



Sustainable Entrepreneurship Education

Learning and Teaching Package 7

UNIT 5: A JOURNEY INTO A MORE SUSTAINABLE CITY WITH SEE

ESZTER CSEPE-BANNERT, COREDU, GERMANY

KERSTIN SPECHT, COREDU, GERMANY



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Overview

The present Learning and Teaching Package follows a holistic approach by providing background information and methodologies to foster the sustainable entrepreneurship competences of in-service and pre-service teachers. Based on the knowledge, skills and competences acquired by completing this LTP, teachers will be able to develop new teaching materials or adapt already existing ones with aspects of sustainable entrepreneurship education (SEE).

Entrepreneurship education plays a key role in supporting young people to adopt a positive mindset. The entrepreneurial mindset is referred to a certain way of thinking by which young people confront difficulties and problems in life. The entrepreneurial mindset enables young people to overcome those challenges, be decisive and take on responsibilities for any of their behaviours and activities.

Whereas Units 1-4 are aimed for teacher educators, the present unit is practice-based, and would be of interest for student teachers and teachers to implement directly in the classroom. It aims to inspire to develop sustainable entrepreneurship competences among students in an engaging and fun way, while at the same time giving knowledge-basis around key concepts. Students will set on a journey to improve their local surroundings by critically exploring what could be improved and how in their own cities or towns.

It finishes with an activity to reflect on your practice (individually and/or with colleagues), on how the previous activities contribute to developing sustainability competences and acting in a more sustainable way. We also propose [a Template to develop your own learning activities](#), and [TAP-TS Roadmap](#) to lead you through the process.

Pedagogical Approach

The Unit focuses on the promotion of entrepreneurial competences within the framework of project-based learning/design thinking and under the reflective guidance of the teachers.

Sustainable Entrepreneurship Education: Background information

Sustainable entrepreneurship education teaches young people on the one side how to successfully use current resources to achieve sustainable growth while not risking future generations' ability to access resources. On the other side sustainable entrepreneurship competences enable young people to value sustainability; to support equity and justice for current and future generations; to approach a sustainability problem from all sides, to formulate current and potential challenges in order to identify sustainable approaches to anticipating and preventing problems, and to mitigating and adapting already existing problems. Furthermore, to adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas and methods and to act for change in collaboration with others round up the sustainability competences.

Piloting of the materials within TAP-TS

This LTP was piloted within the online Workshop in 2023 and one module was tested as a face-to-face workshop in November 2023 in Dresden. The online workshop is available on the [TAP-TS Platform](#).



UNIT Overview

Main Topic	Target Group	Duration	Knowledge Area/ Subjects in School	Activities	Suggestions for Possible assessment
The Unit engages students in developing their sustainable entrepreneurship competences through a fun project game.	Secondary school students	Min 500 min The activities can be played out as a one week project. There can be many adjustments made depending on contexts	Applicable multidisciplinary across different subjects and knowledge area	Start-Up Activity 1. The five-Minute Me Development Activity 2. City of the Future Consolidation Activity 3. The Post-It Walk Activity 4. The Lego City Activity 5. Sustainable Business Follow-Up Activity 1. Reflection on activities for students Activity 2. Reflection on teacher practice	Project work
Intended Learning Outcomes	Having worked through the activities and materials, students will be able to: <ul style="list-style-type: none"> ✓ describe at least two entrepreneurship competences. ✓ differentiate among source of information. ✓ describe challenges and potentials of sustainable cities. ✓ reflect the status quo of their own city considering principles of economic, ecological and economic sustainability. ✓ to transfer the observations on status quo from the city walk into a SWOT-Analysis. ✓ to elaborate first ideas for services or products for improvement of the status quo 				
Prior Competencies	optional/ideal: no prior competencies required				
Required materials	Post-it notes, pen, Lego-Kits (brought by students), tools for videorecording				
Cooperation/ Networking	Networking with colleagues teaching business would be recommended. Also, connecting to local sustainable businesses and asking them to be invited experts would enhance the experience.				
Practical Notes for Teachers	Timing depends on how deep you choose to go into each activity, on students' engagement. These can be adapted to your teaching contexts. This Unit can be seen as an example of activities for SEE.				



