



# A bag of... Earth

ERASMUS PLUS

Call 2021 Round 2 KA2

KA210-SCH - Small-scale partnerships in school education



# PROJECT OBJECTIVES



- to foster primary school children **interest in science**
- to improve children **STEM competences** in order to deal with **environmental issues** in their everyday life with peers and families
- to promote reflection and discussion about **gender stereotypes in science** and in STEM education and career
- to **connect** the scientific knowledge to **other school disciplines** in a holistic approach to education



# PARTICIPANTS



- Associazione Scienza Divertente Roma APS, Rome, Italy - non formal science education provider
- IC via Belforte del Chienti, Rome, Italy – primary school
- IC via dei Sesami, Rome, Italy – primary school
- Activities for Children s.l. (Nutty Scientists Madrid), Madrid, Spain – non formal science education provider
- Paraiso Sagrado Corazones, Madrid, Spain – primary school



# TARGET GROUPS



## In Rome:

- 9 classes from IC via Belforte del Chienti primary school – grades 2 to 4 – approximately 190 students
- 6 classes from IC via dei Sesami primary school – grades 2 and 5 – approximately 130 students

## In Madrid:

- 12 classes from Paraiso Sagrado Corazones – grades 1 to 4 – approximately 300 students



# PROJECT ACTIVITIES SUMMARY



1. DESIGN AND DEVELOPMENT OF SCIENCE KITS
2. TEST AND EVALUATION OF SCIENCE KITS
3. ONLINE EXCHANGE EVENT FOR CHILDREN AND  
DISSEMINATION ACTIVITIES



# DESIGN AND DEVELOPMENT OF SCIENCE KITS

Science kits on environment-related topics are the distinctive feature of the project A bag of... Earth

- 4 kits per participating class have been designed and developed







## SCIENCE KITS TOPICS



- Biodiversity
- Renewable energy and saving energy
- Sustainable food and healthy eating
- Saving water
- Climate change
- Sustainable development and recycling

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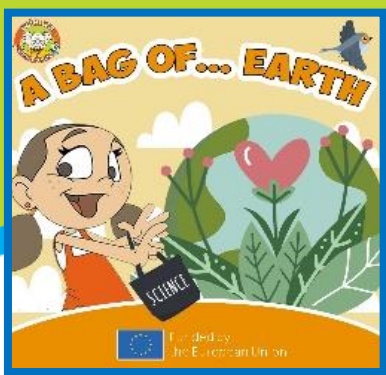
# SCIENCE KITS CONTENTS

Kits delivered to every child in each class **contained:**

- **Materials** for topic-related experiments. Content materials were mostly **recycled or recyclable**
- **Additional materials** among which:
  - ✓ **Suggested videos** and **or books** to additionally explore the topic
  - ✓ Brief **presentation of a female scientist** in the field
  - ✓ **Quizzes and/or games** to assess learning outcomes and a **“connection map”** linking the topic to other subjects (geography, history, civic education, art...)







# FEMALE SCIENTISTS IN KITS

Please find below the list of female scientists presented in the kits. Sometimes the scientist is different for the same topic, because it was chosen according to age and educational needs of the classes

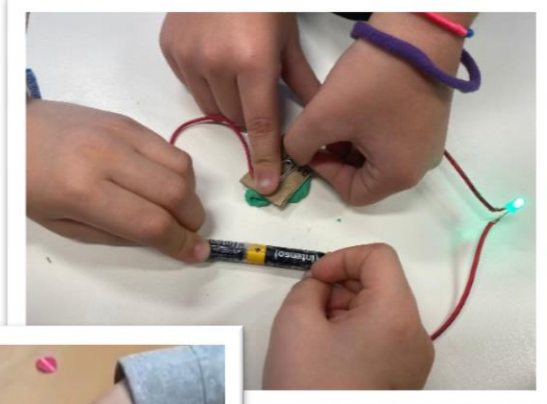
	ITALY	SPAIN
Biodiversity	Maria Sibylla Merian, Barbara Blanchard-De Wolff, Wangari Mahatai, Sylvia Earle	
Renewable energy and saving energy	Maria Telkes, Ann Mokosinski	Xochitl Guadalupe
Sustainable food and healthy eating	Eva Crane Ellen Henrietta Swallow	
Saving water	Gitanjali Rao	Gitanjali Rao
Climate change	Eunice Newton-Foot	Patricia Ramos
Sustainable development and recycling	Rachel Carson, Laura Conti	Greta Thunberg



