

The background of the cover is a vertical image of Earth's horizon from space. The sun is rising or setting behind the horizon, creating a bright orange and yellow glow. The Earth's surface is visible on the left, showing clouds and landmasses. The sky is dark with stars.

# NUCLIO

INNOVATING IN EDUCATION FOR A BETTER FUTURE

# CATALOGUE

2025-2026



# ABOUT US

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NUCLIO, founded in 2001, is a non-profit association and a Non-Governmental Development Organisation (NGDO) composed by a group of scientists, researchers, teachers and trainers specialised in various scientific fields, as well as in educational psychology and science education. Since the beginning, Astronomy has been the preferred vehicle for fulfilling this mission.

## Mission

To bring innovation and inclusion into education, making it a driver of social transformation that promotes, across all parts of the world, active citizenship, literacies, critical thinking, and empathy.

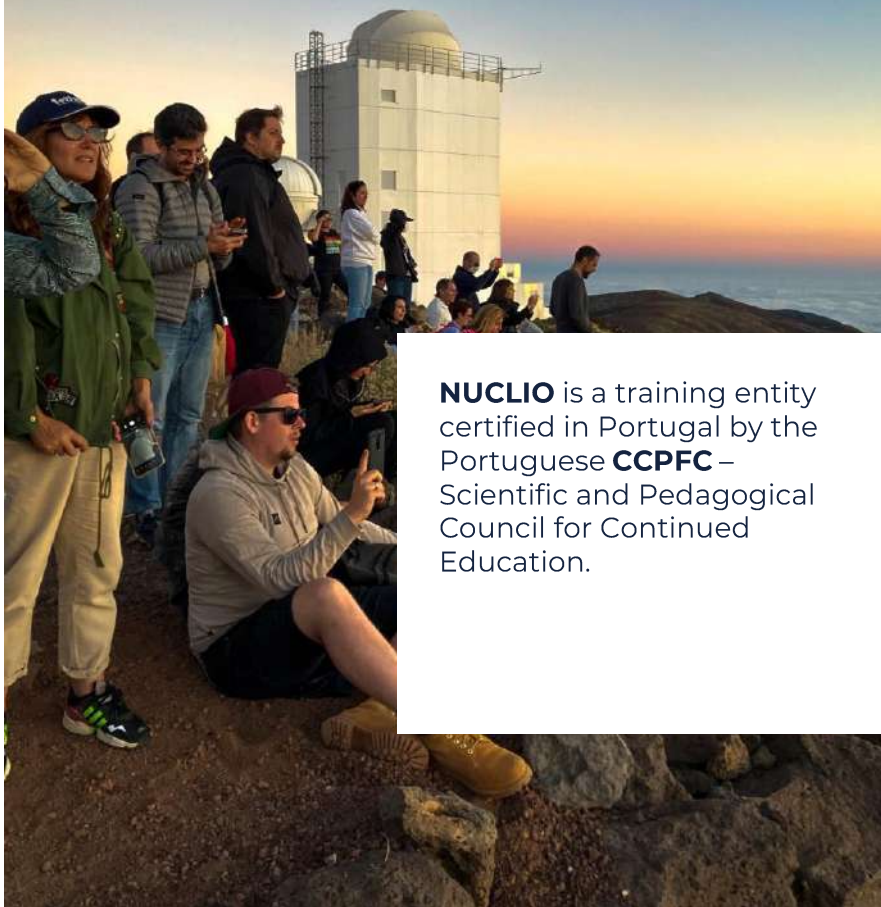
## Vision

An education that transforms the world into a more empathetic, innovative, inclusive, and sustainable place.



# TEACHER TRAINING

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**NUCLIO** is a training entity certified in Portugal by the Portuguese **CCPFC** – Scientific and Pedagogical Council for Continued Education.

Find out more:



# ACCREDITED TRAINING

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## CHANGE MAKERS – DEVELOPING COMMUNITY EDUCATIONAL PROJECTS

This training programme empowers teachers to develop community-based educational projects in a digital and collaborative context. It explores active methodologies, such as Design Thinking, Open Schooling, and UDL, in makerspace environments, promoting inclusion, interdisciplinarity, and civic participation for a school open to the future.

**Format:** Workshop

**Number of accredited hours:** 50 hours (25 in-person + 25 independent work)

**Target audience:** Accredited in Portugal for early childhood educators, primary and secondary school teachers, and special education teachers.