Addressing GreenComp	Embodying sustainability values	
	X 1.1 Valuing sustainability	To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values.
	1.2 Supporting fairness	To support equity and justice for current and future generations and learn from previous generations for sustainability.
	X 1.3 Promoting nature	To acknowledge that humans are part of nature; and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.
	Embracing complexity in sustainability	
	2.1 Systems thinking	To approach a sustainability problem from all sides; to consider time, space and context in order to understand how elements interact within and between systems.
	X 2.2 Critical thinking	To assess information and arguments*, identify assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds influence thinking and conclusions.
	X 2.3 Problem framing	To formulate current or potential challenges as a sustainability problem in terms of difficulty, people involved, time and geographical scope, in order to identify suitable approaches to anticipating and preventing problems, and to mitigating and adapting to already existing problems.
	Envisioning sustainable futures	
	3.1 Futures literacy	To envision alternative sustainable futures by imagining and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future
	X 3.2 Adaptability	To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity and risk.
	X 3.3 Exploratory thinking	To adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas or methods.
	Acting for sustainability	
	4.1 Political agency	To navigate the political system, identify political responsibility and accountability for unsustainable behaviour, and demand effective policies for sustainability.
	X 4.2 Collective action	To act for change in collaboration with others.
	X 4.3 Individual initiative	To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet.



UNIT DESCRIPTION

Start-Up

The key aim of the activities is to allow students to introduce and reflect themselves around their competences by using different practical tools.

**Estimated
Duration**





Activity 1. The Five-Minute Me

The focus of this activity is self-reflection around one's competences.

Preparation for Activities: you will need flipchart paper, and association cards (different pictures, motives, colors, etc. that you think could be most interesting for the class)


A Note for a Teacher: By introducing and reflecting in a class the students get the opportunity to interact with their classmate, and to appreciate diversity in the classroom. There is a five-minute timeslot for students to prepare their descriptions.

Description

1.  The teacher introduces the project "City of the future" to the students and what the project aims to reach in the collaboration with the students.
2.  The teacher prepares association cards and put them on the separate table. Students are asked to take one or two pictures which best describe themselves.
3.  After each student selected one or two association cards the teacher asks to explain "Why did you chose this particular card? How is this card related to you as a person?" Students explain one by one and the teacher make notices on the flipchart if any competences has been mentioned by the students.
4.  After each student introduced themselves, the teacher summarizes the list of competences mentioned by the students and reflect on the entrepreneurship and green competences by following questions:

Max 60
min
Depending
on the
number of
students



	<ul style="list-style-type: none">• Which of the mentioned competences do you think is relevant in your daily life and why?• What do you think, which of the competences do you have most developed? <p>5.  The students pin their association cards on the pin wall and write their competences on the moderation cards which they assessed as “I have it most developed”.</p>	



Development

In these activities students describe different concepts of environmentally sustainable and socially resilient cities; look for information and critically assess it; describe challenges and potentials of sustainable cities.

**Estimated
Duration**

Activity 2. City of the Future

The students will apply their knowledge, skills and abilities related to sustainability and entrepreneurship competences into practice by working on real case related to “City of the Future”. Through reflective tasks students will get more aware of challenges and potentials of sustainable cities.





GreenComp Relevance:

1.1 Valuing sustainability;
1.3 Promoting nature;
2.1 Systems thinking;

Preparation for Activities: flipchart paper

A Note for a Teacher: Some idea about the principles of sustainability is needed for this activity.



Description

1.  Start with the introduction of the tasks by explaining the learning outcomes of this unit to the students. They are (1) knowing different concepts of environmentally sustainable and socially resilient cities; being able to critically assess information from different sources; and (3) understanding challenges and potentials of sustainable cities.
2.  Explain the research request which is carried out by the students. Pin the areas “mobility”, “tourism”, “living”, “working”, “building & construction”, “leisure time”, “green areas”, on the wall. The students are asked to create small groups and select one of the areas of their interest.
3.  The students use the laptop/PC of the school or their own mobile phone to search for information. The groups then start to look for information by focusing on descriptions, indicators, good practices on sustainable cities and notices “**what does sustainability in general mean in these areas?**” Students start with the internet research and make notes with their findings on the flipchart paper per area and group.
4.  After the groups elaborated information on the selected areas, they present their findings to the whole class/plenum.