# TEST AND EVALUATION OF SCIENCE KITS

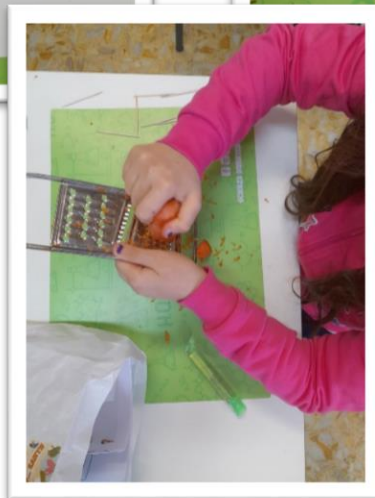
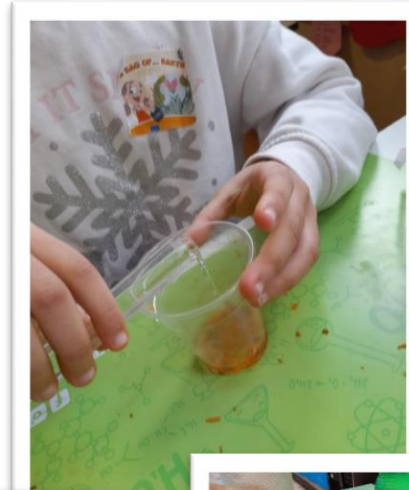


Science kits have been delivered to children in classes and scientific laboratories have been provided. Children and teacher(s) continued to use the kits to discuss and further explore the topics





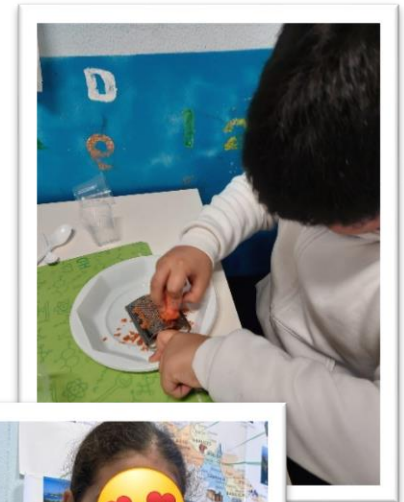
# TEST AND EVALUATION OF SCIENCE KITS







# TEST AND EVALUATION OF SCIENCE KITS





## ON LINE EXCHANGE EVENT

On line exchange event for children has been a final event in which they exchanged experiences, ideas and reflections about environmental issues with students from another country who had a similar experience