Find out more:



# ACCREDITED TRAINING

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## TEACHERS AND STUDENTS OF THE 21ST CENTURY - INNOVATIVE AND INCLUSIVE APPROACHES

Training that empowers teachers to apply active and inclusive methodologies - Inquiry, Design Thinking, Open Schooling, and UDL - integrating digital resources to create innovative, interdisciplinary learning scenarios aligned with the digital transition.

**Format:** Workshop

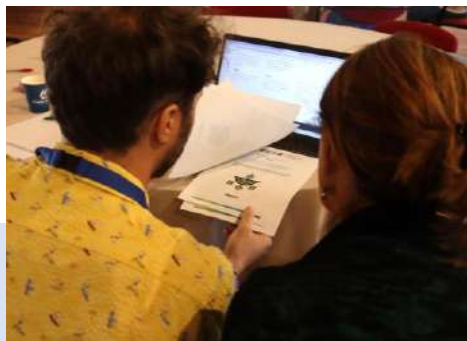
**Number of accredited hours:** 50 hours (b-learning)

**Target audience:** Accredited in Portugal for early childhood educators, primary and secondary school teachers

# ACCREDITED TRAINING

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Find out more:



## CITIZENSHIP FOR SUSTAINABILITY

Citizenship for sustainability and citizen science in the field of aquatic ecosystems will be the focus of this training. Teachers will develop projects with students using active, collaborative, and inclusive approaches, involving the entire educational community.

**Format:** Workshop

**Number of accredited hours:** 50 hours (b-learning)

**Target audience:** Accredited in Portugal for primary and secondary school teachers

Find out more:



# ACCREDITED TRAINING

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## **ASTRONOMY AND INTERDISCIPLINARITY: BUILDING PERSONALIZED LEARNING PATHS**

This training programme empowers teachers to integrate astronomy into interdisciplinary and inclusive projects, using active methodologies, validated resources, and principles of Universal Design for Learning, promoting collaboration and pedagogical innovation.

**Format:** Workshop

**Number of accredited hours:** 50 hours (b-learning)

**Target audience:** Accredited in Portugal for primary and secondary school teachers

Find out more:



# ACCREDITED TRAINING

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## FROM EARTH TO SPACE: RESEARCH WITH REAL SCIENTIFIC DATA IN AN EDUCATIONAL CONTEXT

Training that supports teachers in using real scientific data in an educational context, promoting active and inclusive methodologies, validated resources, and interdisciplinary projects that stimulate students' curiosity, critical thinking, and scientific literacy.

**Format:** Workshop

**Number of accredited hours:** 50 hours (b-learning)

**Target audience:** Accredited in Portugal for primary and secondary school teachers

Find out more:



# ACCREDITED TRAINING

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## PEDAGOGICAL INNOVATION THROUGH MAKER EDUCATION AND DIGITAL EDUCATION LABS (LED)

This training programme empowers teachers to pedagogically explore Digital Education Labs and Maker spaces, promoting active methodologies, interdisciplinary projects and inclusion, while developing digital literacy and 21st-century skills.

**Format:** Workshop

**Number of accredited hours:** 50 hours (b-learning)

**Target audience:** Accredited in Portugal for early childhood educators, primary and secondary school teachers, and special education teachers.

# OTHER TRAININGS

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## **INTRODUCTION TO ELECTRONICS AND PROGRAMMING WITH MICRO:BIT**

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## **HOW TO ORGANISE A PLANETARIUM SESSION AT YOUR SCHOOL**

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## **3D MODELLING AND PRINTING**

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**AND MUCH, MUCH MORE...**

**Share the topics that interest you most and suggest other training courses of your choice!**

Get in touch with the NUCLIO team to discuss budgets or find out if your school is eligible to access these training courses free of charge.



# Global Teacher Training Program coordinated by NUCLIO

Find out more:



NUCLIO coordinates the Galileo Teacher Training Program (GTTP) at a global level.

Since 2009, GTTP has trained over **70,000 teachers** in more than **120 countries**.



**Global Hands-On Universe** brings together efforts from around the world to train teachers in the use of modern tools and resources for science education.

It also promotes interactive scientific projects among G-HOU countries and engages educators and students in truly global collaboration.



NUCLIO develops, coordinates, and participates as a partner in various national and international educational innovation projects.

# INNOVATION IN EDUCATION

Change Makers has a  
new identity!



# Makers4Change

A space for creation, learning, and innovation where the only limit is imagination.

At Makers4Change, it is possible to develop projects using cutting-edge technologies (3D printers, laser cutter, CNC machine, web studio, among others) with the dedicated support of professionals experienced in various Maker, scientific and educational fields.

Change Makers aims to give a voice to citizens, empower the community and innovate in education.

