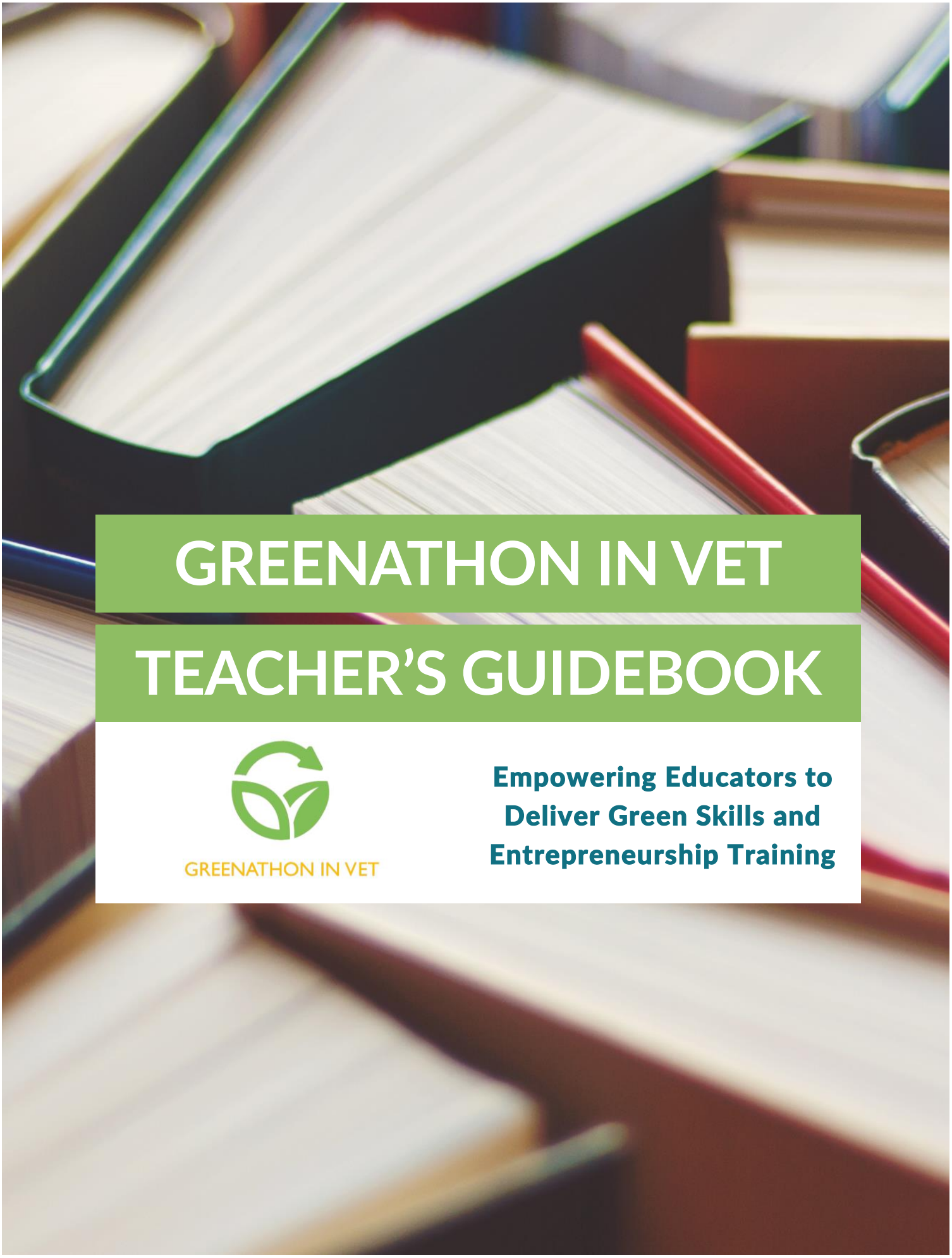

GREENATHON IN VET

TEACHER'S GUIDEBOOK

GREENATHON IN VET

Empowering Educators to Deliver Green Skills and Entrepreneurship Training

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Date: September 2025
Author: CSO
Circulation: Public
Version: v4
Project ID: 2023-1-SK01-KA220-VET-000155000

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POLICY BRIEF

Advancing Climate Education Through Curriculum Reform

Why Curriculum Reform Is Urgent

Climate literacy is uneven

Students across Europe show gaps in understanding global interconnections and local impacts.

Teachers need support

Many educators lack training or resources to teach sustainability effectively.

Innovation is stifled

New materials, like Greenathon's, are ready — but cannot be widely used without curriculum flexibility

Greenathon in VET project isn't just a teaching tool – it's a blueprint for the kind of education our future demands. By revising the curriculum to incorporate sustainability-focused materials, we empower students to become informed and responsible citizens. We're not asking for a revolution; - just a revision that reflects the reality our students are already living.

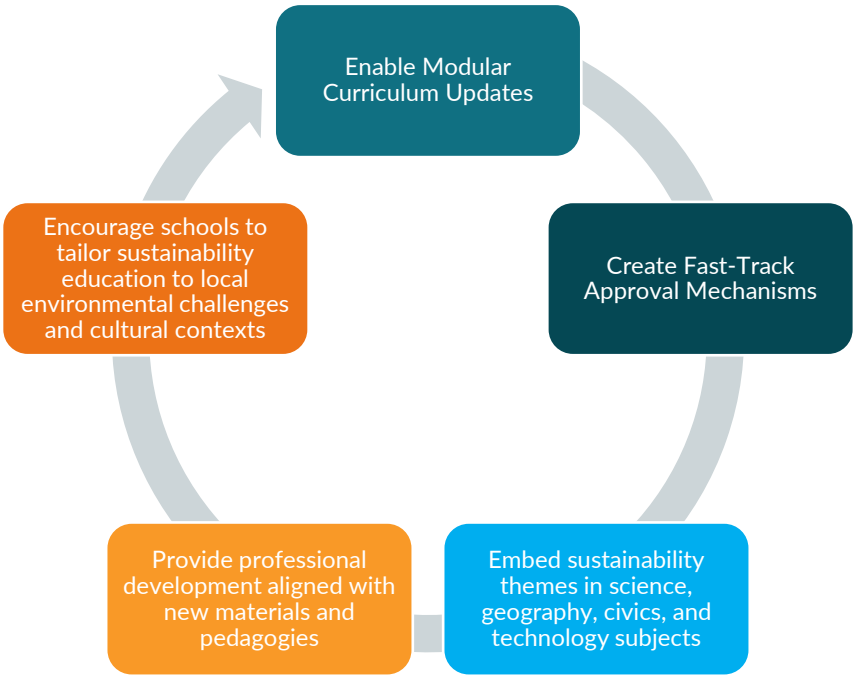
Climate change is no longer a future issue - it's a present crisis. UNESCO reports that only ~45% of countries currently include climate education at all levels. We need curriculum reform, in order to prepare students for the environmental challenges they'll inherit.

CHECK OUT

UNESCO's Greening Curriculum Guidance

Young people are calling for more relevant, action-oriented learning. Projects like Greenathon in VET respond directly to this demand, offering hands-on, interdisciplinary materials that foster real-world impact. Including such materials boosts student motivation, civic engagement, and emotional connection to learning.

Make Space for Innovative Teaching Materials



Climate change is the defining challenge of our time. Education systems must evolve to equip students with the knowledge, skills, and values necessary to respond effectively. While each country has made strides toward integrating sustainability into education, rigid curricula and slow policy cycles often hinder the adoption of innovative materials. This brief calls for targeted reforms to national curriculum frameworks to allow timely inclusion of new, high-quality resources—such as those developed through the Greenathon project.

1. INTRODUCTION

This guidebook is designed for VET teachers who will implement the Greenathon training modules, as well as for representatives of key institutions like the Curriculum Authority in each partner country, research and development institutions, and NGOs.

It supports VET teachers in delivering training materials developed through the Greenathon in VET project. It provides pedagogical guidance, facilitation strategies, and adaptation tips to ensure effective delivery - whether used as-is or customized to suit local contexts, student needs, or institutional goals.