90 min



2.2 Critical thinking;
2.3 Problem framing;
3.3 Exploratory thinking;
4.2 Collective action

5.  Ask the groups to think about **challenges and potentials** of **environmentally sustainable and socially resilient cities**. The answers are written to the flipchart which is pinned on the wall, so everybody can follow the elaboration of answers.
6.  Ask following reflective questions:
 - Was it difficult/easy to find information on the internet?
 - What kind of sources did you use to gather information? (newspaper, reports, websites, etc.)
 - How did you know whether the information is reliable or not?
 - What do you think about the “city of future”? What is the most important for you when it comes to a sustainable city?



Consolidation

The key aim of the activity is to support students make meaning of the knowledge they have in real life situation by observing the status quo of their own city considering principles of economic, ecological and economic sustainability.

**Estimated
Duration**

Activity 3. The Post-It Walk

The key focus is to identify possible challenges for a sustainable city, and explore possible solutions.






GreenComp Reference:

1.3 Promoting nature;
2.2 Critical Thinking;
2.3 Problem framing;
3.2 Adaptability;
3.3 Exploratory thinking;
4.2 Collective Action;
4.3 Individual Initiative

Preparation for Activities: Pen and paper to make notices during the “post-it-walk”; Observation Sheet (in Handouts)







A Note for a Teacher: an introduction to the SWOT (Strength / Weaknesses / Opportunities / Threats)-Analysis will be required. Also, we recommend doing the actual walk to get fresh air, and observe the real life of the city with critical eyes.

Description





-  For the post-it-walk students work in groups. Together with the teachers they identify one quarter/district of the city per group.
-  Set on an observation walk. Students get an “observation sheet”  from the teacher with following supportive questions: write three things they think are good; three things that bother them; and three things they would like to change.
-  The aim of the post-it-walk is to observe the quarter/district based on the findings from the [Start-Up](#) and [Development](#) activities in regard to sustainability issues and the questions on the observation sheet.
-  The post-it-walk takes around 2 hours. The students notice their finding on the observation sheet. If there is interest, the information collected can be supported by photos / videos taken by the students during their walk.

3-4 hours



	<p>5.  After the walk the groups meet in the class again. Together with the other groups the students present and evaluate the findings.</p> <p>6.  As final step the students think about possible improvements of the identified challenges during the post-it-walk. Finally, they elaborate first ideas for improvement thinking in terms of products / services.</p>	
<p>Activity 4. Lego City The key focus of the activity is to work together on proposing and developing a ‘sustainable idea’ for a city.</p> <p>GreenComp Reference: 2.2 Critical Thinking; 2.3 Problem framing; 3.2 Adaptability; 3.3 Exploratory thinking; 4.2 Collective Action;</p>	<p>Preparation for Activities: students need to bring their Lego-kits with a Lego-figure. They will be working in small groups of three people. Also for the final task, a videocamera / smartphone, a camera stand are needed, an empty wall.</p> <p>A Note for a Teacher: The intention is to give an opportunity for students working in groups develop their joint product, by doing this, grow their mutual interests and relationships. The final activity also engages with technology.</p>	90 min With recording the videos
	<p>Description</p> <p>1.  Drawing on activity 3, students in small groups decide on one improvement they want to make in the city.</p> <p>2.  The students develop their Lego-models. They need to engage all the Lego bricks, and make the model stable.</p> <p>3.  The students think of how they are going to ground their choice and present their model / product for improvement. They write a short note explaining their model.</p> <p>4.  Post-it walk Feedback: the models together with the description notes are exhibited throughout the room. Each student gets post-it notes (for each model, e.g. 10 notes), and a pen. Students go around the room, and try to give constructive feedback to each model.</p>	



