



GROWING GREEN FRAMEWORK

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Abstract

This project result is a competence framework on green entrepreneurship, which has been built based on each partner's experience on entrepreneurship and considering the implementation and key results of the pilot activities.

This output consists of:

- Pilot evaluation report, including information about the duration, participants, target group, methodology, tested activities results of the pilot sessions as well as feedback from students and teachers and proofs of evidence.
- The Green Entrepreneur Competence Framework, including references to the EU framework (GreenComp and EntreComp), skills covered by the Growing Green pilot and the competency matrix, built up using Bloom Taxonomy.
- Guidelines for the integration of the Growing Green approach and results into existing curriculums or VET courses in the form of pilot lessons plans and general tips and recommendations related to aspects to be considered when wishing to integrate the Growing Green approach into school curricula. The chapter also includes aspects which could be further improved.

Through this report, we aim at ensuring transferability of the Growing Green approach, tools and methods and at contributing to the recognition and validation of knowledge, skills and competences acquired through the approach.

This report can be used by other VET teachers and education authorities interested in integrating green entrepreneurship competences in their existing curriculum and training courses and by other organisations or companies to upskills workers or unemployed people and to transfer them key skills requested in the labour market nowadays.

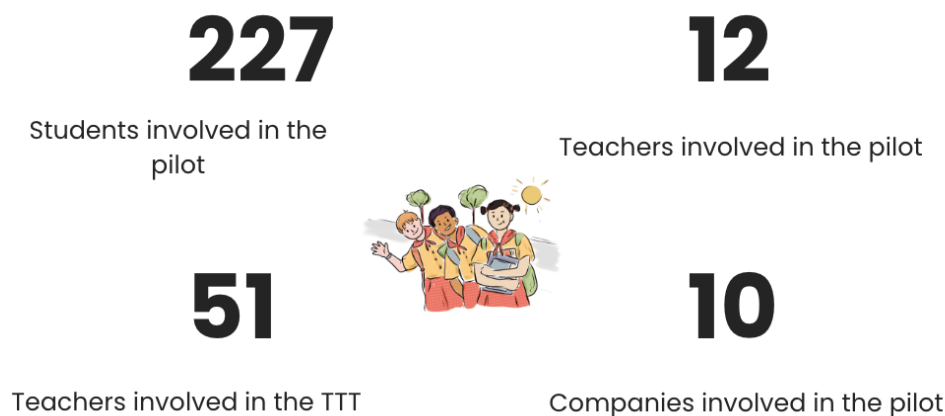
Additional materials about the pilot have been published on the [Growing Green Instagram profile](#) and Growing Green LinkedIn profile.

Pilot evaluation

All partners have produced reports describing the main features and results from their pilots. Reports present an overall description of what was done and learned from the pilot implementation; from the preparatory measures to the pilot itself as well as how the pilot impacted students and teachers.

A structure to summarise the pilot results has been prepared and shared for schools to record their materials in an homogenic manner.

The piloting phase was held in the different countries between **October 2023** and **April 2024** and saw the participation of **227 Students**; **12 Teachers directly involved in the pilot** and a total of **51 involved in the Train the Trainers**; **10 Companies**.



The following activities from the Growing Green Manual have been tested:

Chapter 1:

Activity *"Build your EntreComp Giant!"*

Activity *"Lichens monitoring"*

Chapter 2:

Activity *"Thinking of sustainable solutions with the six thinking hats"*

Activity *"Generating ideas" / Brainstorming & Reverse Brainstorming*

Activity *"Generating ideas" / Worst idea method*

Activity *"Customer empathy map"*

Chapter 3:

Activity *"The circular business idea"*

Activity *"Storytelling and pitching the circular business ideas"*

Activity *"SDG memory game"*

Chapter 4

Activity *"Finding semi-optimal solutions in the European Green Deal context"*

Chapter 5

Activity *"Green Inclusion: inside and outside school"*

Activity *"Empathy – skill for companies with green inclusive purposes"*

Denmark

Duration

The piloting phase of the project took place in the period between October 2023 and March 2024 at the Erhvervsskolen Vestjylland in Skjern. It was conducted through 5 different sessions of one day or half a day.

Participants

15 students, 3 teachers during the pilot and 6 overall; 2 companies involved ([Ringkøbing Skjern](#) and [Raekker Moelle Brewery](#))

Learners' peculiarities

The target group of the pilot includes young people and adults aged 16 and up, who needed extra and specially organised support around education, clarification and development of work and functional ability, employment and independent living.

The target group represents students with the following issues:

- Little or no experience with the labour market
- Challenges with job retention
- Undecided jobs and employment opportunities
- Delayed development
- Learning difficulties
- Lack of sense of identity and self-esteem
- Lack of self-awareness
- Lack of social belonging
- Emotional challenges
- Psychiatric diagnoses such as ADHD, Autism and Asperger's

Methodology

The methodology applied, tailored to the specific requirements of the target group, involved hands-on, practical learning experiences both in traditional classroom settings and in alternative learning environments such as the workshop, farm, and kitchen. By integrating the Growing Green gamification and utilising tools like Lego bricks, students were successfully engaged in imagining and creating sustainable solutions.

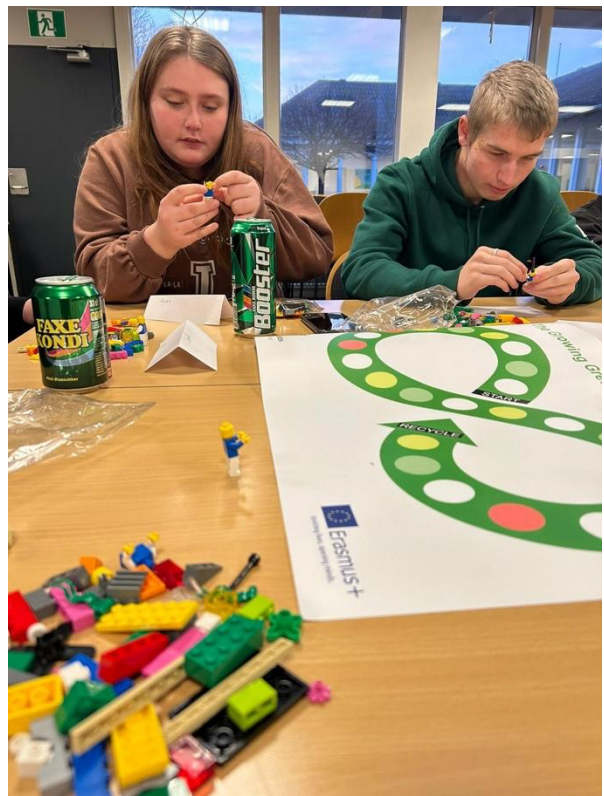
Results

The results of the piloting phase demonstrate a marked increase in knowledge and competences among students in working with and in developing green competences, circular solutions, and sustainable practices.

