

The value of nature-based education lies in its ability to foster holistic development by connecting individuals to the natural world, promoting environmental stewardship, enhancing well-being, and fostering a deep sense of curiosity and wonder.

LEARNING ABOUT FORESTS (LEAF)

Using Nature as a Classroom || Arnau Macià
Foundation for Environmental Education

The climate and biodiversity crises are global challenges that require collective solutions that start with education. The Learning about Forests (LEAF) program advocates for outdoor learning and hands-on experiences, allowing students to connect with nature and develop a deeper understanding of the natural world. It instills in students a sense of respect for, and ownership of, their natural surroundings, rekindling in them the wonder that ecosystems evoke and reminding them of the vital role nature plays in our lives.

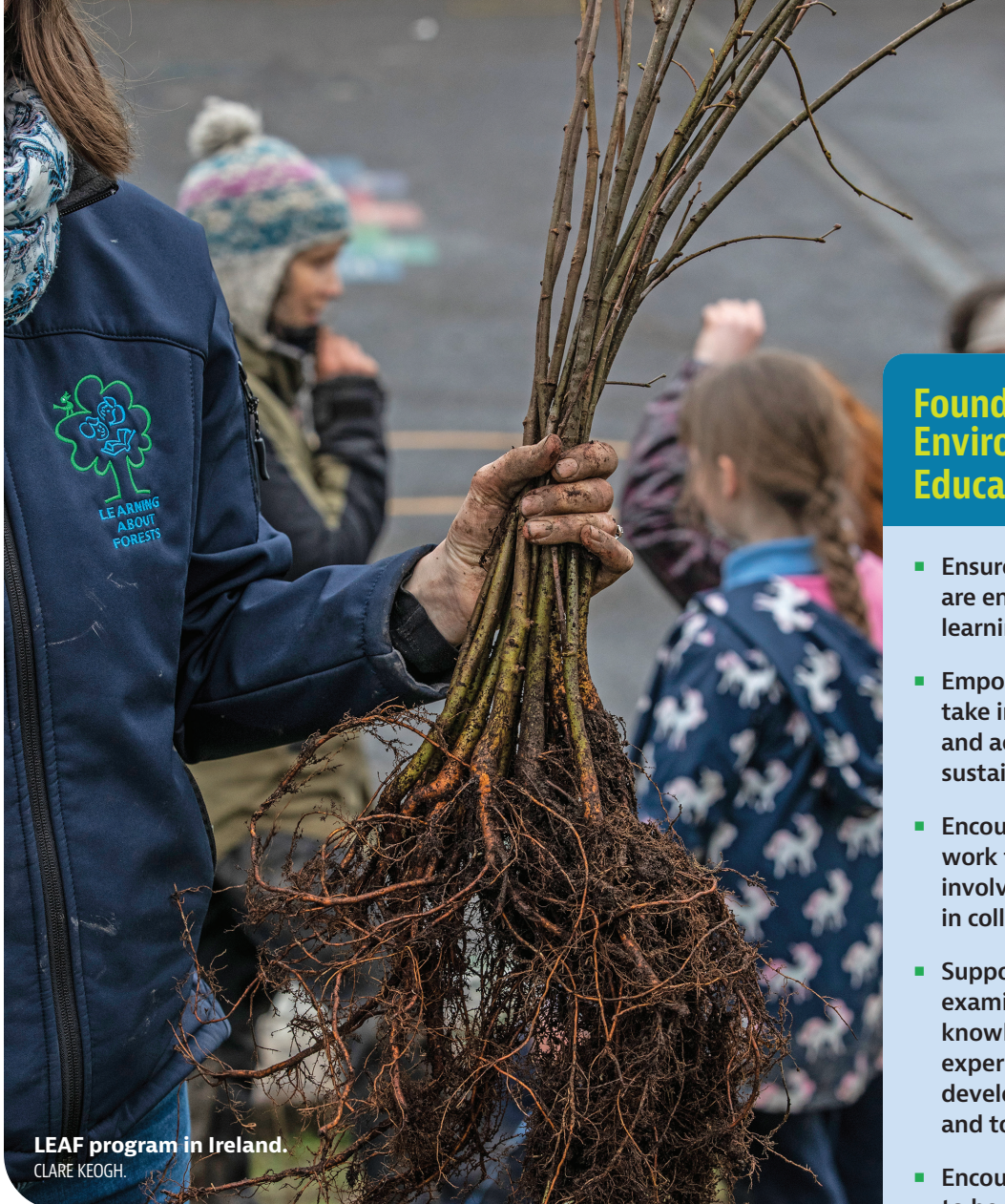
Many children today, at least in developed countries, know nature through their screens, from documentaries and films. They may be familiar with exotic animals in faraway continents, but they have no experience of nature close to home, they have not walked in a forest, they have not picked up a fallen branch and gotten their hands sticky with pine resin. Twenty-three years of implementation have established LEAF as a well-respected programme for project-based learning, and a powerful tool to counter this.