	<p>5.  Each group should have a Lego-figure that would be the narrator of a story. The groups get their feedback notes, and trying to gather their descriptions and feedback they got, they produce a short video where the Lego-figure presents the Lego-Model.</p>	
<p>Activity 5. Sustainable Business</p> <p>The key focus is engage students in reflecting on the principles of sustainable business plan and transfer their know-how into practice.</p> <p>GreenComp Reference: 1.3 Promoting nature; 2.2 Critical Thinking; 2.3 Problem framing; 3.2 Adaptability; 3.3 Exploratory thinking; 4.2 Collective Action; 4.3 Individual Initiative</p>	<p>Preparation for Activities: students need to bring their Lego-kits with a Lego-figure. They will be working in small groups of three people. Also for the final task, a videocamera / smartphone, a camera stand are needed, an empty wall.</p> <p>A Note for a Teacher: The intention is to give an opportunity for students working in groups develop their joint product, by doing this, grow their mutual interests and relationships. The final activity also engages with technology. This activity might best work in collaboration with business subject teacher.</p> <p>Description</p> <p> Provide knowledge-basis on the business plan based on the following framework:</p> <ul style="list-style-type: none"> - What is a business plan? - What are the elements of the business plan? - What is the relevance of the business plan? - What has sustainability to do with a business plan? - From the idea to a business plan – overview of stages <p> In the next step the teacher introduces the “Marketing mix” and explains the core idea behind it.</p> <p> Afterwards, the students work in groups on their products and services identified in Activity 3 and 4, having the following questions in mind:</p> <ul style="list-style-type: none"> • Please describe the problem your product/service wants to solve? 	3 hours



- Please describe how your product/service wants to solve this problem?
- Please describe the main functionalities of your product/service.
- Please elaborate the marketing-mix for your product/service.




After working on their products/services more concretely students present their products/services in the plenum and other group members reflect on the presentation:

- Is the product clearly described and functionalities are comprehensive?
- Is the price calculation reasonable?
- Is the target group appropriate?
- Are the sustainability aspects of the product clearly communicated and/or visible?



Follow-Up

<i>The aim of the follow-up activities is to reflect about the experiences of the activities for students, and reflect on teacher practice for teachers.</i>		Estimated Duration
Activity 1. Reflection for students The aim is to give a chance for students to reflect on the experiences of the activities	Preparation for Activities: Give time for an exchange before a class discussion	20 min
	Description  The students reflect on their experiences within the Unit activities based on the following questions: <ul style="list-style-type: none"> - What was the most important content to me and why? - What was the most creative part of this module? - What was the most useful for my daily life? - What did I not like and why? These are my takeaways: (please write at least 3 takeaways)	




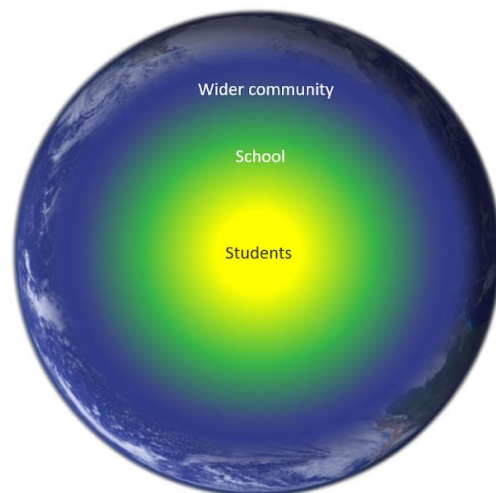
Activity 2. Reflection on teacher practice

This is an activity aimed at helping reflection (individually and/or with colleagues) on how the previous activities contribute to developing sustainability competences and acting in a more sustainable way.

Description

How can I mobilize the activities in my teacher practice?

Please reflect  on two or three of the following dimensions at three levels of engagement (students - teacher; school; and wider community and beyond):



Dimension 1. Learning objectives:



In what ways do these activities contribute to the global educational goals for your students? You might consider in particular LTP methods, materials, tools and activities you would or have implemented/transferred from the TAP-TS LTS into your regular teaching curricula.



Within the school or learning context, how have the activities helped the learners in terms of embodying sustainability values, acting for a sustainable future and/or envisioning a more sustainable future?

60 min



How have the activities added to the knowledge and understanding of the learners in terms of working with others in the broader community to create inclusive visions for a more sustainable future?



Dimension 2. Integration with different subjects:



In what ways the activities could engage your students with different knowledge areas and subjects of the curriculum? In what ways these activities could be connected with different subjects of the curriculum?