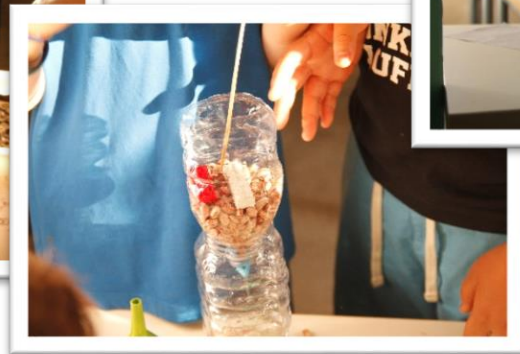
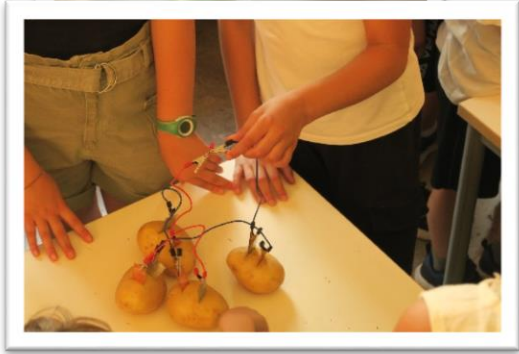
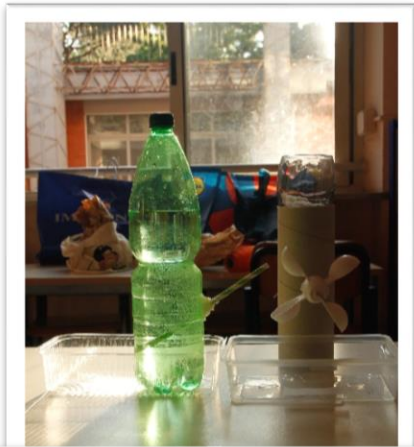
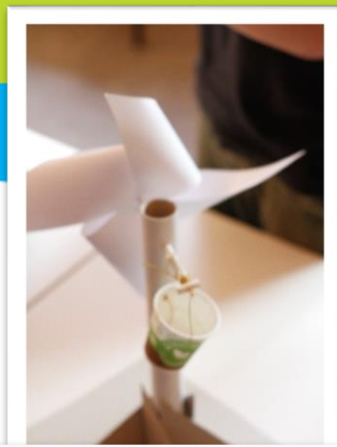
# ON LINE EXCHANGE EVENT





# DISSEMINATION ACTIVITIES

Local final dissemination events (in Italy and Spain)







# DISSEMINATION ACTIVITIES

Social media communication: 15 Facebook posts with videos and photos





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Social media communication: 15 Facebook posts with videos and photos





## RESULTS

### Primary objectives of the project were achieved

- Teachers reported an increased interest in science
- Children showed curiosity and enthusiasm towards the scientific topics
- Evaluation of competencies and knowledge in environmental issues resulted in an increased level at the end of the school year
- Teachers reported the activities about female scientists prompted interesting discussions and helped children think about women's role in science
- Teachers noticed an increased ability to make interdisciplinary connections by students and reported this specific feature was of interest to the whole school community