—Nikos Petrou FEE Board of Directors

LEAF was initiated in 1999 by the Forest in Schools program in Norway, Sweden, and Finland. In cooperation with the Foundation for Environmental Education (FEE), the program rolled out globally in the spring of 2000. While the program started with a focus on forests and sustainable forest use, today it includes a diversity of ecosystems to foster skills and knowledge by exposing learners to outdoor experiences and promoting nature connectedness.

The program is coordinated internationally by the Foundation for Environmental Education (FEE), an umbrella organization with over 100 members worldwide. LEAF reaches over 3,800 schools, engaging over 694,600 students and 20,700 teachers in 28 countries.

For three years in a row, the LEAF program has been selected by HundrED as one of the 100 inspiring innovations that are changing the face of education in a post-COVID world. The program has scaled to more than 25 countries and has the potential to keep growing.



LEAF program in Ireland.
CLARE KEOGH.



Foundation for Environmental Education Principles

- Ensure that participants are engaged in the learning/teaching process.
- Empower participants to take informed decisions and actions on real-life sustainability issues.
- Encourage participants to work together actively and involve their communities in collaborative solutions.
- Support participants to examine their assumptions, knowledge, and experiences, in order to develop critical thinking, and to be open to change.
- Encourage participants to be aware of cultural practices as an integral part of sustainability issues.
- Encourage participants to share inspirational stories of their achievements, failures, and values, to learn from them, and to support each other.
- Continuously explore, test, and share innovative approaches, methodologies, and techniques.
- Ensure that continuous improvements through monitoring and evaluation are central to our programmes.

LEARNING ABOUT FORESTS FIGURES 2022

3833 SCHOOLS

694,644 STUDENTS

TOTAL TEACHERS 20,798



28 MEMBER COUNTRIES

320 Schools Involved in Tree Planting

38,780 TREES PLANTED This Year



ON AVERAGE 74 HOURS



Are Dedicated to Outdoor Education Activities Every Month

RECOGNITIONS

LEAF was selected as one of the Top 100 Education Innovations to watch out for in 2023 by HundrED.



The LEAF Methodology

The LEAF program looks at natural ecosystems from an interdisciplinary perspective by considering the multiple intertwined functions of the natural world: **cultural, ecological, social, and economic**. LEAF offers a structured yet flexible approach that allows schools and countries to make adaptations to suit their local context and specific needs.

In order to empower schools, maximizing their success with the program, the LEAF Pedagogical Cycle offers a comprehensive framework designed to help schools structure their LEAF initiatives through which young people:

Look & Observe (L)
Explore (E)
Analyze (A)
Function & Flourish (F).

Throughout the four steps, a diverse range of individuals within the school community participate, with students taking a central role in the process of outdoor learning and discovery. Engaging the school community is a crucial part of the program.

A successful example of this community-wide involvement can be found in Tanzania, where a group of students at the Lusanga Primary School started a tree nursery project. The school sold the trees and seedlings to the community, generating income to be used for school improvements and greening of the school grounds. As a result, the project has enhanced meaningful learning, while providing outdoor learning opportunities. The new tree nursery is now used to support learning about geography, science, and mathematics, as well as life skills, which are considered crucial in the Tanzanian curriculum.