Feedback from students and teachers

Feedback from both students and teachers has been overwhelmingly positive, with students expressing enthusiasm for the project's hands-on nature and concrete learning experiences.

The lessons impacted the students significantly, fostering curiosity, engagement, and practical understanding of sustainability principles. Students particularly enjoyed the interactive elements of the project, such as playing the Growing Green game and participating in hands-on activities like waste collection and upcycling workshops. The resources provided were deemed adequate and highly beneficial in facilitating student learning and project implementation. Overall, the project has laid a solid foundation for continued exploration and integration of green competences within our school curriculum.



Italy

Duration

The piloting phase of the project took place in the period between December 2023 and February 2024 at the Liceo Scientifico Marie Curie in Giulianova (Abruzzo). It lasted 24 hours as 6 different sessions (of two hours) were conducted for each project.

Participants

44 students; 3 teachers during the pilot and 12 overall; 3 companies involved ([Lo Spicchio](#); [Linea Verde Garden](#); GF Torneria automatica di precisione).

Learners' peculiarities

The target group of the pilot include 16-18 years old students within dual system studies.

Methodology

The methodology included project-based learning, case studies, workshops with entrepreneurs.

Results

The Growing Green project proved to be a valuable learning experience for both students and teachers. By fostering a combination of entrepreneurial and sustainability skills, this program has empowered students to become agents of positive change.

Students explored real-world examples of businesses, from local farmers markets to innovative solar panel companies, and gave their contribution to improve them from a green point of view. Students also analysed these businesses through the lens of EntreComp, identifying the gaps in the market related to sustainability and built a business model around them. As for the Green Deal, students were spurred to go through it and discovered how to reduce carbon emissions and promote renewable energy.

This gave context to three projects (*"A SLICE OF GREEN"*, *"GF IN THE GREENENTREFUTURE"* and *"GREEN IS BETTER"*)

As for teachers, the project fostered collaboration, curriculum development, and a deeper understanding of sustainability for educators. More specifically, it helped achieving the following:

- **Enhanced Curriculum Integration:** the project provided a practical tool for teaching environmental science and business concepts. Teachers gained new expertise to integrate sustainability into future lessons.
- **Collaboration Skills:** teachers collaborated with real businesses
- **Project-Based Learning:** witnessing the positive impact of student research on a local business reinforced the value of project-based learning. Teachers gained confidence for implementing similar projects in the future.
- **Professional Development:** The project exposed teachers to current trends in green business development. Achievements can be used to update curriculum materials and potentially lead to further professional development opportunities focused on sustainability in education.

The entire project was recognized as PCTO (the Italian "Dual System"), which made it more attractive for students, teachers and parents as well (30 credits were given to each participant student).

Feedback from students and teachers

The general impact was quite rewarding; students who initially had little interest in environmental issues became more engaged. Class discussions about green businesses became lively and creative.

Students were initially surprised about having to play games as part of the project, but their reactions were positive; they felt engaged in the creation of brand-new prototypes.

Teachers welcomed the project being its topics (green and circular economy) deeply contemporary.



Slovenia

Duration

The piloting phase of the project took place in the period between October 2023 and April 2024 at the GEPS (Slovenia). It lasted 48 hours in total (32 hours with students attending the logistic program and 16 hours with students attending the electrotechnical program).

Participants

128 VET students aged between 14-18 years; 2 teachers during the pilot and 12 overall; 2 companies involved Dijaški dom Portorož, [AzureFilm](#)

Learners' peculiarities

The pilot project targeted two distinct student cohorts. Firstly, it encompassed 106 VET students from 14 to 18 years old attending the logistics program (1st year = 55, 2nd year 32 and 3rd year = 19). These students already have basic knowledge in entrepreneurship.

Secondly, it involved 22 VET students from 17 to 18 years old attending Electrotechnical program. Due to the program's technical focus, students lack experience in entrepreneurship and circular economy subjects. They are also not used working in teams.

Methodology

Group working, case-studies, learning by doing, research actions, project-based learning, pre and post assessment, home activities, school events.

Logistics program

The training was conducted across different years of the logistics program simultaneously. Second and third-year students completed individual home activities on their own, while first-year students completed all exercises in the classroom with the teacher.

All students were introduced to the European green and sustainable concept. They learned about the principles of EntreComp, GreenComp, the EU Green Deal and the SDG topics in connection with each subject's program. All students participated using the group work method, and the groups devised green strategies for sustainable urban food security. Additionally, third-year students simultaneously developed circular and green business ideas and registered students' companies at JA Slovenija. Their work is presented in the form of a Compendium. After each group work, there is a conclusion in the form of a presentation or a brief report. For each activity, they were also assessed, so they gradually accumulated credit points, which represented additional motivation.

Electrotechnical program

Sessions typically commenced with ice-breaking activities designed to engage students and cultivate interest in unfamiliar topics. Subsequently, homework assignments were provided to implement learned concepts, contributing to the goal of developing green and functional circular projects.

Students were introduced to European green and sustainable concepts, encompassing EntreComp, GreenComp, the EU Green Deal, and SDG topics. These principles were then applied to address school challenges, such as improving the efficiency and eco-friendliness of the school cafeteria.

Additionally, two very different companies were presented to inspire new ideas and encourage the development of more circular businesses, utilising all the newly acquired skills during the project. One was Azurefilm, which makes filaments for 3D printing, and the

other was Dijaški dom Portorož, a dormitory for students during the school year and a hostel during the summer tourist season.

After a few sessions, students were assigned various homework tasks related to activities from the manual. Periodically, we reviewed these assignments, discussing ways they could be improved and highlighting their strengths. The assignments included idea development, customer empathy mapping, creating a logo, slogan, and pitch for a company, among others. All these tasks were applied to develop the final version of their company.

Results

Logistics program

While working in groups, students demonstrated initiative and responsibility towards their colleagues. However, they also had to resolve conflicts, as there was always someone responsible for something, and when tasks were not completed, it was necessary to resolve the situation. Students had the opportunity to make public appearances in front of their classmates. 3rd students even pitched their business ideas to lower grades and experienced the adrenaline of presenting to a broader audience. The 2nd year students actively listened to their performances and evaluated them using GreenEuro (Growing Green Game).

Electrotechnical program

Students came up with four circular and green companies (Filabottle; Fix-n-Flip; ReFresh; Green Edge Consulting). Specific areas where students showed the most significant progress: Generating ideas, circular and green economy, digital literacy, public presentation. Additionally, they have enhanced digital skills thanks to the home activities and public presentation skills thanks to the pitching sessions.

Overall

The analysis of students' responses to the questionnaire before and after the project on entrepreneurship and the green and circular economy reveals significant improvements in their attitudes and behaviours towards green and entrepreneurial competences. Three main areas stand out in terms of notable enhancement: sustainability appreciation, critical thinking, and collective action.