It equips educators to foster green skills, prepare students for ideathons, and embed sustainability into vocational education. The aim of the guidebook is to support teachers with practical tools and methodologies, as well as further resources.

This guidebook is intended as a resource for

- VET educators across disciplines
- Trainers facilitating ideathon-style events
- Curriculum developers integrating sustainability into vocational programs
- VET managers, Curriculum Authority, policy and decision-makers in each partner country

You will find relevant suggestions on how to use the training material, whether as part of school curricula or as an extracurricular or optional course.

The ultimate purpose of this guidebook is to promote the Greenathon training material as a cross-curricular resource aligned with key competencies and sustainability goals.

2. PROJECT OVERVIEW

Greenathon in VET – Empowering Vocational Education and Training (VET) Students for a Green and Sustainable Future
https://greenathon.eu/

This project aims to equip VET students with green entrepreneurial skills and prepare them to participate in green ideathons —innovation competitions focused on sustainability. The project also supports VET teachers with methodologies and materials to implement this training effectively. The initiative is part of the Erasmus+ programme and includes partners from: Slovakia, Hungary, Romania, Ireland, Malta, Turkey and Portugal, so you will find all the training materials and supporting resources in 6 languages.

Key Activities:

- Development of training materials focused on green entrepreneurship.
- Creation of a methodology guide for VET teachers.
- Organisation of green ideathons within educational institutions.
- Preparation of students to generate and pitch green ideas.

Main Outputs:

- A teacher's guidebook on implementing Greenathon activities.
- A student training toolkit for green entrepreneurial skills.
- A framework for organising ideathons in VET settings.
- Enhanced awareness and capacity among students to contribute to a climate-neutral future in their respective industries.

Goals:

1. **Develop sustainability awareness:** Equip students with a clear understanding of environmental challenges, including climate change, resource depletion, and biodiversity loss. By the end of the training, students should be able to identify key sustainability issues and their impact on society and the economy.

2. **Foster green entrepreneurial skills:** Help students develop the ability to create new and practical solutions to environmental challenges, think creatively, solve problems, and design business models that are ethical and good for the environment.

3. **Promote critical thinking and innovation:** Encourage students to think carefully about environmental problems and explore new ways to solve them, using tools like design thinking, brainstorming, and eco-design to support this process.

4. **Enhance teamwork and collaboration:** Teach students how to work together to reach common goals.

5. **Prepare for ideathon participation:** Get students ready to take part in the greenathon event by teaching them skills like pitching, presenting, and coming up with ideas quickly.

6. **Support Real-World Application:** Give students the confidence and knowledge to put their ideas into action. The training encourages them to create solutions that can be used in their schools, communities, or future careers.

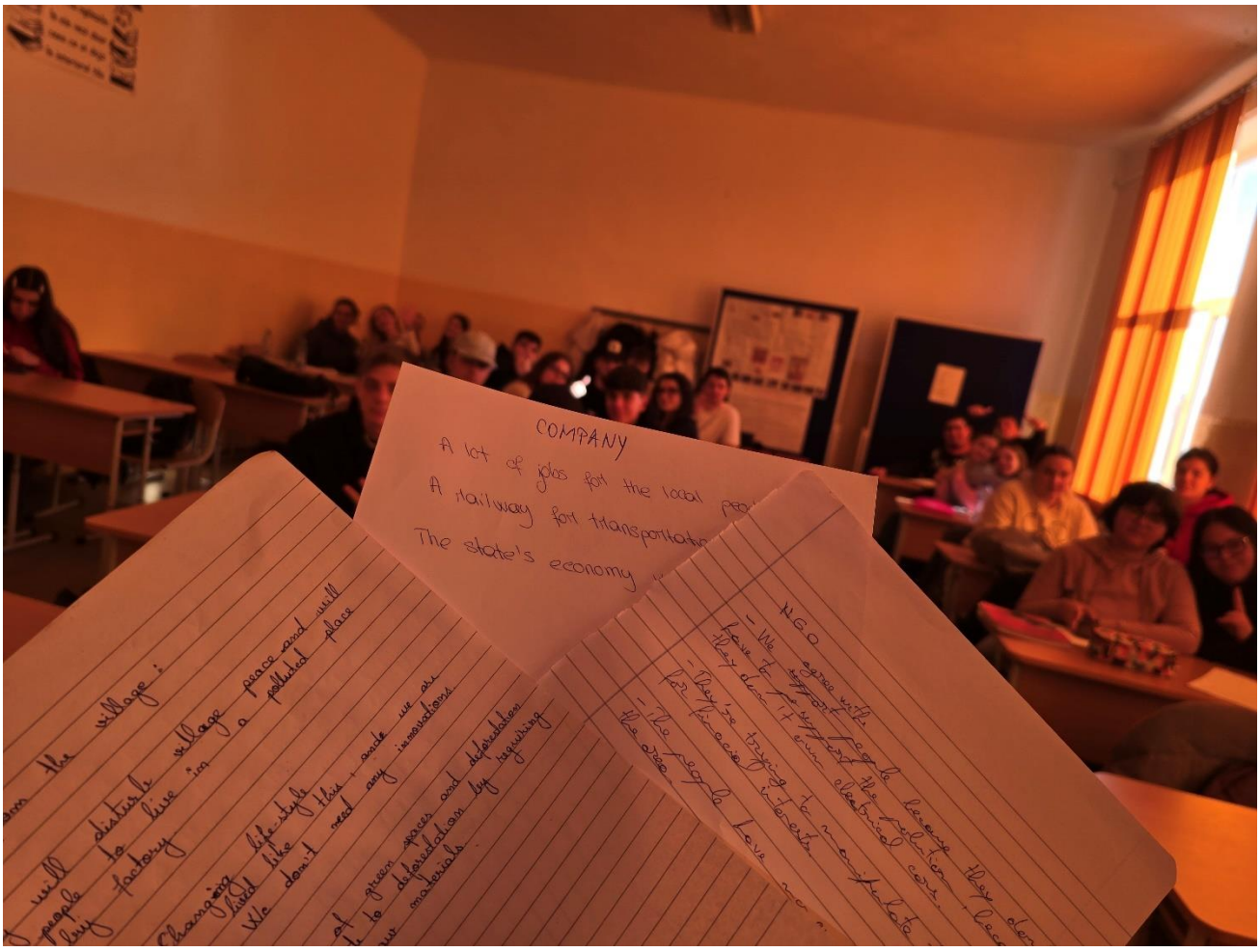


Photo by Adina Demetrian

3. TEACHING APPROACH

LEARNER-CENTERED	Students explore, create, and reflect. The focus of the training is on promoting green skills.
EXPERIENTIAL	Real-world challenges drive learning. Encourage students to discover local examples and best practices.
COLLABORATIVE	Peer learning and teamwork are central. Encourage collaboration and critical thinking. Many of the suggested activities involve teamwork and cooperation within groups.
FLEXIBLE	Materials can be used in self-study, blended, or face-to-face formats. The proposed training material can be successfully used for blended learning. You can mix face-to-face sessions, where you can discuss with students, present case studies, brainstorm ideas, etc. Additionally, students can proceed to self-paced individual study. Depending on the duration you choose, you can allow more time for one module or another. See the suggested timelines in *WP4-A1 Development of the training and green ideathon methodology* *Section 7* ***Project Timeline and Milestones***
WHOLE INSTITUTION APPROACH	Integrate sustainability across teaching, operations, and community engagement.