How have the activities contributed to collaboration with others at school or institutional level to approach a sustainability issue from different perspectives, knowledge areas and contexts?

In your opinion, do the LTP materials, tools and methods you have implemented also offer potential for use in other subjects? If so, in which subjects?



How have the activities encouraged students to draw on different perspectives, and subject knowledge to identify interconnections, and reflect on one's own environmental, cultural and economic impact?



Dimension 3. Inclusion:



Can the previous activities contribute to all students' participation and learning? What actions can you take to ensure the learning of all students?



What do you think could be the reason for the higher/lower participation?



How have the activities contributed to engage with different perspectives to consider sustainability challenges and opportunities?



How do the activities help reflect on, identify, envision or even shape the trajectory towards a collective preferred future that includes various perspectives, cultures, traditions, and are grounded in values for sustainability?



- ☐ Do the LTP activities, and materials encourage students to show empathy with others, respect others?
- ☐ To what extent do the activities motivate to collaborate in order to shape inclusive sustainable futures?

Dimension 4. Environmental / Sustainability awareness:

- ☐ To what extent do the activities promote awareness and responsibility among your students?
- ☐ Are there opportunities to integrate more discussions about the use of digitality, the use of digital devices in a more sustainable way into the activities?
- ☐ How have the activities encouraged the students to be aware of their individual and collective impact on nature, and provided opportunities to restore it at school level?
- ☐ How have the activities contributed to grasp connections and interactions between natural events and human actions?



Resources and equipment:

- ☐ Do the current resources and equipment available in your institution adequately support the activities you have selected and implemented from LTP materials, or are there enhancements needed? Were there any LTP tools, methods or materials that you wanted to use in your lessons but were unable to implement? If so, what were the reasons for this?
- ☐ How did you try to enable students to use resources for learning at school in a sustainable way?
- ☐ Did the activities encourage students to assess and question their needs to carefully manage resources in the pursuit of longer-term goals and common interests? How did the activities help them to think critically about information sources and communication channels on sustainability to assess the quality of the information they provide?



Community involvement:



To what extent can you involve the local community or connect with community issues related to the sustainability theme approached?



How can you build a learning community in your classroom where students learn actively from each other?



Have the selected and implemented LTP methods, tools and materials encouraged you to initiate cooperation with external partners (associations, companies, NGOs, etc.) to enrich learning experiences? If so, in which areas are you aiming for cooperation?



To what extent do the activities engage in democratic decision making and civic activities for sustainable development?



How does your teacher practice encourage students' intentions and willingness to give back to the community and nature?



Assessment and feedback :



How do you assess students' knowledge and skills developed through these activities and give them feedback? What instruments could you use to gather feedback from students? How can this feedback inform your future planning?



What assessment methods could show what all students are capable of, drawing on their strengths and promoting their agency and creativity?



	<p><input type="radio"/> To what extent does your teaching practice encourage students to use evidence, combine knowledge and resources to analyse and evaluate futures and their opportunities, limitations and risks, and contribute to decision-making at school level.</p> <p><input type="radio"/> To what extent does your teaching practice encourage students to use evidence, combine knowledge and resources to analyse and evaluate futures and their opportunities, limitations and risks, and contribute to decision-making, and become agents of change.</p>	
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Glossary of Icons



- Video



- Quiz



- Worksheets



- Editable Worksheets



- Various Media, e.g. Learning Apps



- Text to Read



- A question to Respond or a Question for Reflection



- A Discussion



- A task for an inquiry or search



- Focusing Activity



- A Reflection Activity



- An Activity for Action



- Taking a picture



- a short note for a teacher



- a group exchange



Worksheets and Links

Consolidation

Activity 3 The Post-It Walk

- **Worksheet**  **Observation Sheet**



TAP-TS Roadmap

TAP-TS Roadmap has three main goals: (1) for the TAP-TS partners as a roadmap to design LTPs; (2) for teachers and student teachers to design materials for teaching sustainability; (3) evaluation of LTPs. Explore the visualisation on the next page.