LEAF is not another thing for already over-stretched educators to squeeze into busy days, but an opportunity to do things in a different way, with benefits for pupils, educators, and local communities.

*—Nicola Davidson, Education and Learning Officer
at Keep Scotland Beautiful*

Look & Observe. The first step of the LEAF Pedagogical Cycle encourages young people to look around themselves and observe nature, taking note of those things they previously might have overlooked (e.g., trees, birds, insects, or the human-nature interaction/s). Observation is an important skill for

learning, as it leads to findings, raises questions, and creates the interest to know more. In South Africa, the Stanger Training Centre, which takes care of and educates children, 6-18 years old, who are intellectually impaired with Down syndrome, cerebral palsy, autism, and epilepsy, developed its own indigenous biodiversity garden. The project helped enhance students' opportunity for creativity and connection to nature, which consequently stimulated their curiosity. Spending time outdoors and interacting with the natural environment allows children to learn by doing and experimenting with ideas. As Cindy-Lee Cloete, Head of Programmes and Projects at the Wildlife and Environment Society of South Africa (WESSA), reflects: "The garden was turned into something special: an outdoor classroom where students and teachers can look, observe, learn, and flourish."

Explore. The second step encourages students to dive deep, traveling through the unknown toward new information and understanding. Discoveries that make the world a better place are the rewards of such exploration. In outdoor education, exploration allows young people to build their levels of confidence and creativity, resulting in improved performance and sustained motivation to learn.



LEAF program in South Africa.

WILDLIFE AND ENVIRONMENT SOCIETY OF SOUTH AFRICA (WESSA).

Analyze. After exploration, the next step aims to help young people visualize and analyze the information they have acquired through the first steps. Through an analysis, learners are encouraged to use their critical thinking skills to make sense of and reflect upon the underlying structures or components that sustain life on Earth and provide for our everyday needs. For instance, in Norway, 5th-grade LEAF students participating in the annual Forest Games can choose between carrying out a local forest investigation and presenting their findings to another class, exploring the advantages and disadvantages of using wood as a forest resource, creating bird nesting boxes while coming up with a bird-related research hypothesis, or plotting forest garbage discoveries on a map and creating an environmental plan for the local forest. Such educational activities bring Explore and Analyze to life.

Function & Flourish. The culminating step of the LEAF Pedagogical Cycle can take many forms, such as taking an interest in local flora and fauna, service learning, advocating for sustainable consumption, spending time outdoors, participating in conservation or restoration actions, etc. The common factor is taking responsibility for one's actions and their impact. In Mexico, LEAF students take responsibility for their future, as they reforest the Mexican sacred water forest Ajusco-Chichinautzin, which has been impacted by deforestation as the economically valuable oak wood has been harvested. Recognizing the important ecological role that tree roots play in facilitating water infiltration and aquifer recharging, schools have decided to lead an oak reforestation project to tackle regional water scarcity. In the process, the students educate their families and inspire the local community to take action. Through the project, pupils also gain an understanding about the conflicts of interest that arise given the oak forest's ecological role and the economic value of the wood.

Outcomes of the LEAF Program

Besides promoting knowledge and awareness about natural ecosystems among students, teachers, and the wider community, the LEAF program fosters environmental maturity by ensuring learners understand the interplay between humans and nature and become capable of making well-informed decisions on local



LEAF program in the United States.
NATIONAL WILDLIFE FEDERATION (NWF).

environmental issues. By exposing learners to outdoor learning and experiences, the program helps to instill appreciation of and respect toward the natural world. A sense of nature connectedness is crucial for tackling the global environmental challenges of our time.