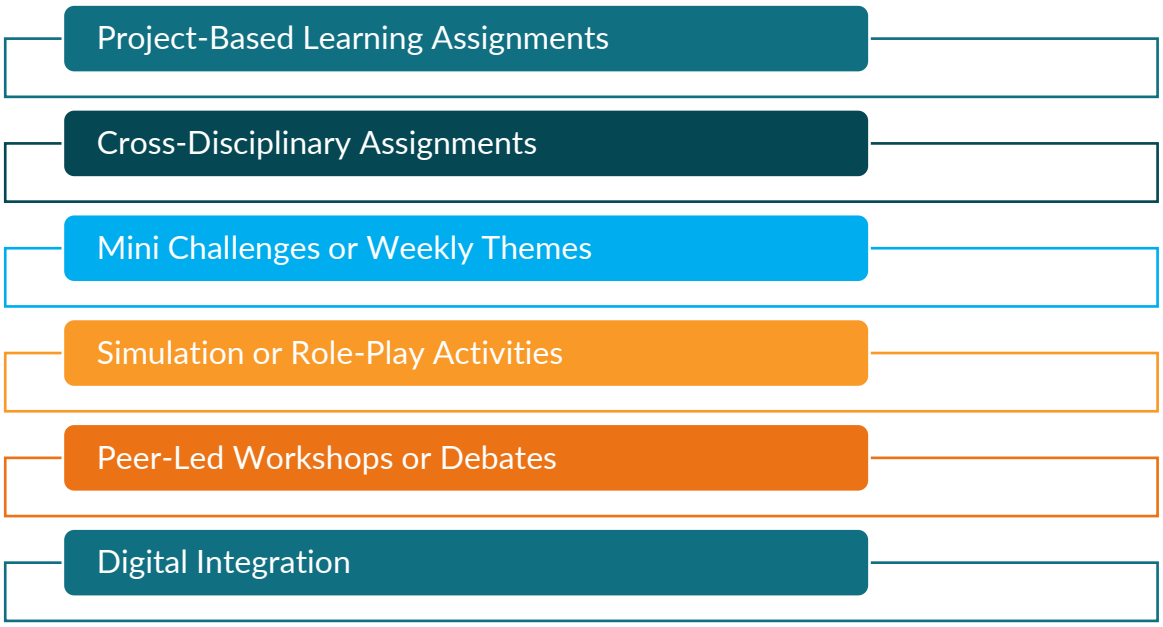
Teachers' Role

- Facilitator: Encourage inquiry and experimentation.
- Mentor: Support ideation and team dynamics.
- Evaluator: Provide feedback using rubrics and peer review tools.

Even if you will not organise a Greenathon event in itself, you can use the green idea proposal:

- Assign students to identify local environmental challenges and brainstorm innovative solutions.
- Merge science, economics, and social studies to explore sustainability from multiple angles.
- Introduce bite-sized ideathon prompts each week.
- Students act as city planners, entrepreneurs, or activists solving environmental issues.
- Encourage students to lead sessions on green innovation topics.
- Use ideathon principles to guide collaborative idea development and critique.
- Use online platforms for virtual ideation, collaboration, and presentation.

Suggested activities:



4. TRAINING MATERIALS OVERVIEW

The Greenathon training is organised into five key modules, each designed to build specific competences related to green entrepreneurship. The modules follow a logical progression from understanding sustainability challenges to preparing for a Greenathon event.

Module 1: Major Challenges of Sustainability and Climate Change

The first module introduces students to major sustainability challenges such as climate change, biodiversity loss, pollution, and food security. Through various activities and interactive learning tools, students explore the causes and impacts of these issues.

- Introduction
- Presentation
- Activities:
  - Field Trip
  - Create a Mind Map
  - Save The Climate Game (Sustainability Alliance)
  - Sustainability in Schools – Simulation Card Game
  - The Systems Thinking Playbook for Climate Change – A Toolkit for Interactive Learning

KNOWLEDGE

- Concept of climate change.
- Concept of sustainability.
- Global and local impacts of climate change.
- Concept of climate justice.
- Concept and significance of biodiversity.
- Energy consumption trends and the definition of energy mix.
- Effects and challenges of fossil fuels.
- Main food security challenges and their possible impact.
- Major waste types and pollutants, and their effect on the environment, water, climate and humans.

SKILLS

- Demonstrate an understanding of climate change and sustainability.
- Identify the impact of climate change.
- Demonstrate an understanding of the need to protect biodiversity.
- Identify the challenges related to energy consumption.
- Acknowledge the complexity of food security challenges.
- Distinguish between the different waste types and pollutants.

Module 2: Main Green Solutions

In the second module, students learn about green solutions and tools that address sustainability challenges. This module focuses on renewable energy, circular economy principles, and nature-based solutions.

- Introduction
- Presentation

KNOWLEDGE

- Concept of different renewable energy-based technologies.
- Methods to increase energy efficiency.
- Concept of food and nature-related solutions.
- Definition and elements of circular design.
- Benefits and challenges of solutions for climate change mitigation and adaptation.
- Scenarios for alternative transport modes.
- Challenges of ethical consideration and social justice.

SKILLS

- Identify the possible use of renewable energy sources.
- Understand and apply measures to improve energy efficiency.
- Explain the food and nature-related solutions and their benefits.
- Acknowledge circular methods and products.
- Identify solutions for climate change mitigation and adaptation.
- Quantify the different alternative transport modes, their benefits and challenges.
- Act with consideration of ethical and social justice.
- Identify and describe the various players involved in climate change mitigation/ adaptation and their conflicts.

Module 3: Introduction to Green Entrepreneurship

The third module introduces students to green entrepreneurship concepts and sustainable business practices. Students explore social enterprises, green supply chains, and the importance of avoiding greenwashing.

- Introduction
- Presentation
- Activities:
  - Reverse Brainstorming
  - User Persona
  - Personas Maker

KNOWLEDGE

- Concept of green entrepreneurship and greenwashing.
- Responsibilities of businesses in climate change and sustainability.
- Benefits and challenges of climate change mitigation measures on businesses.
- Benefits and challenges of climate change adaptation measures on businesses.
- Benefits and challenges of sustainability on businesses.
- Strategies for sourcing eco-friendly materials, reducing waste, and optimizing logistics.
- Definition of sustainable supply chains.
- Benefits and challenges of social enterprises and businesses addressing physical and mental health issues.
- Green opportunities for companies and green startups.

SKILLS

- Identify the responsibilities of businesses in climate change and sustainability.
- Recognise greenwashing.
- Understand and apply measures to mitigate the impact of a business on climate change.
- Understand and apply measures to adapt a business to effects of climate change.
- Design a sustainability integration plan to promote awareness in a business or a working environment.
- Acknowledge the benefits and challenges of measures.
- Define elements for making a supply chain sustainable.
- Demonstrate an understanding of the concept of social enterprises.
- Engage with funding opportunities.

Module 4: Basics for Green Idea Development

This module helps students develop and refine their green business ideas using design thinking and other ideation techniques. They also learn the importance of networking and evaluating ideas from multiple perspectives.

- Introduction
- Presentation
- Activities:
  - Identify Challenges Related to Sustainability and Climate
  - Six Thinking Hats
  - 5 Whys
  - Demonstrate an Understanding of the Process of Design Thinking
  - Evaluate Ideas in a Complex and Multidisciplinary Way
  - Draft an Implementation/ Action Plan

KNOWLEDGE

- The process of problem-framing and identifying challenges (e.g. design thinking).
- Practical knowledge of tools and methods that support problem-framing. (e.g. problem tree, SWOT analysis)
- Practical knowledge of tools and methods that support finding solutions to challenges and introducing sustainability methods and approaches. (e.g. Sustainable Business Model Canvas)
- Complex evaluation methods and tools of the idea.
- Elements of the implementation/action plans connected to the ideas.

SKILLS

- Identify challenges and problems related to sustainability and climate.
- Use tools and methods to frame a problem and find solutions for it.
- Demonstrate an understanding of the process of design thinking.
- Evaluate the ideas in a complex and multidisciplinary way.
- Draft an implementation/ action plan.
- Acknowledge the benefits of networking with local businesses, community, voluntary groups and professionals.

Module 5: Preparation for Greenathons

The final module prepares students to confidently participate in the Greenathon event by honing their pitching and teamwork skills.

- Introduction
- Presentation
- Activities:
  - Reverse Brainstorming
  - My Problem and My Solution
  - My First Business Model Canvas
  - Preparing a Pitch Deck
  - Elevator Pitch

KNOWLEDGE

- The concept of green ideathons.
- Principles of a successful idea presentation.
- Practical knowledge of tools and methods that support the presentation of their ideas. (including story-telling methods)
- Complex evaluation methods and tools of the idea.

SKILLS

- Create an idea pitch.
- Use efficiently tools and methods for presenting an idea.
- Make a presentation to introduce an idea.