TAP-TS Roadmap: the Steps / stages in the TAP-TS LTPs Design Journey

1: Clarify the Goal	Our overarching goal is to enable learners and teachers to think and act sustainably. To actively participate in the discourse on sustainability, the topics must also be addressed - sustainably - in schools and universities. The goal of TAP-TS is to create learning and teaching packages for this purpose in the following areas: 2.1 A Sustainable Europe. 2.2 Sustainability and Digitality. 2.3. Sustainability and Environmental Education. 2.4 Climate Crisis Resilience. 2.5 Dealing with Climate Disinformation. 2.6 Green Citizenship in/for Europe. 2.7 Sustainable Entrepreneurship Education.
2: Competency Areas	The LTPS should be aligned with the interconnected four competences defined in the Green Comp Framework: • Embodying sustainability values • Embracing complexity in sustainability • Envisioning sustainable futures • Acting for sustainability
3: Networking & Bundle Expertise	There are many exciting topics. 1. Find a focus: what driving question is at the centre of your LTP. 2. See what resources are available (competencies, teaching-learning materials, etc.). 3. Network with colleagues and partner institutions regionally and nationally.
4: Working through the design process	Teaching Sustainability should be: action-oriented learning; hands-on; focussing on real life challenges; stimulate creative collaboration between teachers and learners; visions-oriented; participatory and action oriented . Approaches to teaching sustainability may be inquiry-based learning; explorative learning; networked learning; participation learning aimed at problem framing. Teaching Sustainability may incorporate the following activities: collaborative projects, future framing workshops, research and analysis, discussion.
5: ASSESSMENT DESIGN	In Education for Sustainability assessment can be multifaceted and primarily encourage reflection and be evidence based. There is not always ONE right answer. The goal should be to RAISE QUESTIONS. TS is not about teaching the „right“ behaviour, but about practising a critical perspective. Give TS an important place in curricula and implement credits, badges, or awards for it.
6: PUBLISH TO TAP-TS PLATFORM	Can you and where can you publish your materials under a Creative Commons license as free as possible. Because that is sustainable!



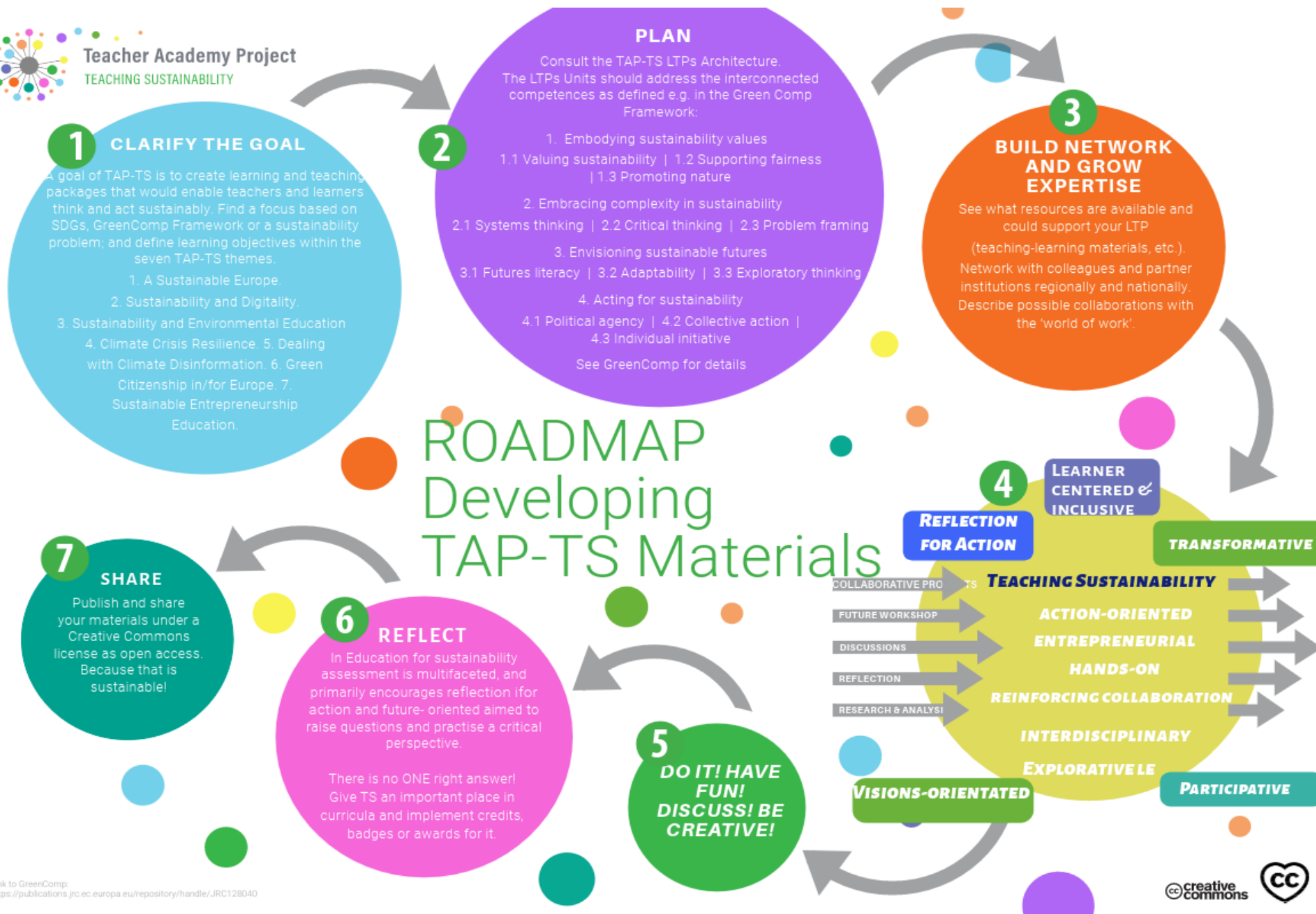
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TEACHING SUSTAINABILITY