Despite their technical background, students demonstrated a more critical approach towards the ideas presented. They often scrutinised various aspects of an idea, pointing out potential problems and challenges. However, this critical thinking was constructive, as it led to deeper discussions and innovative problem-solving. Despite initial scepticism, they remained committed to finding viable solutions, showcasing their determination to overcome obstacles and contribute to the project's success. This combination of critical analysis and problem-solving skills reflects their dedication to integrating sustainability principles into their technical education.

Additionally, they learned that there is no perfect solution to all problems, and that progress is made in smaller steps. This realisation fostered a pragmatic approach among the electrotechnical students, encouraging them to focus on incremental improvements rather than seeking idealised solutions. Embracing this mindset, they approached each challenge with resilience and adaptability, recognizing that even small advancements contribute to overall progress towards sustainability goals. This appreciation for gradual progress reflects their maturity and practical understanding of complex real-world issues, further enriching their educational experience in entrepreneurship and the green economy.

Feedback from students and teachers

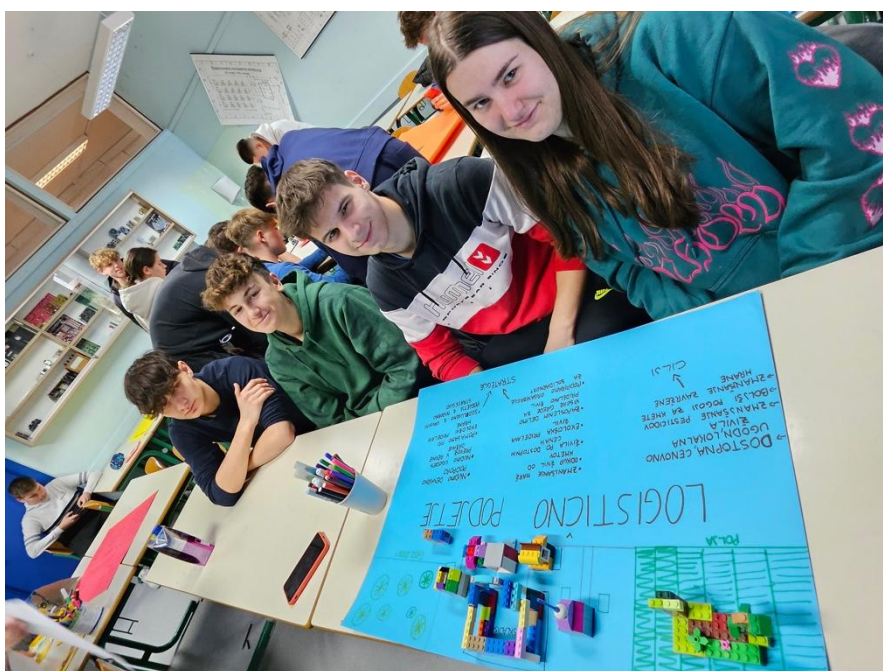
The collaborative nature of the project encouraged teamwork, communication, and problem-solving skills, preparing students for success in both academic and professional settings.

By connecting theoretical concepts to practical exercises and real-life examples, the piloting approach effectively bridged the gap between classroom learning and real-world application, equipping students with the knowledge and skills needed to navigate complex challenges and contribute positively to society. They had to think on their own and apply their knowledge across a broader spectrum, which was quite different from the scholastic environment, where most questions and problems are well-defined within certain pre-studied cases.

Most of them were concerned with the presentation and pitches since they don't like to expose themselves in that way. This was a visible issue for them, but working as a team made their live/public presentations easier to handle, since they were not alone on the stage; this way, they learned to overcome at least partially their fear of public performances, which boosted their confidence and will be crucial when they look for job opportunities or even after they secure one.

Students came to understand that building a successful company involves much more than simply creating a product or service; it requires consideration of various factors beyond the final deliverable. Finally, due to their technical background, they were a bit disappointed that they did not have sufficient time to develop real prototypes.

Overall, we as teachers are sure that this project will have a positive impact on their academic and future professional skills, as well as on their personal development.





Spain

Duration

The piloting phase of the project took place in the period between December 2023 and February 2024 at the Salesianos Urnieta (Basque countries). It lasted 24 hours as 5 different sessions were conducted for each target group mentioned below.

Participants

40 students; 4 teachers during the pilot and 21 overall; 3 companies involved: [Goiener](#), [Irizar](#), [Plastigaur](#).

Learners' peculiarities

The pilot project targeted two distinct student cohorts. Firstly, it encompassed higher grade students, typically comprising individuals with completed high school education >18. Secondly, it included middle grade students, who have completed secondary education and fall within the age range of 16 to 18 years old.

For the Higher Vocational Education and Training (H-VET) specialisations, the focus areas were Automation and Industrial Robotics, Electrotechnical and Automated Systems, and Graphic Design. Meanwhile, the Vocational Education and Training (VET) specialisations comprised Electromechanical Maintenance and Electrical and Automatic Installations.

Methodology

H-VET: active methodologies to work on the activities proposed in the manual were used. In addition, in following the indications of the activity, whenever possible students were given a leading role and were responsible for their learning. The work has been done in small groups of 4-6 people where different roles have been assigned to be able to work correctly during the piloting.

VET: Students do not have enough autonomy and responsibility to be fully autonomous. Therefore, the exercises and reflections have been more guided. On the other hand, the activities have been included as a curricular activity and within the framework of the business and entrepreneurship module.

Results

Students have worked more comfortably when the activities have been carried out within the subject of business and entrepreneurship; they have been more active and have made better use of the time. On the other hand, higher grade students have not been able to get engaged in piloting, they have other priorities, and it is difficult for them to leave their daily subjects to work on this type of project.

Regarding the work with companies, it has been very useful and enriching for the students to be able to develop the activities proposed by companies. Additionally, once they have worked on elements such as circularity, green economy or social economy, they have been able to include these concepts in their projects and prototypes. They have developed some very interesting business ideas from the point of view of circularity.

Feedback from students and teachers

The students were satisfied with the companies visited. These visits gave a coherence to the pilot and expectations about green and entrepreneurial skills. The activities prototyped in the manual were successful for both groups of students. However, they were better in the middle grades, as we introduced them into the curricular hours. Regarding the compendium material, it cost them a lot to produce it, as they did not see a direct benefit such as the qualification, they did not dedicate time to it. In the case of the middle grades, we used this compendium to increase their grades, which is why they did the activity better.

Feedback from teachers was generally good. The manual and activities were the right ones. Teachers stressed the importance of working with companies as they value these examples positively to give coherence to the pilot. In addition, the companies highlighted the importance of in-house skills as a response to environmental challenges.