5. ASSESSMENT

Summary of the Assessment Process

Throughout the training, assessment plays a pivotal role in reinforcing learning and ensuring participant engagement. Each module concludes with a quiz designed to evaluate comprehension and retention of key concepts. These quizzes not only serve as checkpoints but also encourage active reflection and application of the material.

Key Features of the Assessment Process

➔ **Module-End Quizzes**: Every module includes a short quiz of about 15 multiple choice questions tailored to its content. These quizzes help learners consolidate their understanding and identify areas for review.

The platform does not reveal which answers are not correct. The student needs to revise the questions and the study material and get a 100% score.

Teachers/ Trainers can request the answer key, along with other additional resources by accessing the *Contact* section on the platform:
https://greenathon.eu/contact

➔ **Certification Requirement**: To receive the official certificate of completion, participants are required to achieve a 100% score on all quizzes. This ensures mastery of the material and upholds the integrity of the certification.

➔ **Platform Automation:** The training platform automatically issues certificates upon successful completion, streamlining the process and providing immediate recognition of achievement.

Suggestions for Future Trainers

- **Diversify Assessment Formats:** Consider incorporating scenario-based questions, short reflections, or interactive elements to deepen engagement.
- **Offer Feedback Loops:** Provide explanations for quiz answers to enhance learning, especially when participants answer incorrectly.
- **Track Progress Visually:** Use dashboards or progress bars to help learners monitor their advancement and stay motivated.
- **Allow Retakes with Guidance:** If a participant doesn't achieve 100% on the first attempt, offer constructive feedback and allow retakes to support continuous improvement.

In addition to quizzes, we also suggest complementary assessment methods, which can be adapted according to your specific target group.

Module 1: Major Challenges of Sustainability and Climate Change

- Assessment: Debrief after each activity, then assign the quiz.

Module 2: Main Green Solutions

- Assessment: Quiz plus optional group presentations.

Module 3: Introduction to Green Entrepreneurship

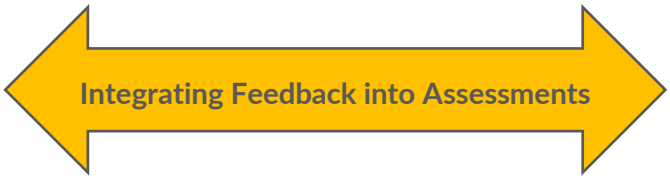
- Assessment: Quiz and peer-reviewed persona profiles.

Module 4: Basics for Green Idea Development

- Assessment: Quiz and draft action plans.

Module 5: Preparation for Greenathons

- Assessment: Quiz, pitch presentations, and certification ceremony.



1. Pre-Assessment Feedback

- Gauge Expectations: Use short surveys or informal check-ins before training begins to understand learners' goals and prior knowledge.
- Tailor Content: Adjust assessment difficulty or focus areas based on this input to better align with learner needs.

2. During Training

- Micro-Feedback Moments: After each module or quiz, include a quick "Was this clear?" or "What could be improved?" prompt.
- Interactive Polls & Reflections: Encourage learners to reflect on what they've learned and share what's working or confusing.

3. Post-Assessment Feedback

- Detailed Quiz Feedback: Provide explanations for correct and incorrect answers to reinforce learning.
- Feedback on Feedback: Ask learners how useful they found the feedback itself—this meta-feedback helps refine your approach.

4. Continuous Feedback Loop

- Surveys & Interviews: Use post-training surveys or short interviews to gather deeper insights into the assessment experience.
- Analytics & Trends: Track quiz performance data to identify patterns—are certain questions consistently missed? That's a cue to revise content.

5. Trainer Reflection & Iteration

- Review Feedback Regularly: Set aside time after each training cycle to analyse feedback and update assessments accordingly.
- Collaborate with Peers: Share feedback findings with other trainers to co-develop stronger assessment strategies.

Sample Feedback Loop

Step 1: Collect

- Distribute the feedback form immediately after training completion.
- Encourage honest responses by keeping it anonymous and short.

Step 2: Analyse

- Categorize feedback by content clarity, quiz effectiveness, pacing, platform usability.
- Identify patterns (e.g., multiple comments about quiz difficulty or lack of feedback).

Step 3: Act

- Revise quiz questions that were frequently misunderstood.
- Add answer explanations to quizzes for better learning reinforcement.
- Adjust module pacing or break longer sessions into shorter ones if needed.

Step 4: Communicate

- Share a summary of feedback findings with your training team.
- Let participants know their feedback led to specific changes — builds trust and engagement.

Step 5: Repeat

- Implement changes and re-evaluate in the next training cycle.
- Keep the feedback loop continuous, not just a one-time event.

6. TEACHER ACTIVITY GUIDE

Facilitation Tips & Answer Keys for Sustainability and Green Entrepreneurship Modules

Teaching sustainability and green entrepreneurship in VET calls for dynamic, hands-on strategies that connect theory to real-world impact.

Module 1: Major Challenges of Sustainability and Climate Change

LEARNING GOALS	Help students explore climate change, biodiversity loss, pollution, and food security.
FACILITATION TIPS	• Use local examples (e.g., nearby river pollution, urban heat islands) to make issues relatable. • Encourage students to think in systems—how one issue (e.g., deforestation) affects others (e.g., biodiversity, climate). • Debrief after games to connect choices with real-world consequences.
SAMPLE ANSWERS	• Field Observation: Students may note litter, lack of green space, water pollution, etc. • Mind Map: Should show links between causes (e.g., fossil fuels) and effects (e.g., rising temperatures, food insecurity). • Game Reflection: Look for insights like "I didn't realize how small changes could reduce emissions."

Module 2: Main Green Solutions

LEARNING GOALS	Discover practical solutions to sustainability challenges.
FACILITATION TIPS	• Encourage students to explore local green initiatives (e.g., bike-sharing programs, composting). • Use visual aids to explain circular economy principles. • Promote group discussion on feasibility and impact of solutions.
SAMPLE ANSWERS	• Solution Match-Up: ❖ Plastic pollution → Biodegradable packaging

	❖ Energy consumption → Solar panels ❖ Food waste → Community composting • Local Innovation: Students might highlight a zero-waste store or green tech startup. • Circular Economy Brainstorm: Ideas could include modular phone design, clothing rental services, etc.

Module 3: Introduction to Green Entrepreneurship

LEARNING GOALS	Understand sustainable business models and ethical practices.
FACILITATION TIPS	• Use real ads or product packaging to analyze greenwashing. • Encourage empathy in persona creation—what does the customer truly care about? • Reverse brainstorming works best in small groups with a facilitator guiding the "flip."
SAMPLE ANSWERS	• Reverse Brainstorming • Bad practice: Excessive packaging → Good practice: Minimal, recyclable packaging • Bad practice: Misleading eco-labels → Good practice: Transparent certifications • Persona: Should include name, age, goals, values (e.g., "Lena, 22, wants sustainable fashion without high cost") • Greenwashing Detective: Look for vague claims like "eco-friendly" without proof.

Module 4: Basics for Green Idea Development

LEARNING GOALS	Develop and refine green business ideas using design thinking.
FACILITATION TIPS	• Use "Six Thinking Hats" as a structured group activity- assign each hat to a student. • Encourage students to dig deep with "5 Whys"- don't settle for surface-level answers. • Invite local professionals for feedback on networking maps and idea drafts.

SAMPLE ANSWERS	• Challenge Identification: - Problem: Fast fashion waste → Cause: Overproduction → Affected: Environment, workers • Six Thinking Hats: - Creativity hat might suggest upcycled fashion; Negative hat might highlight cost barriers. • 5 Whys: "Why is there food waste?" → "Because of overbuying" → "Why overbuy?" → "Poor planning," etc. • Networking Map: Should include NGOs, local businesses, mentors, etc.