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TEACHING SUSTAINABILITY



Teaching Sustainability: Learning activity Template

1. Introduce yourself!

My name:
My country:
My role:
My school:
My class:

2. OVERVIEW

Provide a brief description of the learning activity, including information about the targeted age group and duration. Clearly state the motivation behind your learning activity and explain which elements of the curriculum your learning activity is related to.

Age Group:

Duration:

Related Themes of Sustainability:

Description:

3. LEARNING OUTCOMES

What are the learning outcomes of this learning activity, and which key GreenComp competences does it promote?

4. LEARNING APPROACH

Having in mind the learning outcomes, what active learning approaches will be applied?

Specify the engagement strategies and sequence of learning tasks that students will develop in the context of the activity. Explain how GreenComp competences will be promoted.

What will be the role of the teacher, and what will be the students' role? How will the students work—individually or in groups?

5. DIGITAL RESOURCES

Which digital technologies, including tools, services, and resources, will be utilized in the activity? Additionally, how will these digital technologies be effectively integrated to enhance lesson outcomes and student understanding?

6. ASSESSMENT

What assessment strategies and instruments will be employed to evaluate student learning?

GreenComp Framework: the European Sustainability Competence Framework

Within the TAP-TS Project, *GreenComp* (Bianchi et al., 2022) serves the following purposes: design of learning and teaching packages; development of TAP-TS professional development activities, (self)-reflection, and evaluation. The aim of GreenComp is to foster a sustainability mindset by helping teachers and students develop the knowledge, skills and attitudes to think, plan and act with empathy, responsibility, and care for our planet.

Visual representation of *GreenComp*:



GreenComp consists of 12 competences (in bold) organised into the four areas (in italics) below:

- *Embodying sustainability values, including the competences*

- **valuing sustainability**
- **supporting fairness**
- **promoting nature**

- *Embracing complexity in sustainability, including the competences*

- **systems thinking**
- **critical thinking**
- **problem framing**

- *Envisioning sustainable futures, including the competences*

- **futures literacy**
- **adaptability**
- **exploratory thinking**

- *Acting for sustainability, including the competences*

- **political agency**
- **collective action**
- **individual initiative**

Reference: Bianchi, G., Pisiotis, U., Cabrera Giraldez, M. GreenComp – [The European sustainability competence framework](#). Bacigalupo, M., Punie, Y. (editors), EUR 30955 EN, Publications Office of the European Union, Luxembourg, 2022; ISBN 978-92-76-46485-3, doi:10.2760/13286, JRC128040.

Project partners



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