In the United States, 6th- to 8th-grade students participating in the LEAF and Eco-Schools programs have engaged in learning about the impacts of climate change and local extreme urban heat islands. Students have assessed areas of green and open spaces, tree density, area of tree shade, green roofs, as well as air quality in their neighborhoods. Once they gathered the data from their assessments, they identified a need for more trees in their community to provide shade and improve the neighborhood's social and environmental resiliency. To tackle this need, they have planted 27 trees while also exploring the concept of environmental justice. As Elizabeth Soper, Senior Director of K-12 Education at the National Wildlife Federation, reflects, "Many of the students' schools are located in heat-vulnerable neighborhoods. Students felt it was clear that they had to take action to protect their communities."

The LEAF program has the potential to transform education quality by engaging children in wholesome outdoor experiences instead of sedentary and unidirectional classroom teaching. Spending time outdoors and in contact with nature offers children a chance to build and develop interpersonal and social skills, which are being challenged with the advent of technology and increasing screen time. An outdoor learning environment supports children in achieving their potential,

because nature can inspire them, promote their curiosity, and allow them to take chances. Children can bloom in the forest and other outdoor settings. While being outdoors, children develop skills of resilience, problem-solving, and self-management, as well as respect for one another.

In the “Nesting Forests (Nestelbossen)” of Belgium, schools can register for a visit to a demarcated space in a forest where children can move between different learning stations (also referred to as nests). Children develop skills in playful ways as they move around the different nests, such as building and carpentry, working with mud, playing music, and acting. As they explore, they develop their interests and personalities. Caroline Bosteels, GoodPlanet Belgium vzw, reflects on her experience: “As a kindergarten teacher with more than 10 years of experience, I wanted children to reconnect with nature, and offer them a place where

they can fully experiment, explore, learn through play, or find peace where necessary. After all, this is what children need, but unfortunately often do not find in regular education.”

Looking Forward

The LEAF program rests on the belief that children need to experience nature, both for themselves and for society. According to the United Nations, 68% of the world population is projected to live in urban areas by 2050, a fact that strengthens the need to connect with nature. As part of FEE’s 10-year strategy GAIA 20:30, the program will contribute to addressing three major challenges of our time by protecting global biodiversity, empowering climate action, and reducing environmental pollution.

Given the strong connection between the Foundation for Environmental Education (FEE)’s 10-year strategy and the UN Decade on Ecosystem Restoration goals,



LEAF program in Ireland. Students from Scoil Realt na Mara planting their An Choill Bheag (little woodland) on their school grounds. CLARE KEOGH.



LEAF program in Czech Republic. Planting day of the first Czech Tiny Forest. TEREZA and Jan Werich Elementary School Prague 17.

FEE is proud to be a supporting partner of the UN Decade on Ecosystem Restoration (www.decadeonrestoration.org). FEE is also leading the Education Challenge 6.1 of the UN Decade, in collaboration with UNESCO and the North American Association for Environmental Education (NAAEE), to mainstream restoration education in educational systems worldwide.

Through the LEAF program, the Foundation for Environmental Education is committed to investing in our children's future by empowering and educating them to become the next generation of nature restorers and environmental leaders. To achieve this, instilling a sense of nature appreciation and connectedness is vital. By investing in and advocating for outdoor, experiential learning, LEAF seeks to promote nature conservation values and cultivate a sense of environmental stewardship among young generations.

Joining the LEAF Network

If you are inspired to implement the LEAF program, you can reach out to a LEAF National Operator in your country. International Schools in countries without a FEE member organization have the option to run the LEAF program directly with the FEE Head Office, along with two other FEE education programs: Eco-Schools and Young Reporters for the Environment (YRE).

<https://www.leaf.global/>
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Countries Involved in the LEAF Program

Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, England, Finland, Georgia, Germany, Greece, Ireland, Kenya, Malta, Mexico, Mongolia, Netherlands, Norway, Romania, Russia, Scotland, Slovenia, South Africa, South Korea, Tanzania, Turkey, United States

For more information, visit www.leaf.global/national-offices

To read more about how the countries implementing the LEAF program use nature as a classroom, you can read the publication *Outdoor Education Activities for Schools, Using Nature as a Classroom*, published in 2021 to celebrate the program's 20th anniversary.

Disclosure Statement:

The author is an employee of the Foundation for Environmental Education.