The Green Entrepreneur Competence Framework

The EU frameworks

To assess the pilots' results the Growing Green partnership has created an assessment based on descriptors of competences contained in **EntreComp** and **Greencomp** frameworks. Checklists have been prepared and shared to compile the students' competences.

These checklists include a list of competences that must be assessed and are contained in the guidelines distributed to the school before the pilot implementation.

A first session (ex-ante assessment) has been conducted before students started the training session. The second one was conducted at the end of the pilot. The overall process is centred on measuring acquired knowledge, improved skills and the changed attitudes because of training.

GreenComp

GreenComp is a reference framework for sustainability competences.

The aim of GreenComp is to foster a sustainability mindset by helping users develop the knowledge, skills, and attitudes to think, plan and act with empathy, responsibility, and care for our planet.

GreenComp consists of **12 competences** organised into the **four areas** below:

- 1) Embodying sustainability values
- 2) Embracing complexity in sustainability
- 3) Envisioning sustainable futures
- 4) Acting for sustainability

Do you want to know more? Visit [GreenComp JRC website](#)



EntreComp

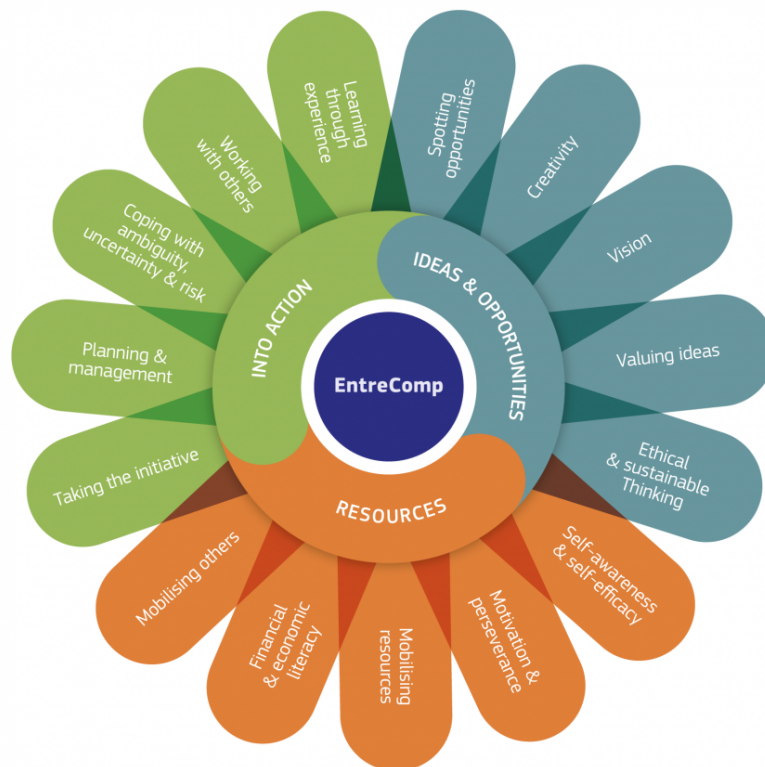
EntreComp is the European reference framework to support a shared, comprehensive understanding of entrepreneurship as a competence. EntreComp identifies the knowledge, skills, and attitudes we all need to act upon opportunities and ideas, and transform them into social, cultural, or financial value for others.

EntreComp maps out **3 key areas** to entrepreneurship competence:

- 1) Ideas and opportunities
- 2) Resources
- 3) Into action

Each area contains 5 competences, and together these make up the **15 competences** that create an entrepreneurial mindset.

Do you want to know more? Visit [EntreComp JRC website](#) and [EntreComp EU website](#)



The Green Entrepreneur Competence Framework matrix

Most changing skills among students

The **Green Entrepreneur Competence Framework** has been constructed based on the ex-ante and post assessment questionnaires and more specifically based on the comparison of skills before and after the pilot. The “*most changing skills*” that means skills that have improved the most among students in the different pilot sessions have been pre-selected to fill in the structure of the **Green Entrepreneur Competence Framework**.

The **results** are summarised below:

GREEN COMP

Competences related to sustainability values:

- *Appreciate sustainability. I reflect on how my daily actions have an impact on the environment, and I make sure that this impact is as small as possible. For example, I try to produce as little waste as possible.*
- *Support justice. I respect the interests of future generations and believe that everyone should have access to a healthy environment. That is why I am concerned, for example, about the consequences of deforestation.*
- *Promoting nature. I care about a harmonious relationship between nature and humans. For example, I collect waste from the countryside even if I did not produce it myself.*

Competences related to the understanding of sustainability and its complexity:

- *Thinking critically. I know that personal and cultural contexts influence my thinking, so I reflect on and question the information I receive through social media about the state of the environment, for example.*
- *Contextualizing problems. I consider it important to listen to other people's opinions to find the most sustainable solution to a problem.*
- *Thinking systemically. When thinking about solutions to protect the environment, understand that these cannot be applied to all parts of the world.*

Competences related to the ability to foresee sustainable futures

- *Adaptability. I am able to look for more sustainable alternative solutions and have abandoned unsustainable practices such as the use of plastic packaging.*
- *Projecting a future. I am able to visualise society reaching a sustainable future, and I can even think of steps to follow.*

Competences related to the ability to act in favour of sustainability

- *Act collectively. I am able to coordinate and collaborate with others to solve sustainability problems, e.g., ensuring waste recycling.*
- *Have individual initiative. I have the initiative to act and contribute to achieving sustainability.*

ENTRE COMP

Competences related to ideas and opportunities

- *Spotting opportunities. I am able to use my imagination to identify opportunities to create value.*
- *I think ethically and sustainably. I am able to assess the consequences and impact of my actions in order to act responsibly.*
- *Creativity. I have the ability to develop creative and innovative ideas.*
- *Value ideas. I am able to recognise the potential of ideas and make the most of them.*

Competences related to resource management

- *Motivation and perseverance. I am able to stay focused and not give up despite pressure and adversity.*

- *Self-awareness and self-efficacy. I believe in myself and consider that I am capable of influencing the course of events.*
- *Financial and economic literacy. I am financially and economically literate, so I can estimate the costs of realising an idea and manage its financing.*

Action-related competences

- *Planning and management. I am able to define priorities and develop short, medium, and long-term action plans.*
- *Working with others. I am able to cooperate with others and resolve conflicts to develop ideas and implement them.*
- *Facing uncertainty, ambition, and risk. I am able to make decisions even when the outcome of the action is uncertain.*