Module 5: Preparation for Greenathons

LEARNING GOALS	Prepare students to pitch their ideas and collaborate effectively.
FACILITATION TIPS	• Use peer review to refine pitches- students give each other feedback. • Practice elevator pitches in pairs, then present to the class. • Celebrate progress with certificates or showcase events.
SAMPLE ANSWERS	• Problem & Solution: - Problem: Plastic waste in schools → Solution: Refillable station and reusable bottles • Mini Canvas: - Value: Reduce waste; Customer: Students; Activities: Awareness campaign; Revenue: Bottle sales • Pitch Deck: - Slide 1: Problem → Slide 2: Solution → Slide 3: Market → Slide 4: Impact → Slide 5: Call to Action • Elevator Pitch: - "We're tackling school plastic waste with refill stations and reusable bottles- saving money and the planet."

7. ADAPTING THE MATERIALS

Factors to Consider

- **Student Profile**: age, prior knowledge, vocational field, skills and other requirements (e.g. digital skills)

  Take into account that the age of the students will influence their knowledge and understanding of the materials, as well as the ideas they produce.

- **Local Context**: environmental priorities, industry trends, local best practices (e.g. green business)

  If possible, give students tangible examples and experiences.

  GreenBiz Awards Winners

  Malta celebrates eco-conscious micro and small businesses annually. Categories include sustainable fashion, plant-based food, and cruelty-free wellness products.

  EarthCheck-Certified Tourism Initiatives

  Madeira has become a model for sustainable tourism, with impressive reductions in landfill waste and emissions. Local businesses align with eco-tourism goals.

- **Institutional Resources**: time, tech access, partnerships

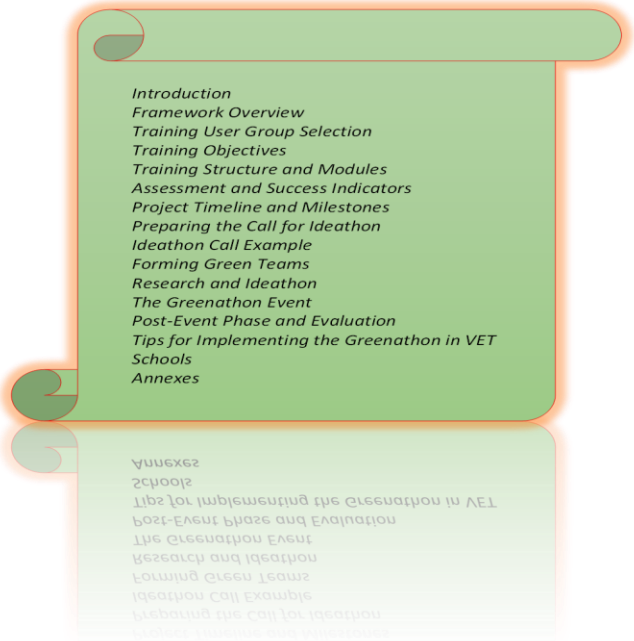
  You can adapt the length of the training and, as a consequence, the amount of content you intend to deliver, according to your institution's particularities.

Adaptation Tips

- Replace case studies with local examples.
- Translate materials or simplify language for accessibility.
- Modify activities for online or hybrid delivery.
- Integrate modules into existing curriculum units.
- Download module slides and modify according to the students' needs.

8. ORGANISING A GREENATHON EVENT

- Pre-Event: Define challenge themes, form teams, schedule mentoring.
- During Event: Facilitate pitching, invite judges, showcase ideas.
- Post-Event: Reflect, celebrate, and connect students with real-world opportunities.



You can find the following sections, in more detail, in WP4-A1 *Development of the training and green ideathon methodology*

Our experience during the Greenathon

In Romania, 78 students, aged 15-17, attended the pilot training. At the end of the training, 21 green proposals were submitted. Students worked in groups of up to 5. The presentations were PPTs, videos, posters.

The proposals were evaluated in terms of

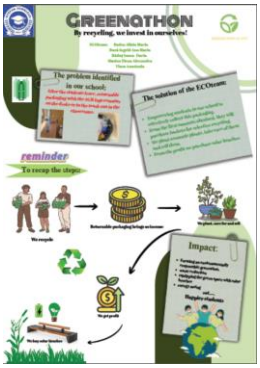
Feasibility & Implementation
Environmental Impact
Innovation & Creativity
Student Engagement & Ownership
Sustainability & Longevity
Presentation & Communication

The 3 finalist projects will be implemented in the following year.

The 3 winning projects

EcoTeam

Plan to collect returnable containers to fund aromatic plant seed purchases and cultivation.



TreeCycle

Want to plant trees for the people who would like to help but lack the time.

Pocket Your Impact

Plan to distribute portable ashtrays to students, to reduce cigarette butts around campus.

Here are some other examples of the students' proposals:

- SnackSwitch- subscription for healthy eating
- Screens Off, Nature On- club to promote outdoor activities
- Fragrance production and marketing
- Green Cool- solar-powered air conditioning for schools
- Solar Grow- urban farms/ Urban vertical farms/ Rooftop gardens
- Eco-move- sustainable urban transport
- Traffic app
- Refill station
- Smart cities

Why did the jury decide to select those 3 projects?

1. The students chose real, specific problems in their community.
2. The students convinced the jury that they can actually implement their ideas, with support from the school or local organisations.
3. Although their campaigns do not have a broader impact yet, they can influence the student community, which is about 1000 students.
4. Their ideas were original, inspired from their own life, they were neither too general, nor too ambitious for the students' scope of action.
5. The proposals were creative and the students' engagement to work in teams was visible.
6. The projects can be sustained beyond the initial implementation.
7. The 3 proposals were supported by presentations, videos and visual aids (posters).

Suggested evaluation criteria

Criteria	Description	Points awarded
Feasibility & Implementation	- Can students realistically carry out the project with available resources? - Is the timeline manageable within the school term or project window?	**2**
Environmental Impact	- Does the proposal address a genuine environmental issue (e.g., energy saving)? - What is the scale of the impact—local, school-wide, or broader? - Are the outcomes measurable? (e.g., kg of waste reduced, no. of trees planted)	**2**
Innovation & Creativity	- Is the idea original or does it offer a fresh take on an existing solution? - Does it encourage creative thinking or problem-solving?	**2**
Student Engagement & Ownership	- Are students actively involved in planning and execution? - Does the proposal promote teamwork and collaboration? - Is there a sense of student ownership and enthusiasm?	**2**
Sustainability & Longevity	- Can the project be sustained beyond the initial implementation? - Is there a plan for maintenance or follow-up? - Could it inspire future green initiatives?	**1**
Presentation & Communication	- Is the proposal clearly articulated and well-organized? - Are visuals, prototypes, or demonstrations used effectively? - Is the rationale behind the project compelling and well-supported?	**1**
Total score		**10**

9. NOTES FOR TEACHERS - HOW TO MOTIVATE STUDENTS

Encourage creativity and experimentation	Celebrate small wins and progress	Foster a culture of sustainability beyond the classroom

Based on best practices in sustainability education and our own experience across countries, here's a set of motivational strategies and messaging tips trainers can use to spark student engagement:

1. Make It Personal and Relevant

Students are more likely to engage when they see how sustainability affects their own lives and communities.

- Use local environmental issues as case studies.
- Encourage students to identify problems they care about (e.g., waste in their school, air pollution in their city).
- Frame the Greenathon as a chance to make a tangible impact.

This is not just a school project, it is your chance to shape the future of your community.

2. Highlight Real-World Impact

Position the Greenathon as more than a classroom activity - it's a launchpad for change.

- Showcase past student projects that led to real improvements.
- Invite local environmental groups or businesses to mentor or sponsor.
- Emphasize that their ideas could be implemented or scaled.

Your solution could be the one that gets adopted by your city council.

3. Gamify and Celebrate

Make participation exciting and rewarding.

- Use team challenges, badges, and leaderboards.
- Offer certificates, public recognition, or prizes for creativity and impact.
- Celebrate all contributions, not just winners.

Every idea counts. Every voice matters. Let's celebrate your green genius.

4. Leverage Peer Influence

Students are more likely to join when they see their peers involved.

- Recruit student ambassadors to promote the event.
- Share testimonials and videos from past participants.
- Encourage group sign-ups to build social momentum.

Join your friends and be part of something bigger than the classroom.