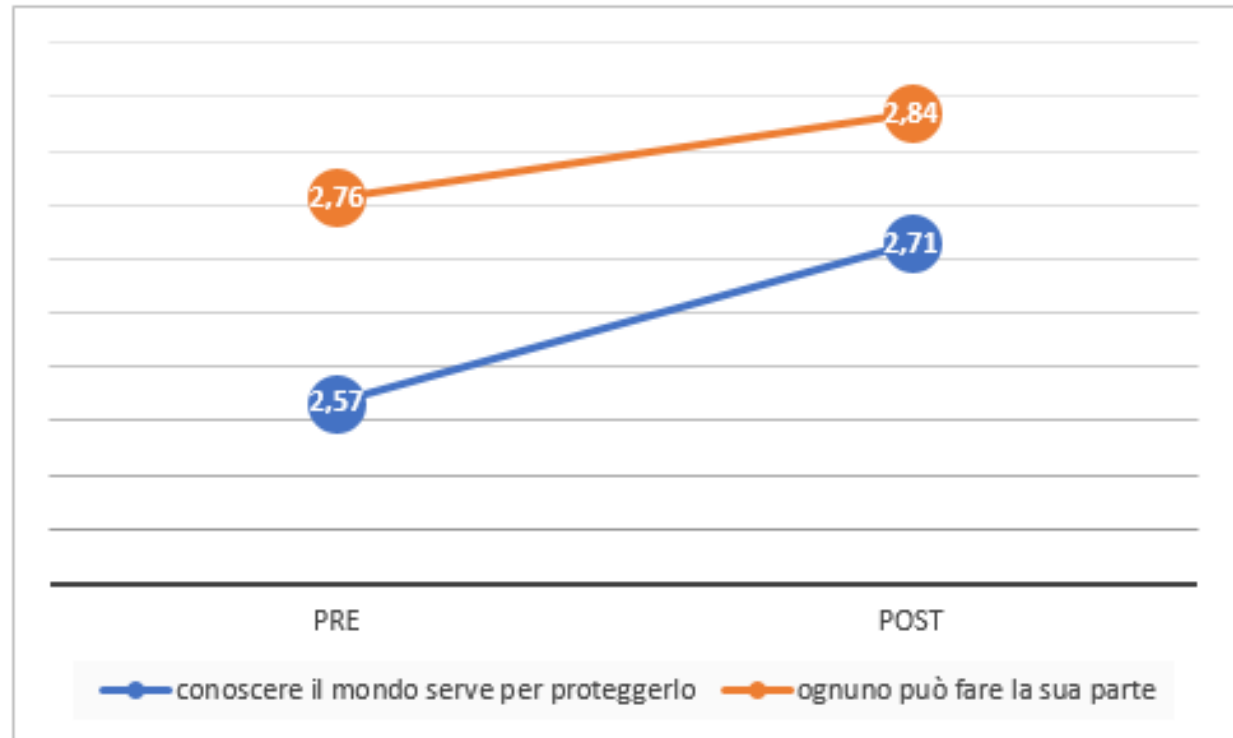
## RESULTS

### Self-evaluation of students before and after Changes in children's perception of science

knowing the world  
around  
us helps us take  
care of it (blue)

each one of us can  
do our part to  
protect the planet  
(orange)

(mean values on a 3-  
points scale)