The matrix

EQF 3

EQF4

	Competence	Relation with the GREENCOMP & ENTRECOMP	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Remember	Appreciate sustainability: Remember the importance of minimising environmental impact in everyday actions	Valuing sustainability and promoting nature (Embodying sustainability values - area 1 GREENCOMP)	The student is able to identify everyday actions that affect the environment.	The student is able to explain how these actions impact the environment.	The student is able to implement practices to reduce environmental impact.	The student is able to compare different actions and their environmental effects.	The student is able to judge the effectiveness of the sustainable practices implemented.	The student is able to develop new strategies to minimise environmental impact.
	Support justice: Remembering the importance of access to a healthy environment for future generations	Supporting fairness and Valuing sustainability(Embodying sustainability values - area 1 GREENCOMP)	The student is able to recognise the importance of a healthy	The student is able to describe how current actions affect	The student is able to participate in initiatives that promote	The student is able to assess different policies and their impacts	The student is able to determine the fairness of existing environment	The student is able to propose new policies or improvements to

			environme nt for all.	future generation s.	environme ntal justice.	on environme ntal justice.	ntal policies.	existing ones to promote environme ntal justice.
Understa nd	Contextualising problems in a sustainable way: Understanding the importance of listening to different opinions in order to find sustainable solutions	Problem framing and critical thinking (Embracing complexity in sustainability - area 2 GREENCOMP)	The student is able to remember the importance of considerin g multiple opinions.	The student is able to explain how different perspectiv es can influence problem solving.	The student is able to integrate diverse opinions in the formulatio n of solutions.	The student is able to break down complex problems into their contextual componen ts.	The student is able to assess the effectiveness of solutions that integrate multiple perspectiv es.	The student is able to create innovative solutions that consider a wide range of opinions.
	Sustainable comprehensive thinking: adopting a holistic approach to observe and understand the reality that includes listening to and considering others and the surrounding environment	systems thinking (Embracing complexity in sustainability - area 2 GREENCOMP); ethical and sustainable think and spotting opportunities (ideas and opportunities - area 1 ENTRECOMP)	The student is able to understand the basics of systems thinking and ethical considerati ons.	The student is able to explain the role of systems thinking in sustainabi lity.	The student is able to identify opportunities for ethical and sustainabl e actions.	The student is able to analyse complex systems and identify sustainabl e opportunit ies.	The student is able to evaluate the impact of different componen ts within a system.	The student is able to design holistic and sustainabl e solutions that consider ethical implicatio ns.

Apply	Projecting a sustainable future: Applying the ability to visualise and plan steps towards a sustainable future	creativity and vision (ideas and opportunities - area 1 ENTRECOMP); exploratory thinking (Envisioning sustainable futures - area 3 GREENCOMP)	The student is able to envision a sustainable future.	The student is able to describe the steps needed to reach that future.	The student is able to implement actions that lead to a sustainable future.	The student is able to examine the feasibility of different future scenarios.	The student is able to assess progress towards achieving a sustainable future.	It is capable of designing long-term strategies for a sustainable future.
	Taking sustainable individual initiative: Apply personal initiative to contribute to sustainability	individual initiative (Acting for sustainability - area 4 GREENCOMP); taking the initiative ((Into Action - area 3 ENTRECOMP)	The student is able to recognise the importance of personal initiative in sustainability.	The student is able to explain how individual action can contribute to sustainability.	The student is able to take individual action to promote sustainability.	The student is able to assess the impact of individual actions.	The student is able to judge the effectiveness of personal initiatives.	The student is able to innovate in taking personal initiatives for sustainability.
Analyse	Ethical and sustainable assessment for sustainable ideas: Analyse the consequences of actions and assess their impact in order to act responsibly	Ethical and sustainable thinking (ideas and opportunities - area 1 ENTRECOMP); critical thinking (Embracing complexity in sustainability - area 2 GREENCOMP)	The student is able to recognise the importance of thinking ethically and sustainably.	The student is able to explain how ethical decisions affect sustainability.	The student is able to make decisions that consider ethical and sustainable implications.	The student is able to evaluate the ethical consequences of various actions.	The student is able to judge the sustainability and ethics of decisions.	The student is able to develop innovative approaches to act in an ethical and sustainable way.

	Financial and economic assessment for sustainable ideas: Analysing costs and managing finance to realise sustainable ideas	Financial and economic literacy (Resources - area 2 ENTRECOMP); futures literacy (Envisioning sustainable futures - area 3 GREENCOMP)	The student is able to recognise basic financial and economic concepts.	The student is able to explain the importance of financial and economic literacy.	The student is able to manage finances to realise ideas.	The student is able to assess the economic viability of projects.	The student is able to judge the financial sustainability of initiatives.	The student is able to develop sound financial and economic plans.
Evaluate	weighing the value of sustainable ideas. recognising the potential of an idea in terms of sustainability (challenges to solving present or future problems related to the concept of sustainability)	Valuing ideas (ideas and opportunities - area 1 ENTRECOMP); system thinking and problem framing (Embracing complexity in sustainability - area 2 GREENCOMP)	The student is able to recognise the potential of ideas.	The student is able to explain how an idea can generate value.	The student is able to implement ideas that have potential.	The student is able to assess the potential impact of ideas.	The student is able to judge the effectiveness and value of the ideas implemented.	The student is able to generate and develop ideas that maximise value.
	Facing uncertainty and being adaptable: being prepared to address uncertain situations linked to sustainability issues and making informed decisions despite the risks	Adaptability (Envisioning sustainable futures - area 3 GREENCOMP); coping with uncertainty, ambiguity and risk (Into action - area 3 ENTRECOMP); motivation and perseverance (Resources - area 2 ENTRECOMP)	The student is able to recognise the presence of uncertainty and risk.	The student is able to explain how ambition can mitigate risks.	The student is able to make informed decisions in situations of uncertainty.	The student is able to assess the risks and opportunities of uncertain decisions.	The student is able to judge the effectiveness of strategies for dealing with uncertainty.	The student is able to develop innovative strategies to manage uncertainty and risk.

Create	Planning and management of sustainable actions: Creating and managing short, medium and long-term action plans to implement sustainable ideas	Planning and management (Into Action - area 3 ENTRECOMP); systems thinking (Embracing complexity in sustainability - area 2 GREENCOMP)	The student is able to identify the necessary steps for planning.	The student is able to explain the importance of good planning and management.	The student is able to develop and follow action plans.	The student is able to evaluate the effectiveness of implemented plans.	The student is able to judge the quality of management and planning.	The student is able to innovate in the creation of management and action plans.
	Collaboration and engagement with others: Creating effective collaborations and resolving conflicts to develop and implement ideas	Working with others (Into Action - area 3 ENTRECOMP); Coping with uncertainty, ambiguity and risk (Into Action - area 3 ENTRECOMP)	The student is able to recognise the importance of teamwork.	The student is able to explain how cooperation improves results.	The student is able to collaborate effectively with others.	The student is able to assess the dynamics and effectiveness of the team.	The student is able to judge the impact of collaborative work.	The student is able to develop new forms of collaboration and conflict resolution.
	Act collectively for sustainability: Create coordinated efforts to solve sustainability problems together with others	Collective action (Acting for sustainability - area 4 GREENCOMP); Mobilizing others (Resources - area 2 ENTRECOMP)	The student is able to identify the importance of collective action in sustainability.	The student is able to explain how collaboration can solve environmental problems.	The student is able to participate in collective initiatives for sustainability.	The student is able to evaluate the effectiveness of collective efforts.	The student is able to determine the impact of collective action on sustainability.	The student is able to organise and lead collective movements for sustainability.