5. Integrate into Curriculum Where Possible

In contexts like Ireland and Slovakia, where partners were non-VET institutions, integration was harder. Future trainers can:

- Collaborate with teachers to embed Greenathon themes into science, geography, or civic education.
- Offer flexible formats-after-school clubs, weekend workshops, or online modules.

Whether you're studying biology or business, sustainability belongs in your toolkit.

6. Use Higher Education as a Model

Turkey's success with higher education students shows that autonomy and relevance matter.

- Give students ownership over their projects.
- Connect Greenathon themes to career paths-environmental science, urban planning, entrepreneurship.

This project could be the start of your career in sustainability.

Photo by Escola da APEL

10. EMBEDDING SUSTAINABILITY IN VET

Integration Strategies

Full integration in the national curriculum	Integration in the school - partly adaptation of the modules	Integration in the school - after-school programme

I. Full integration in the national curriculum - challenges

Integrating sustainability-focused training like your Greenathon material into formal curricula can be incredibly impactful but it's not without its hurdles. Challenges in Curriculum Integration:

1. Curriculum Rigidity

- Many national curricula are tightly structured, leaving little room for new or interdisciplinary content.
- Sustainability topics often don't fit neatly into traditional subjects like math or literature.

2. Lack of Teacher Training

- Teachers may feel unprepared to deliver sustainability content confidently.
- There's often limited professional development focused on Education for Sustainable Development.

3. Resource Constraints

- Schools may lack access to digital platforms, materials, or time to implement new modules.
- In some regions, even basic infrastructure can be a barrier.

4. Institutional Resistance

- Change can be met with skepticism, especially if sustainability is seen as "extra" or non-essential.
- Some educators may view it as political or ideological rather than educational.

5. Assessment Misalignment

- Traditional exams may not measure the skills developed in sustainability training (e.g., collaboration, systems thinking).
- Teachers may struggle to evaluate project-based or experiential learning.

6. Student Engagement Gaps

- Without clear incentives, students may not see the relevance of sustainability training.
- In non-VET institutions, reaching students outside vocational tracks can be harder.

II. Integration in the school - partly adaptation of the modules

1. Curriculum Mapping

- Identify where sustainability themes naturally align with existing units.
- Example: Module 2 (Main Green Solutions) can be linked to lessons on eco-friendly materials and energy-efficient design.
- Use curriculum mapping tools to visualize overlaps and gaps.

2. Thematic Embedding

- Introduce Greenathon topics as sub-themes within broader units.
- Example: In a business or entrepreneurial education course, Module 3 (Green Entrepreneurship) can be embedded into units on marketing, ethics, or business planning.
- Use Greenathon activities (e.g., Reverse Brainstorming, Business Model Canvas) as enrichment tasks.

3. Supplemental Projects

- Use modules as the basis for capstone projects, group assignments, or portfolio tasks.
- Example: Students in a culinary program could explore sustainable food sourcing (Module 1) and develop a green business concept for a zero-waste café (Module 4).

4. Cross-Disciplinary Collaboration

- Partner with teachers from other departments to co-deliver modules.
- Example: A design teacher and an entrepreneurship teacher co-facilitate Module 4 to help students develop green product ideas and pitch them.

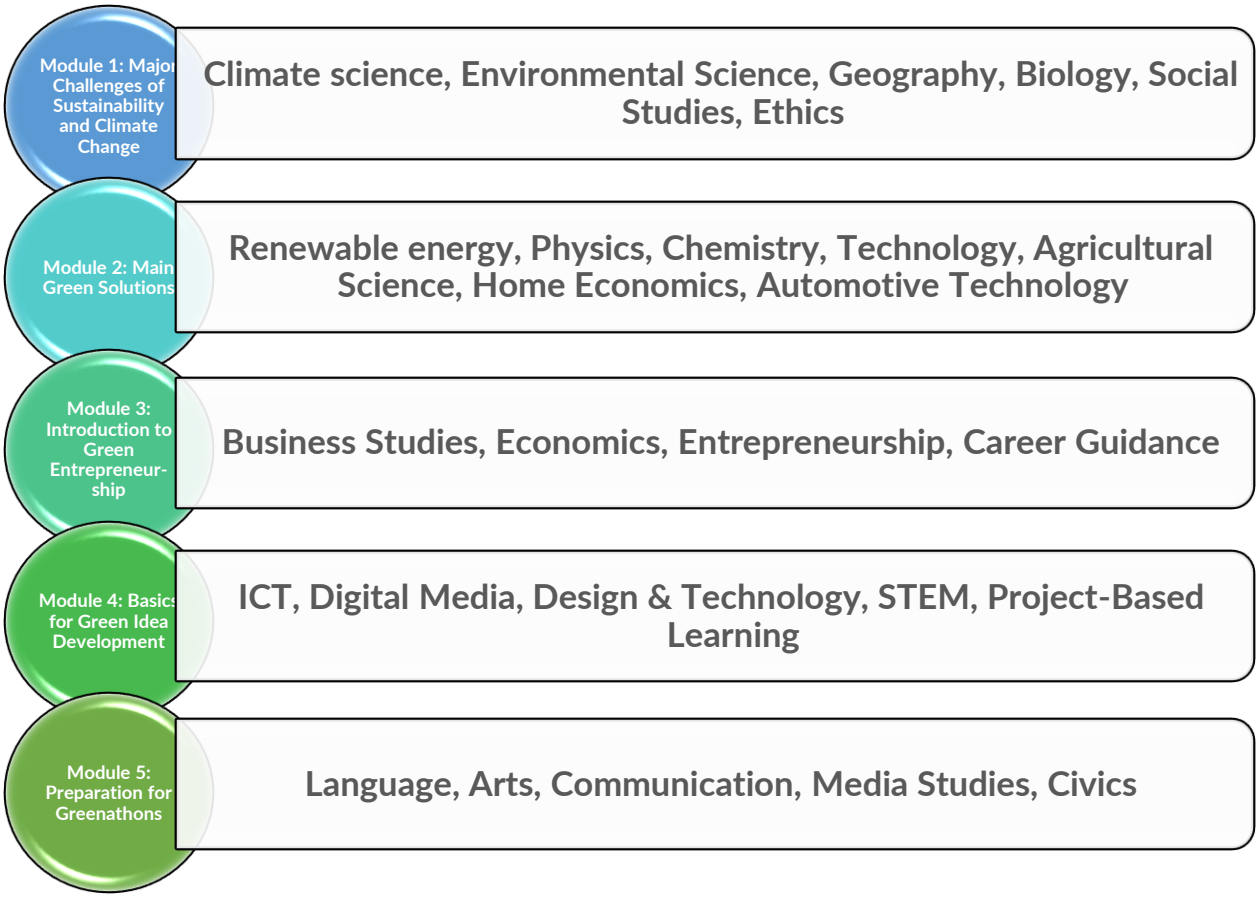
5. Flexible Delivery Formats

- Modules can be used in:
  - ❖ Weekly lessons (e.g., one module per week)
  - ❖ Workshops or bootcamps (e.g., intensive ideathon prep)
  - ❖ Blended learning (self-study + in-class facilitation)
- Teachers can choose full-module delivery or select specific activities and quizzes.

Notes on Subject Integration by Country

	Romania	Strong VET focus; green modules can be embedded in technical subjects and transversal skills.
	Slovakia	Emphasis on CSPE, Transition Year projects, and enterprise education—ideal for Greenathon integration.
	Ireland	Active in sustainability education; modules can align with science, tech, and vocational tracks.
	Madeira, Portugal	National curriculum includes environmental awareness and entrepreneurship; Greenathon fits well in science and elective courses.
	Turkey	National curriculum includes environmental awareness and entrepreneurship; Greenathon fits well in science and elective courses.
	Hungary	VET schools offer environmental and business modules; Greenathon can bridge them.
	Malta	Cross-curricular projects and environmental education are encouraged; Greenathon can be part of Personal, Social and Career Development (PSCD).

