Parents' opinion about CONNECT:

My daughter, actively participating in the Connect program, was excited about the use of technological means in every phase of the program. Also, through her participation in the Connect Student conference, she was given the opportunity to interact with the other children, but also to enhance her ability to present a work to an open audience.

Submission:

1. Please save the file in the following format: **YEAR MONTH DATE COUNTRY SCHOOL** (e.g. 20220326GR1stPrimarySchoolHeraklion. docx)
2. Please send this form to CONNECT Panel: <https://tinyurl.com/Connectbestpractices2022>