Recommendations

Lesson plans

Guidelines for the integration of the Growing Green approach and results into existing school curricula or VET courses are provided in the form of **pilot/lesson plans**. The plans presented below have been tested in the piloting phase by the different schools and demonstrate how the Growing Green approach can be suitable to be applied in different contexts (e.g. VET courses in different sectors; students with special needs) and in courses with different duration. General recommendations and tips conclude this chapter.

Example from Denmark

Short introduction: Lessons are planned based on a practical approach so that the students can relate them to the Growing Green teaching materials. The plan is suitable for SEN students.

LESSON 1

- *The students get an introduction to climate change and there is a debate in class, about how the school and the surrounding area can help to reduce climate change.*
- *Students play a Kahoot about this*
- *Students are introduced to the measures that are being taken at the school (solar cells, reducing food spills, recycling of materials, cheap work clothes project...)*
- *The students come with ideas that they think we can improve here on site.*

LESSON 2

- *Students are introduced to SDG n. 14, primarily with a focus on what consequences it has when we dump waste in nature and how this ends up in the world's oceans.*
- *Students are divided into groups and together with a teacher go out and collect waste.*
- *A collection is made in class, where the students present their experience of the day, and their experience of the waste that is thrown into nature.*

LESSON 3 and 4

- *The students are introduced to the Growing Green game.*
- *The students play the game and build their own sustainable company using Lego bricks.*
- *The students give feedback on the game and present their company to the other students.*

LESSON 5

- *The students visit an Innovest incubator/technology centre and meet companies and work together on a circular project.*
- *They get an introduction on how circular the building/structure is; they get an overview on how important the focus on sustainability and green energy is and how people can optimise consumptions.*
- *They work on a circular collaboration project with separation and recycling of materials from streetlamps.*

Example from Italy

Short introduction: Lessons are planned based on the goals of the EU Green Deal. During the activities, meetings with the involved local companies are organised, to better know the needs of the stakeholders and let students see first-hand how to contribute to improve the local economy.

LESSON 1

- Introduction of the project and materials: Warm up activities on KEY CONCEPTS
- Before showing the [European Green Deal website](#), students are asked about the EU green policies, the Agenda 2030, and their personal involvement in green issues. Pages 5 and 6 from the Manual are explained. The lesson aims at building interest and motivation in the students.
- Activity for warm up/Icebreaker: divided into groups, students will make research on what Entrepreneurship, Circular Economy and Natural Capital are.
- Activity from the Manual, LET'S GO DEEPER INTO THE TOPIC + Exercises pg. 10
- Concluding activity: In class, students are asked to play [this Kahoot Game](#)

LESSON 2

- Icebreaker activity: Students are asked to discuss about the EU industrial plan, specifically, about the ["The new Industrial Strategy for Europe"](#)
- Testimonials: First meeting with local companies: stakeholders present their activities; divided into groups, students start thinking on how to improve them from a green and sustainable point of view.
- Manual for teachers: Practical Activities (pg. 12/20)
- Concluding activity: FLIPPED CLASSROOM - CHAPTER 3, pages 54, 56, 57 + groups of students start thinking about an innovative idea to improve the local company they have been associated with.

LESSON 3

- Icebreaker activity: Each group presents the INNOVATING IDEA they've been working on during the previous week.
- Game: GROWING GREEN GAME + ENTRECOMP GIANT GAME
- Concluding activity: Students will be asked to vote for the two best innovative ideas.

LESSON 4

- Icebreaker activity: Once best ideas are defined, students start working on the prototype. They work on the prototype based on their specific competences and skills.
- Entrepreneurial project: A second meeting is held with the local firms, in order to receive some feedback from the work done so far. Students are also given some practical activities (Manual pg. 86, 89, 92).
- Concluding activity: Once feedback is received, students will keep on working on their prototypes.

LESSON 5

- Icebreaker activity: Students are asked to exercise on debating: they will have to convince their mates that their prototype is the best one.
- Entrepreneurial project: The two prototypes are presented by the students to all stakeholders and class teachers.
- Concluding activity: A visit to the firm will put an end to the project.

LESSON 6

- Elevator Pitch
- Compendium preparation

Examples from Slovenia

Short introduction: Suitable for students in electrotechnics and related fields. Lessons are planned based on the goals of the EU Green Deal, EntreComp, GreenComp and SDGs. During the activities, two companies are presented, and the students must design a green and sustainable company, while getting inspiration from the two companies presented to them.

LESSON 1

- *Ex-ante assessment for students*
- *Introduction of the project and materials*
- *Explaining the timeline and expected results*
- *Listing all countries and partners involved in the project*

LESSON 2

- *Icebreaker activity – Paper, scissors, rock game*
- *Presenting the EntreComp model and its meaning*
- *Explaining the three areas and the five skills per area*
- *Explaining why is it good to have entrepreneurial skill even if you're not planning to become one*
- *Concluding activity*

LESSON 3

- *EntreComp Giant – explaining the meaning of this activity*
- *Each student makes its own EntreComp giant*
- *Making a collective EntreComp giant for the whole class as a team*
- *Final thoughts on the individual results and scores*
- *Final thoughts on the collective EntreComp giant score for the three areas*
- *Concluding activity*

LESSON 4

- *Icebreaking activity – Worst idea method (finding the worst solution to a problem)*
- *Introducing students to the second chapter – Green economy challenge*
- *Explaining all different types of innovations*
- *Showing interesting examples of different types of ideas*
- *Concluding activity*

LESSON 5

- *Introduction to different methods of getting an idea*
- *How to make sense of gathered data*
- *Introducing and explaining the customer empathy map*
- *Divide the class in four teams*
- *Homework: use the customer empathy map in the school cafeteria to find a solution to a recurring problem or inconvenience*
- *Concluding activity*

LESSON 6

- *Checking the customer empathy map homework*
- *Checking which were the most common issues/ inconveniences in the cafeteria with the help of the customer empathy map (team by team)*
- *Trying to find a solution to most common problem (each team separately)*
- *Present the problem and the solution to other teams*
- *Finding even more solution to mentioned issues in the cafeteria all together*
- *Concluding activity*

LESSON 7

- *Icebreaking activity: Memory game with the SDG's*

- *Explaining what we mean by well-being*
- *Explaining what the SDGs are*
- *Have a quick talk and thought about different SDGs*
- *Explanation what is and how to use the Samsung SDG application*
- *Explanation what do we mean by circular economy*
- *Explaining the GreenComp and how to use it*
- *Concluding activity*