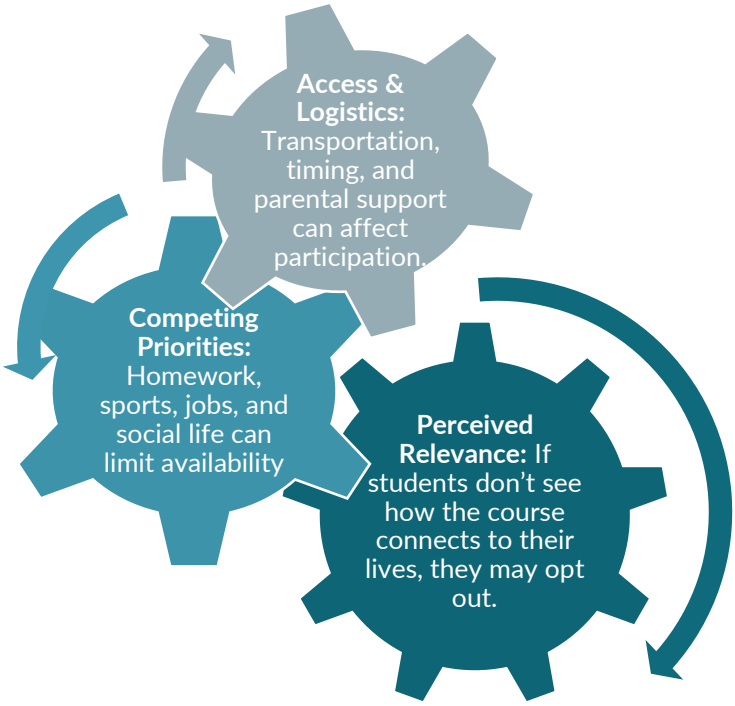
Sample Integration Scenarios



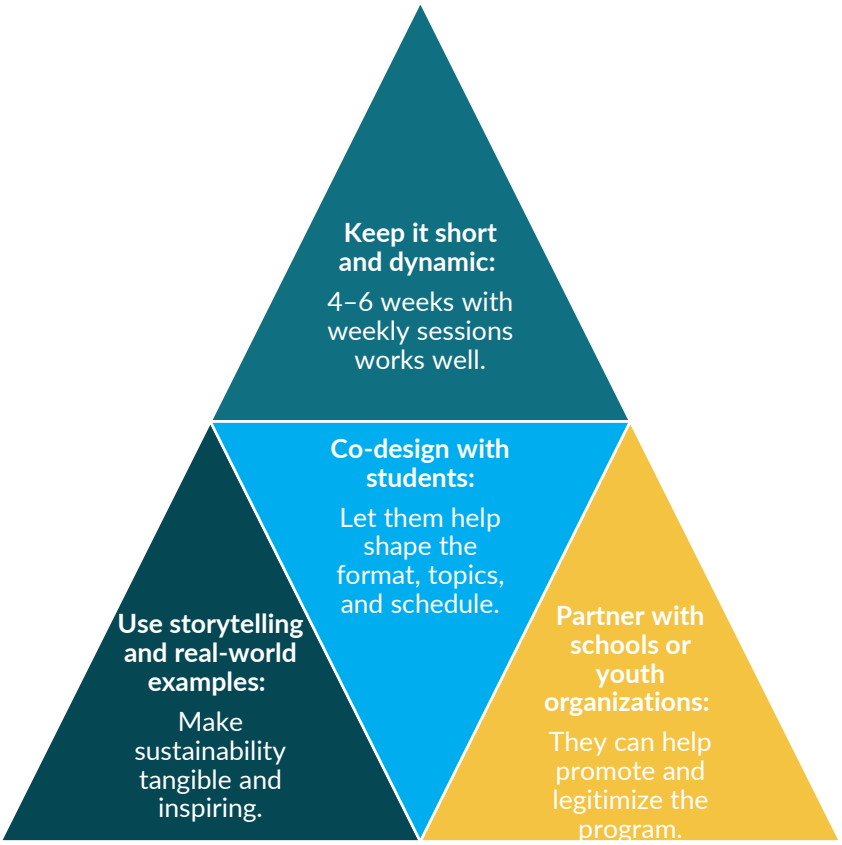
III. Integration in the school - after-school programme

Presenting the course as an after-school program could absolutely be successful-if it's framed and delivered in a way that resonates with students' interests, values, and aspirations. Research shows that high-quality after-school programs can significantly boost engagement, especially when they offer enrichment, real-world relevance, and opportunities for personal growth.

⚠ Challenges to Consider



Tips for Success



11. TRANSFERABILITY TO HVET/HE

The educational materials and methods developed within the scope of Greenathon in VET can be effectively applied at the higher education level. The program focuses on sustainability, green entrepreneurship and innovative thinking skills; it can be associated with interdisciplinary and elective courses, workshops and project-based learning activities and incubation programs at universities.

Due to its interdisciplinary character, the program can be included in the educational content of different fields such as engineering, business, environmental sciences and social sciences. Modules enrich the higher education curriculum, particularly on topics such as sustainable business models, environmentally conscious design, and the circular economy. It can also be labelled with some of the sustainable development goals.

Gaining sustainable entrepreneurship skills makes students better prepared for the labour market and allows them to plan their career strategies with a focus on green transformation. It benefits as an important resource for universities; entrepreneurship programs and extracurricular activities (clubs, competitions, ideathons). It can be used as a support for students to implement their innovative ideas in workshops, entrepreneurship centers and incubation programs.

The transfer of the education program to the higher education level expands the impact of the program and allows the culture of sustainability and green entrepreneurship to reach a wider student base.

Resources & Further Reading

- https://www.outdoortopia.org/post/3-inspiring-case-studies-sustainability-education-in-action
- https://www.unesco.org/sites/default/files/medias/fichiers/2024/09/Greening%20curriculum%20guidance%20Teaching%20and%20learning%20for%20climate%20action.pdf
- https://www.unesco.org/en/climate-change/education
- https://www.iau-hesd.net/action/unesco-report-addressing-climate-change-issues-education-2021

ANNEX: SAMPLE COURSE CURRICULUM

Example for integrating VET materials

Curriculum at School Decision (CDS) – GREENATHON IN VET WITH STEAM

Curriculum area: Mathematics and natural sciences

Type: Optional as a new subject

Grade XII, Philology

Duration: 1 academic year (1 hour/week)

Proposers: Prof. Ionică Mihaela, Prof. Babalean Aurel

1. PRESENTATION NOTE

Interdisciplinarity is part of a modern education that aims, at the end of the educational path, an optimal integration of the educated person into society, the labor market and the family. A holistic knowledge of the world brings with it a deep understanding of the micro- and macrocosm, scientific and moral landmarks and adaptability to social and economic conditions.

The optional subject addresses students in the 12th grade, human profile, specialization in "Philology". It comprises 34 hours divided by the structure of the school year to 1 hour/week.

The "Greenathon in VET" project provides training materials on green entrepreneurial skills and an opportunity to generate green ideas for VET students. As there is an emerging need in the market for a skilled workforce that is aware of the impact of their sector on the environment and climate, it is important to improve the green entrepreneurial skills of VET students. Thus, the ultimate goal of the project is to encourage students to develop their own green ideas and prepare them to participate in ideathons, enabling them to contribute to a greener, more sustainable and climate-neutral future in their industry as professionals, while developing the competences of teachers.

Although we cannot stop climate change, we can either adapt to these changes by planning for climate uncertainties and risks or try to reduce greenhouse gas emissions to mitigate climate change. An assessment of the knowledge acquired in this course will be carried out both during and at the end of the modules through test solutions, worksheets, mini-projects based on a given theme, portfolios in accordance with the curriculum of this optional and new technologies, practical workshop-type activities. The focus of this CDS is on the context, how it changes and how it affects our lives and society. It tries to form positive behaviors and initiate concrete actions towards sustainability. The main idea emphasizes the importance of science in all undertakings following school education, the usefulness of the correct analysis of the environmental situation but also of the social environment. After that, methods can be found to implement life cycle assessment, circular and proximity economy or related international standards and certifications.

The students thus begin to discover the new needs for ecological skills and related career opportunities. The purpose of completing this CDS is to provide the opportunity to develop their own strategy for a new professional career based on green entrepreneurship.