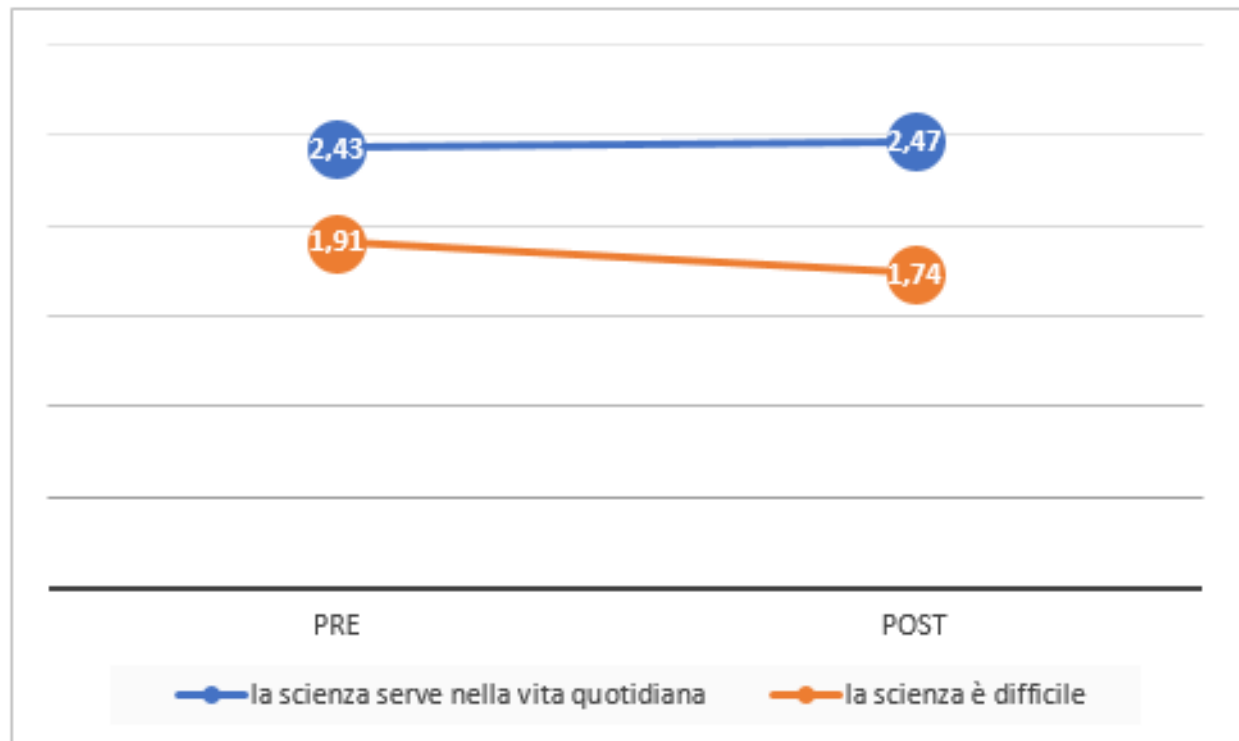
## RESULTS

### Self-evaluation of students before and after Changes in children's perception of science

science is useful in  
our everyday life  
(blue)

science is hard  
(orange)

(mean values on a  
3-points scale)





# RESULTS

## Self-evaluation of students before and after

### Changes of gender-based representations of scientists in children

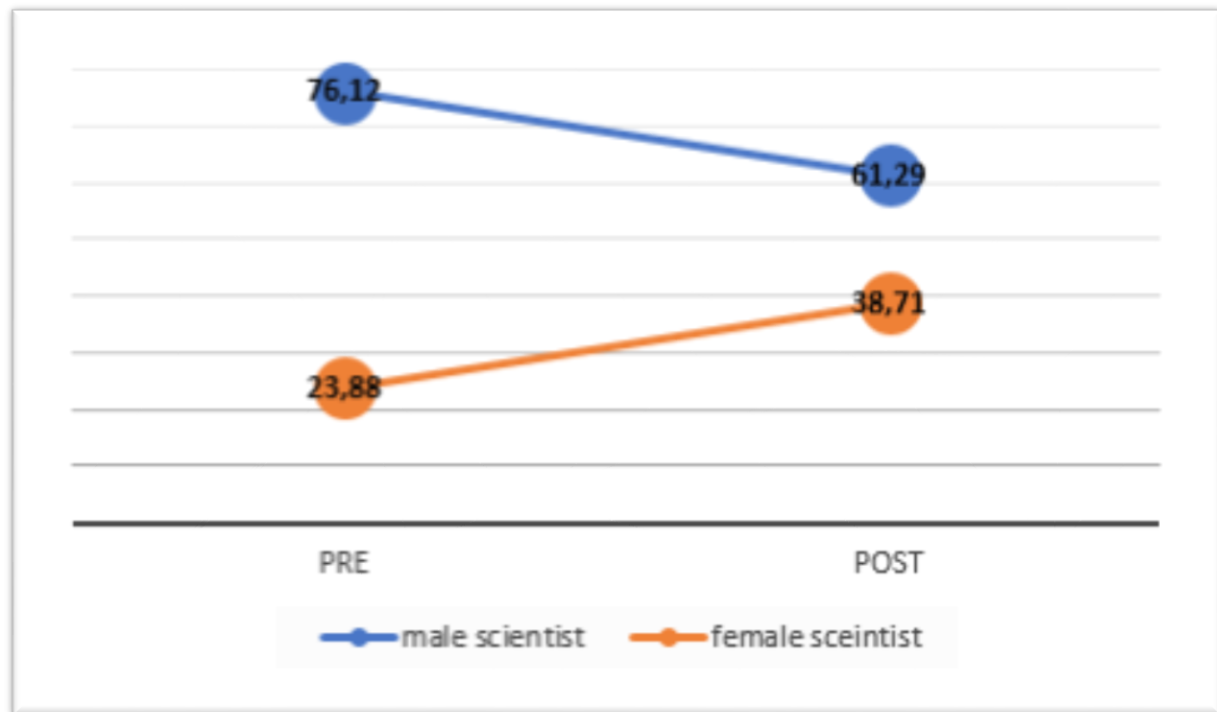
Drawing of a scientist

Sex of the pictured scientist

Male (blue)

Female (orange)

(% drawings)





## RESULTS

### Self-evaluation of students before and after

### Changes of gender-based representations of scientists in children

Drawing of a scientist

Sex of child and the pictured scientist

Same sex (blue)

Other sex (orange)

(% drawings)