LESSON 8

- *Introduction to the European Green Deal (EDG)*
- *Quick look at some examples for some of the eleven areas of the EDG*
- *How to find funding for your new business*
- *What is and how to use the business model canvas*
- *Some examples of business model canvases*
- *Concluding activity*

LESSON 9

- *Presenting to students two companies from which they can take inspiration to invent a green business idea*
- *Introducing Azurefilm (company selling 3D printing filament and 3D printers)*
- *Introducing Dijaški dom Portorož (student dormitory and hostel)*
- *Divide the class in four groups*
- *Brainstorming for ideas to make both companies greener and environmentally friendly*
- *Discussion regarding the ideas presented by each group*
- *How to make a pitch*
- *Concluding activity*

LESSON 10

- *Presenting the last chapter from the manual*
- *Green growth in practice (few examples from EU countries)*
- *Aria project from Milan*
- *Climate Culture Pavilion from Graz*
- *Divide the class in four groups*
- *Brainstorming for green and circular companies using the companies from lesson 9 as inspiration*
- *Homework: prepare a name, logo, slogan, business model canvas and pitch for the invented company*

LESSON 11

- *Introducing the students to the Growing Green Game*
- *Have a look at the rules*
- *Play the game in groups of six students*
- *Discussing the pro and cons of the game and possible improvements*
- *Homework: make a short PowerPoint for the company invented in lesson 10*
- *Concluding the activity*

LESSON 12

- *Finding semi-optimal solutions in the context of the European Green Deal using LEGO.*
- *Build the company invented in Lesson 9 using Lego bricks. Consider the main attributes that define the company and represent them using Lego designs.*

- Each team makes a pitch with the materials created in the last two homework assignments and the Lego design.
- At the end of the four pitches, each team decides whether they like the presented idea and how much of their overall budget they would invest in it.
- Brainstorming ways to improve some of the presented businesses.
- Homework: Start filling out the compendium.

Short introduction: Suitable for students in logistics and related fields. Initial lessons are planned based on EntreComp frame, while a connection to GreenComp competences is built step by step. Additional topics are the circular economy model; the European Green Deal; the 2030 Agenda for Sustainable Development and its 17 SDGs.

LESSON 1 (Topics Chapter 1) Growing Green project and Entrecomp presentation

- Introduction of the project and materials: The students will get to know about the Growing Green project by following the slide presentation of the EntreComp framework.
- Activity for warm up/Icebreaker: Students will be asked to compile a 16 personality test, where they answer personal questions about their attitude, approaches to problems, habits, feelings, behaviour, etc. After getting the results, we write all the personalities on the white board and understand who the persons in the classroom are. [Personality test](#)
- Activity 1 / Chapter 1 from the Manual: Build your EntreComp Giant!
- Concluding activity: The students will shortly give info about how they visualise and map EntreComp competences in their giants.

SESSION 2 (Topics Chapter 2) GreenComp presentation and connection to EntreComp

- Presentation of the GreenComp frame and aims by researching [on this website](#)
- Connection to EntreComp aims through discussion with the students.
- Icebreaker activity: "Turn the worst idea into a best idea" - The students will be asked to find solutions for destroyed meadow by wrongly created and used walking paths. The first round of generating ideas will be totally free, the ideas should be creative, funny, criminal, crazy. In the second round they should transform these out of law ideas into good business ideas.
- Activity "Generating ideas" / Chapter 2 from the Manual: Brainstorming. The students will work in preformed groups and brainstorm for green business ideas. They will be asked to think green, circular, innovative and inclusive.
- Concluding activity. Presentation of a potential business idea. After the presentation, students will keep on working on their prototypes.

SESSION 3 (Topics Chapter 3) Circular economy and Sustainable Development Goals

- Presentation of Circular Economy model and 17 Sustainable Development Goals: The students will firstly watch [a short video explanation about Circular Economy](#). After that, through discussion about the scene, the teacher shows to the students the pictogram of the SDG and explains about the United Nations' 17 Sustainable Development Goals (SDGs) aim to achieve decent lives for all on a healthy planet by 2030.
- Icebreaker activity: Students will work in preformed groups. Each group will be allowed to use cell phones to conduct research. They will be asked to research if and how their business idea (product/service) from the previous lesson will match the SDG.
- Concluding activity: Not all ideas will probably match the SDG, therefore the students will be asked to use new acquired knowledge about the Circular economy model to redefine their product/service in a way that matches at least one of the SDG goals.

SESSION 4 (Topics Chapter 4) European Green Deal and connection to Sustainable Development Goals

- *Icebreaker activity: The students will firstly watch Michael Jackson's the Earth song video, which shows deforestation, pollution, animal extinction, war scenes to let them know that these problems aren't new and that the music industry had its moment in the 80's also with Band-Aid for Africa etc. After that the students will get a Growing Green set of Emergency cards. In preformed groups they will be asked to discuss each picked card topic and to connect it to our country. They shall recognize disasters and emergencies that happened in Slovenia.*
- *Presentation of the [European Green Deal](#) and connection to SDG*
- *Concluding activity: The students will get the EU Green Deal scheme. They shall find out which fields of action are intended to strive in direction to achieve SDG. The students will do the connection between the EU Green Deal and the SDG and shortly present it.*

SESSION 5 (Topics Chapter 5) Inclusive and Green strategies

- *Checking the problem awareness and motivation for the subject among the students after 4 lessons. Verifying the capability of students to connect different causes for global problems with the presented EU strategies (EntreComp, GreenComp and Green Deal) and clear motives/needs for change.*
- *Introduction and discussion about inclusive and green strategies. The students will watch [promotional video of Americold Logistics](#), which is a major temperature-controlled warehousing and transportation company based in Atlanta, Georgia, USA. The students attend a logistics program that will be their future professional field. The discussion after watching this promotional video will be about food transit pollution. (The European Green Deal: Commission proposes 2030 zero-emissions target for new city buses and 90% emissions reductions for new trucks by 2040.)*
- *Information about goals, learning outcomes and working programs. Explanation of the goals of this training, the working plan, time schedules of tasks and final expectations. They also get information about:*
- *HOME ACTIVITY – BEFORE NEXT LESSON (Individual work). Assumption: Students are already used to work online and able to find study materials in our school's e-classroom during regular activities in the program. Students get a mail message with a link to a 1-minute-long instruction video (created with video online app). In the video, students are first instructed to find the subject matter, the pptx presentation in the e-classroom, links to videos related to the green inclusion topics, to watch them, read them and to select essential information.*

SESSION 6 (Topics Chapter 4)

The students will form a team of players, 8 players in 4 pairs. Couples compete against each other in a card game as part of a pilot testing of teaching methods "a little differently" according to the project's pilot guidelines. The game envisages the participation of all players with each other and a discussion on the topics of the green transition. Other students participate in the conversation and help answer questions from the cards.