- A space designed for use by citizens and schools
- Workshops for the community
- Certified teacher training

Contacts:



[www.changemakers.nuclio.org](http://www.changemakers.nuclio.org)  
[changemakers@nuclio.org](mailto:changemakers@nuclio.org)  
214 452 165

With support from:



Partnerships:



New website soon:  
**[makers4change.org](http://makers4change.org)**  
Stay tuned!



# Projects with National Representation by NUCLIO

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**ASTRO-JOURNEYS**

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The project offers an interdisciplinary journey, structured around the Big Ideas in Astronomy and supported by AI, highlighting the relevance of astronomy in everyday life.

[astrojourneys.eu](http://astrojourneys.eu)



**BIO-STREAMS**

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Bio-Streams combines data-driven research, preventive measures, and community involvement to offer a holistic approach aimed at reducing obesity rates among children and adolescents.

[bio-streams.eu](http://bio-streams.eu)



**Discovery Space**

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Discovery Space proposes the development of an AI-enhanced classroom roadmap to foster deeper learning in STEM subjects.

[discoveryspace.eu](http://discoveryspace.eu)



Exo4Edu aims to bring knowledge about exoplanets and the search for life in the Universe to secondary school teachers and students, strengthening their skills in STEAM and other essential competencies.

[exo4edu.eu](http://exo4edu.eu)



Project that aims to engage students in space exploration experiences, aligned with the STEAM curriculum requirements, inviting them to take part in activities that simulate the environments of the Moon or Mars.

[explore-project.eu](http://explore-project.eu)



**GEO-ACADEMY**  
GEO-Hub for teachers in Europe

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GEO-Academy aims to equip pre-service and in-service teachers with the skills to integrate Geographic Information Systems (GIS), Earth Observation, Remote Sensing, and Geospatial Digital Storytelling into the teaching of sustainable development.

[geoacademy.eu](http://geoacademy.eu)



The programme uses telescopes from around the world to capture images of the sky, which are then analysed by students with the aim of identifying fast-moving objects (i.e. asteroids) against the background of fixed stars.

[iasc.cosmosearch.org](http://iasc.cosmosearch.org)



L-STEAM seeks to showcase transdisciplinary and innovative methods, and to foster transferable, future-oriented skills in STEM fields, enriched with artistic and creative methodologies.

[lsteam.eu](http://lsteam.eu)



This project continues the promotion of Open Educational Practices and Resources (OEP & OER) and empowers teachers to become collaborative learning content designers.

[open-teach.eu](http://open-teach.eu)



StAnD – Students As Planetary Defenders – aims to engage primary and secondary school students and teachers in the topics of asteroids, meteors, and planetary defence.

[projectstand.eu](http://projectstand.eu)



The project aims to create an environment where middle and high school students can immerse themselves in scientific methodologies while exploring artistic expression through STEAM education.

[steminnovation.eu](http://steminnovation.eu)



STEMMOS aims to train teachers in teaching the Earth, Moon, and Mars (EMMO) sciences, with the goal of strengthening students' skills in STEAM fields.

[stemmos.eu](http://stemmos.eu)



Teacher Digital Content  
Creation Competencies

This project aims to demonstrate how teacher training programmes – both for pre-service and in-service educators – on Citizenship for Sustainability can be interconnected to develop a joint European-wide offer.

[synapses-academies.eu](http://synapses-academies.eu)

The goal of TD3C is to identify the skills that enable teachers to create digital content and work with them to experiment and iterate a related framework that supports them in content creation.

[td3c.eu](http://td3c.eu)

Learn more about our projects at:

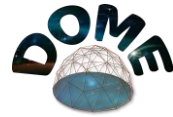


# Initiatives Coordinated by NUCLIO

## ASSESS

Project aimed at addressing questions about student assessment with the goal of creating a powerful assessment framework for teachers and students.

[assess.nuclio.org](http://assess.nuclio.org)



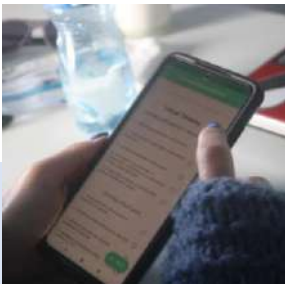
The project aims to offer a new STEAM approach and immersive hands-on experiences. The DIY planetarium will remain at the school, providing an informal learning environment that enables interdisciplinary collaboration between teachers and students.

[dome.nuclio.org](http://dome.nuclio.org)



This international programme aims to tackle the issue of light pollution and raise awareness in local communities through projects carried out by students.

[dsr.nuclio.pt](http://dsr.nuclio.pt)



# Other initiatives supported by NUCLIO

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The COSPAR Education Panel works on developing appropriate means to encourage and promote education related to space.