2. GENERAL COMPETENCES

1. Developing the capacity for scientific analysis of the context and its needs;
2. Making transdisciplinary transfers and integrating information from different fields using new technologies;
3. Understanding the notion of sustainable behavior;
4. Solving theoretical and practical problems with an impact on the environment using teaching aids available at the educational institution;
5. Developing one's own professional career and green entrepreneurship strategy.

3. SPECIFIC COMPETENCES

Specific competences	Learning activities
• Identifying the major challenges of sustainability and climate change; • Developing learning skills based on scientific investigation to find the main green solutions; • Presenting the results of a scientific experiment in the form of a project; • Evaluating the quality of scientific information, based on the sources and methods that generated it; • Knowing and applying various methods/techniques for searching for information • Knowing specific concepts necessary for initiating ecological entrepreneurship • Expressiong their view on the role of science in the development of society, as it represents a source of pollution, but also a valuable tool in combating it; • The development of green ideas.	• Documentation activities related to polluting factors, using specialized sites; • Carrying out mini-projects on a given theme using information technology; • Essays and reports on various topics with the use of current documentation technology, stimulating creativity and innovation; • Activities to present the results of a scientific experiment using various educational sites; • Documentation activities and completing some worksheets using classical and ICT tools; • Solving various problems using information technology; • Oral and group debates on topics related to the topics proposed in the curriculum of this optional course; • Use of platforms and specialized sites for finding and developing green entrepreneurship ideas; • Debates on combating intellectual theft and evaluating information in the online environment.

4. VALUES AND ATTITUDES

General competence	Values and attitudes
1. Developing the capacity for scientific analysis of the context and its needs	1. Expressing a creative way of thinking, in structuring and solving work tasks; 2. Awareness of the social, economic and moral impact of using technology; 3. Forming habits of choosing appropriate applications in approaching work tasks; 4. Manifesting positive attitudes towards science and knowledge in general; 5. Manifesting the willingness to evaluate/self-evaluate practical activities; 6. Manifesting initiative and willingness to approach various tasks; 7. Forming the ability to use legislation in future enterprises; 8. Understanding the impact of information technologies in society as well as the connections between information and communication technology and understanding the notions of chemistry; 9. Developing the skills necessary for individual and team activities. 10. Knowledge of the impact of science on the environment in order to protect it, also with scientific tools.
2. Carrying out transdisciplinary transfers and integrating information from different fields using new technologies;	
3. Understanding the concept of sustainable behavior;	
4 Solving theoretical and practical problems with an impact on the environment using teaching aids available at the educational institution;	
5. Developing your own professional career and green entrepreneurship strategy.	

5. METHODOLOGICAL SUGGESTIONS

To ensure the acquisition of all the information contained in this curriculum, the following activities will be carried out, designed to cover a wide range of skills:

- Documentation, investigation and integration exercises of new technologies in various situations;
- Multiple choice exercises; the role of sciences in the development of society, the fact that it represents a source of pollution, but also a valuable tool in combating it;
- Development of green ideas.
- Use of platforms and specialized sites for finding and developing green entrepreneurship ideas;

- Debates on combating intellectual theft and evaluating information from the online environment.
- True/false exercises;
- Exercises to complete worksheets using the applications suggested in the requirements;
- Practical applications in physics and chemistry laboratories or using sites dedicated to science, ecology, technology;
- Developing individual or group projects using new technologies;
- Carrying out an objective, reliable and relevant evaluation.

6. CONTENTS – 34 weeks of courses/ 34 hours

Topics	Duration (hours)
1. Learning based on scientific investigation	3
1.1. Problematization, operationalization, data collection, data analysis;	
2. The main pollutants of water, soil, air	
2.1. Influence on the environment	2
2.2. Ways to prevent/reduce pollution: (e.g. purification - water treatment plant); composting (soil), adsorption, removal of sulfur compounds, nitrogen oxides, volatile organic compounds (air).	3
3. From the greenhouse effect to the greenhouse in my garden	
3.1. Smart irrigation of the garden using robotics	2
3.2. The sun and applications of the photoelectric effect;	2
4. Photoelectric cells - photovoltaic panels	
4.1. Solar constant; Is geographical position important?	2
4.2. Energy efficiency analysis;	3
5. Do plants need UV light? UV-A and UV-B, accelerating photosynthesis - benefits and risks	2
6. Techniques for protecting the garden from pests and weeds naturally	2
7. Traditional methods of food preservation. Responsible preservation through chemical methods.	2
8. What are E-numbers? Hidden information on a food label	2

7. EVALUATION METHODS

The assessment of the knowledge acquired by students in this course will be carried out under different forms of evaluation.

1. By classical methods:

- Systematic observation;
- Summative tests;
- Oral and written communication in various forms of the results of the investigated activity;
- Feedback questionnaires;
- Evaluation technologies are correlated according to the requirements of the physics and chemistry curriculum.
- The use of ICT offers the teacher the possibility of creating and applying interactive online tests for the evaluation of knowledge / puzzles / games in the proposed applications;
- Portfolio in electronic format with mini-projects carried out by students;

2. Final topic: Develop your own sustainable business idea! - 9 hours

Examples of sustainable entrepreneurship:

1. Garden in restaurant/canteen – business idea based on the circular economy principle.

- Reducing the amount of food wasted by applying the zero waste cooking principle;
- Practical application – Brochure with culinary recipes based on the "zero waste cooking" principle
- Advantages of the "Garden in the restaurant":

  a. A garden or mini farm at the location would only bring advantages: aesthetic and reliable (serving meals in or near an edible landscape),

  b. fresh and responsible production for the final consumer, with 0 impact on the environment because transportation is eliminated,

  c. offering vegetables and plants on the menu that are often difficult to procure precisely because of the distance.

  d. local production of salads, perishable fruits (strawberries), aromatic plants, edible flowers.

  e. reduction of food waste: we collect and consume from a locally produced plant only what is strictly necessary in line with the demand of direct consumers.

2. Apartment Garden – Growing and Valorizing Microplants

The advantages of this business idea are a small investment but it involves the following steps:

- Adequate cultivation space that requires a relatively stable microclimate;
- Providing a growing substrate; finding the specific substrate for each plant;
- Identifying the necessary equipment;
- Purchasing quality seeds according to preferences but also market demand;
- Choosing plants according to the growth cycle;

Business start-up costs:

  - Recurring expenses;
  - Initial expenses;
  - Marketing costs;
- d. Investments in equipment and infrastructure.

8. BIBLIOGRAPHY AND INFORMATIVE MATERIAL

- Modules 1,2,3,4,5 – GREENATHON IN VET 2023-1-SK01-KA220-VET-000155000 with the related bibliography;
- https://agroexpert.md/rus/agromenedzhment/solutii-naturale-pentru-combaterea-daunatorilorsi-bolilor-din-gradina

Youtube:

- https://www.youtube.com/watch?v=I5dsYA3khEk&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=51
- https://www.youtube.com/watch?v=IhBwO3Suh9I&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=58
- https://www.youtube.com/watch?v=qhxat6jAHlY&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=66
- https://www.youtube.com/watch?v=jMEeUkrThlQ&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=76
- https://www.youtube.com/watch?v=Bspupf9Fxzs&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=87
- https://www.youtube.com/watch?v=FsSTNrCSYmo&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=93
- https://www.youtube.com/watch?v=rTsIFvmOYK0&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=106
- https://www.youtube.com/watch?v=AgjbKg4-pM4&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=119
- https://www.youtube.com/watch?v=Pxi-rQHzg1Q&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=121
- https://www.youtube.com/watch?v=hwJWn7EI6Ec&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=128
- https://www.youtube.com/watch?v=h752kDMDK2I&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=154
- https://www.youtube.com/watch?v=Z49r6PP5Ji4&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=181
- https://www.youtube.com/watch?v=UpJFmSoU7ZQ&list=PLoaTLsTsV3hPJDj7YaE1p0kPp1GdWPcV&index=212
- https://www.youtube.com/watch?v=hXlSicZE9jI
- https://www.youtube.com/watch?v=iRM2eDYGNvg
- https://www.youtube.com/watch?v=3RA43nx1k2g
- https://www.youtube.com/watch?v=UES0hsceO34
- https://www.youtube.com/watch?v=IM_ycNK4ZAk