SESSION 7 (Topics Chapter 5) Inclusive and Green strategies

Part 1

Assumption: Students are assembled in pre-formed working teams.

- *Checkpoint of the accomplished tasks and feedback: After checking the related home activities and giving students feedback on their work, the teacher briefly reviews the topics and connects them to actual lesson topic Food insecurity.*
- *Activity 1/Chapter 5 from the manual: The teacher then directs students to understand the topic by explanations and showing statistics about populations who live in food insecurity conditions. The students watch [a short video, to get a simple explanation about food insecurity](#) (What is food insecurity).*

After the students understood the topic and subject of matter, the teacher introduced the exercise by firstly watching a [presentation of Vancouver food policy](#) showing them that some important cities already started the change. The students then get back cell phones to research the [Vancouver Municipality home page](#) and shall then discuss about our home cities, search for green strategies about Food insecurity in Slovenian cities.

At the end of the 1st part all groups and the teacher discuss the findings together. At this moment everybody in the classroom knows what the problem is and how cities are facing the problems with green and inclusive strategies.

Part 2

- **Entrepreneurial project.** After the common discussion, the students are asked to brainstorm in pre-formed working groups and find a green and inclusive creative solution for the situation. The students are asked to try to “wear someone else’s shoes” and discover the related problems through its eyes. Every group gets its own character, they wonder together how this “character” would see and want to solve a problem. In this way the students get to know in effect how to brainstorm, rate ideas and pick the best solution using information from the first part of the lesson – different points of view! All groups get the same situation to work on: A city without food strategy facing urban food insecurity, but each group get its character: better of citizens, poorer citizens, food traders, farmers in city surroundings and logistic companies. The students get blank posters, coloured pencils, Lego bricks, paper to take notes and instructions for work in the next 45 minutes. They should brainstorm and suggest solutions, prepare a poster defining a strategy to contribute to the solution of the problem of food insecurity in a city that has no strategy.
- **Concluding activity.** They should then write down ideas, describe, draw and construct a business model, connections between different city communities. Done that, they will present their ideas in the best possible way using all offered tools. In this way the students get to know how to better understand and respect different points of view, understand others needs and desires. They will also understand that very different communities can be collaborative.

SESSION 8 (Topics Chapter 1, 2, 3, 4, 5)

- **Assumption:** 3rd year students were developing their business ideas, prepared materials and presentations in pre-formed working teams.
- **Activity 1/ Chapter 4 from the Manual:** Pitch and presentation of business ideas to younger people. Each team of the 3rd year students shall present their work, their ideas, and explain the impact of their idea in the three main areas (financial, social and environmental) to students of the 2nd and 1st year. They shall use PowerPoint presentations and pitch like the younger students could be their investors. They shall present their product/service from all the related aspects (green, sustainable, inclusive, circular, ...). A table should be made on the white board. In it there will be all the participating teams and the three main areas of concern (financial, social and environmental) and an extra money section. 2nd and 1st year students shall listen actively and take notes about each presentation. Each student will be given some money in forms of coins (that can be just printed and cut from normal paper or cardboard). And each student will be given a red card that will mean “against ” and a green card meaning “in favour”.
- **Concluding activity:** After hearing all presentations the younger students will give a “in favour” or “against” vote for the idea. The main goal for the presenting team in question is to receive at least 2/3 of positive feedback from each area. Once all the ideas from each team have been heard, the younger students will decide how and to whom they will give their coins. At the end the table should reveal, which idea was the most popular and received the most financial support and what parts of an idea from other teams are to be improved.

As part of the project, two official school events were organised for all years of the logistics program. Namely an official Growing Green project presentation in cooperation with partners from JA Achievement Slovenija program, which is also carried out every year, was

carried out in November 2023 and a presentation of the project was prepared by the students at the stand on the school's Open Day in December 2023.

Example from Spain

Short introduction: The lesson plan is practical and is built on the idea to work with green and entrepreneurial competences; students start generating business ideas, prototype them and then pitch.

<p>LESSON 1</p> <ul style="list-style-type: none">• <i>Ex-ante assessment for students</i>• <i>Introduction of the project and materials</i>• <i>Activity for warm up/Icebreaker: team building - explanation</i>• <i>Awareness raising through a company</i>• <i>Thinking of sustainable solutions with the six thinking hats (Pag. 42)</i>• <i>Concluding activity</i>
<p>LESSON 2</p> <ul style="list-style-type: none">• <i>Icebreaker activity</i>• <i>Working on entrepreneurial skills with EntreComp Giant's</i>• <i>Part 2 of the Activity 1 from chapter 1 (Manual for teachers)</i>• <i>Concluding activity</i>
<p>LESSON 3</p> <ul style="list-style-type: none">• <i>Icebreaker activity</i>• <i>Awareness raising through a company</i>• <i>Design of the business idea through the CANVAS and subsequent analysis with the SWOT.</i>• <i>Concluding activity</i>
<p>LESSON 4</p> <ul style="list-style-type: none">• <i>Icebreaker activity</i>• <i>Prototyping of the business idea and preparation for the pitching process</i>• <i>Working on the compendium</i>• <i>Concluding activity</i>
<p>LESSON 5</p> <ul style="list-style-type: none">• <i>Ex-post-assessment for students</i>• <i>Pitching of the business idea</i>• <i>Working on the compendium</i>

General recommendations

1. Customise the training according to your target group (age; profiles; SEN; etc.).
2. Set the duration of the training based on your students' abilities and experience with entrepreneurship and circular economy.
3. Align the training methodology to the practical needs of your students.

4. Work with real-world applications and issues/challenges and involve companies or entrepreneurs as challenges' proposers or testimonials.
5. Work on cases with closer impact and train individuals to identify entrepreneurial opportunities in their local environment.
6. Allow students' proactivity and make them active actors of the entire process; this will contribute to awareness rising on sustainability issues.
7. Organise presentations of projects (students' pitches) in the framework of events with local stakeholders or school "open days".
8. Encourage teamwork to foster communication and problem-solving skills.
9. Guide students through the process of acquiring competences in a continuous way and by using informal feedback.
10. Introduce rewarding in the overall process of the creation of the green idea.

Room for improvements

Based on the piloting sessions conducted in the different countries, we can conclude that:

1. The **Growing Green approach would be more effective if conducted over a longer period**, such as the entire school year or as a full subject.
2. More time should be dedicated for **developing real prototypes**.
3. More emphasis should be given in empowering students **to engage more effectively in political action**: in particular, it would be interesting to couple experiential learning approaches with targeted interventions to enhance political literacy and advocacy skills.
4. It is recommended that the chosen companies work in the same sector of the VET course that it is addressed by the training.