[cosparhq.cnes.fr/scientific-structure/panels/panel-on-education-pe](http://cosparhq.cnes.fr/scientific-structure/panels/panel-on-education-pe)



European School Innovation Academy

ESIA supports teachers and school principals in innovating school education by offering training activities at an international level.

[esia.ea.gr](http://esia.ea.gr)



Global Hands-On Universe is an educational programme that inspires students to explore the Universe through tools and concepts from science, mathematics, and technology-related fields.

[globalhandsonuniverse.org](http://globalhandsonuniverse.org)



GSO aims to design annual productions in which its global community will explore science, art and technology within a creative and democratic inquiry process.

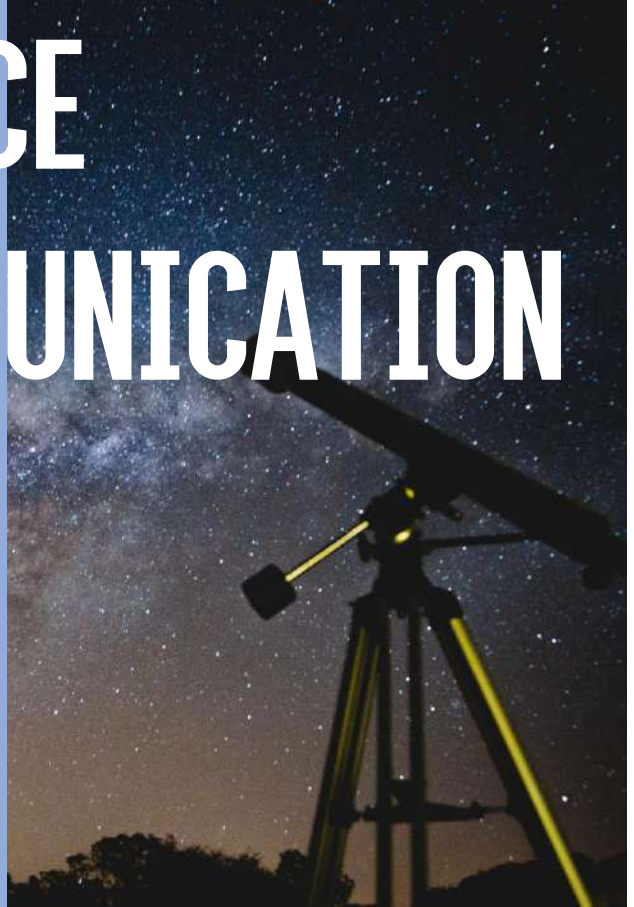
[globalscienceopera.com](http://globalscienceopera.com)



Designed to promote the exchange of innovative ideas and best practices among STEM teachers. Its main goal is to improve STEM education by supporting teachers in their professional development and growth.

[scienceonstage.pt](http://scienceonstage.pt)

# SCIENCE COMMUNICATION



NUCLIO is active in the field of science communication, with a special focus on Astronomy and Astrophysics, organising workshops and lectures, science cafés and sessions for observing the Sun and the night sky for the general public.

NUCLIO has also been promoting science communication activities within communities across the country.

The activities carried out in the municipality of Cascais have been supported by the Cascais City Council, through projects such as CELESTE, as well as by several schools.



NUCLIO was founded in response to the lack of high-quality Portuguese-language resources in scientific fields – especially in Astronomy and Astrophysics – identified at the beginning of this century.

Thus, the Astronomer's Portal was created, which remains active and up-to-date to this day.





# SUPPORT FOR DEVELOPMENT

One of NUCLIO's core areas of work is participation in development support projects.

What began with outreach in Astronomy gradually evolved into education and training across various scientific fields through involvement in national and international projects. As a result, development support naturally emerged as an additional focus area for NUCLIO.



**PLOAD**

Grupo Lusófono de **Astronomia**  
para o Desenvolvimento



International Office of  
Astronomy Astronomy  
Union for Development



**NUCLIO** trust  
for a better world

PLOAD promotes the use of astronomy as a tool for development in Portuguese-speaking countries and communities, supporting the ten-year strategic plan of the International Astronomical Union.

[pload.org](http://pload.org)

The NUCLIO Trust supports global causes through citizen engagement and donations. Its main mission is to promote equality and inclusion in education and to provide equal opportunities for students worldwide.

[trust.nuclio.org](http://trust.nuclio.org)

2025-2026 School Year

Find out more:



@nuclio



@nuclio.bsky.social



@nuclio\_pt



@nuclio-pt