



# Understanding Climate Change - What the Evidence Says

## Learning and Teaching Package 5

### Unit 4: What we can do to challenge Climate Disinformation

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## Overview

This LTP introduces the topic of climate disinformation and promotes an understanding of the “Media Landscape” in which Disinformation can emerge. It brings into discussion the roles of the media, and which activities of the media make traditional/social media more susceptible to mis-/disinformation. It also presents a range of material and associated pedagogies that explore secondary teaching and learning related to climate and climate information.

Unit 4 deals with guiding learners to describe disinformation threats globally and to consider these in terms of understanding of how they can impact environment, society and economy aspects of our lives. The unit explores a range of climate change events across Europe and their effects on people and places. Within this unit learners develop their critical thinking skills and move towards an activism-based approach to countering and mitigating inaccurate information.

## Pedagogical Approach

This Learning and Teaching package encourages teachers to explore areas of social media and news media where inaccurate information can be prevalent and to learn how to navigate these. Unit 4 allows for educators and students to engage with active learning pedagogy and support knowledge-based understanding of climate information and to build capability to challenge inaccurate information flows. The main pedagogical approaches used include reflection, collaboration and technology assisted problem solving. This unit emphasises how having a better understanding of correct information provided via scientific sources and trusted media can help engage and challenge mis/disinformation. This is addressed through active and participatory learning.

## The need for knowing what we can do to navigate and mitigate bad-information

Social media and news media where inaccurate information can be prevalent is an increasing challenge to understanding and acting on climate crisis issues. Responding to this within the educational context encourages ‘prebunking’ and the development of the critical thinking skills to do so. For educators to encourage students to critically assess the credibility of the informational sources provided to them and then to further have the ability to distinguish between reliable scientific data and misinformation. Through reliable educational resources learners can collaborate together alongside knowledgeable experts in area. Educators should encourage open discussion through classroom debates. Allowing for students to advocate for policies within the school and community enhances opportunities for the inclusion of critical thinking and media literacy in school curricula.

## Piloting of the materials within TAP-TS

Materials piloted in draft form with UCD Professional Masters of Education programme, UCD Dublin, IRELAND, participants in spring 2023 and autumn 2024 and subsequently verified for value at the TAP-TS Autumn School, Pirna, GERMANY, 27-28 Sept 2024.



## UNIT Overview

Main Topic	Target Group	Duration	Knowledge Area/ Subjects in School	Activities	Possible assessment
<b>Unit 4: What we can do to challenge climate disinformation</b>	Secondary school teachers and student teachers with activities for secondary level students	200-220 Minutes	Social media Climate change Sustainability	<b>Start Up</b> <u>Activity 1.</u> Using Social Media to combat climate disinformation <b>Development</b> <u>Activity 2</u> Creating a storyboard for an educational short video <b>Consolidation</b> <u>Activity 3a.</u> Creating a short video <u>Activity 3b</u> Creating a poster <b>Follow-Up</b> <u>Activity 4.</u> Poster Activism <u>Activity 5</u> Reflection on Teacher Practice	Peer assessed; Teacher determined
<b>Intended Learning Outcomes</b>	<b>Having worked through the activities and materials, students will be able to:</b> ✓ better understand disinformation threats in relation to people worldwide. ✓ envision a more hopeful future regarding information flows concerning climate, environment, society and economy. ✓. more competently engage in navigating and mitigating inaccurate information.				
<b>Prior Competencies</b>	<ul style="list-style-type: none"> <li>Basic understanding of climate crisis information / disinformation required ( ideally acquired through previous Units in this LTP).</li> <li>Digitally literate to a level that allows to engage meaningfully with the materials provided in this unit.</li> <li>Ability to collaborate and be cooperated to support group activities and exercise autonomy to participate.</li> </ul>				
<b>Required materials</b>	• Laptop and access to internet • Paper and writing materials • Resources as referenced				
<b>Cooperation/ Networking</b>	Exploring and connecting to victims of climate disaster and community organizations related to climate disasters.				
<b>Practical Notes for Teachers</b>	Grouping participants differently may cause activities to become longer or shorter. Outcomes and outputs can vary depending on whether the activities are online or in person and the capabilities / interest of the learners. <b>NB: Activities relating to learning with these materials / resources need to be considered in light of school-level policies / practices on the use of technology in learning settings.</b>				
<b>Addressing GreenComp</b>	<b>Embodying sustainability values</b> 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.				



X	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.
<b>Embracing complexity in sustainability</b>		
X	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.
<b>Envisioning sustainable futures</b>		
x	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.
<b>Acting for sustainability</b>		
x	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

Exploring how Social Media can be used to combat climate disinformation.

**Estimated  
Duration**

20min

#### Activity 1: Looking at climate change activism on Social Media

##### **GreenComp Reference:**





1.2 supporting fairness  
2.1 systems thinking  
2.2 critical thinking  
3.1 futures literacy

#### **A Note for the Teacher:**

Allow time to process questions to get the most from the activity.

**Preparation for the Activity:** you will need the Worksheet for Unit 4 TikTok Climate Activism

#### **Description:**

1.  Play the BBC News video highlighting social media on Climate Change, in particular impact of *Tik-Tok* on climate disinformation  
BBC Video <https://youtu.be/42xHuSmwYa4?si=PD1Ejc1EVeY0jASD>
2.  Complete the video worksheet after the second viewing. [UNIT 4TikTok Climate Activism Video Worksheet.pdf](#)
3.  Play the ABC News clip showcasing social media activism from Australian students  
[https://youtu.be/qIBFOx0ZiYk?si=wbVd69DJjL\\_yO8qm](https://youtu.be/qIBFOx0ZiYk?si=wbVd69DJjL_yO8qm)
4.  Have a class discussion on  
“How can young people best advise and help each other to identify and deal with climate mis-  
/disinformation?”.



## Development

### Storyboarding a short educational video on i

**Estimated  
Duration**

#### Activity 2: Storyboarding a short video

##### **GreenComp Reference:**

2.3 Problem framing

3.2 Adaptability

3.3 Exploratory thinking

4.3 Individual initiative

**A Note for the Teacher:** The activity aims to develop creativity and critical thinking, also by reflecting on the gained knowledge. Put learners into groups of 4 with each group using 1 x A3 paper to create their storyboard.

#### Description



Create a storyboard consisting of 10 pieces of information you would like to include into a short video on how younger people can spot and deal with 'bad information'.

In less than 1 minute, the video could depict some or all of the following:

- Showcasing what young people need to understand about the problem of climate disinformation
- Warning of the dangers of climate disinformation.
- Helping them to spot Climate disinformation online.
- Giving some advice on how to deal with it.

40 min





## Consolidation

Creating a short video or an information poster while revising the knowledge of the previous units.

Estimated  
Duration





### Activity 3 (a): Create your own Video

#### GreenComp Reference:

1.1 valuing sustainability  
1.3 promoting nature  
4.2 Collective action

**Preparation for Activities:** The aim is to encourage technical skills to take individual and collective action on climate disinformation. Learners working(ideally) in groups of 4 will create 1-minute-long videos to on a topic they have learned through learning about Climate Disinformation. A digital camera/smartphone should be used to record footage. You will need the Worksheet *Seven Elements of Storytelling* (see Resources.)

#### Description

1.  Create your own video 1-minute-long informing their schoolmates on a topic they have learned through learning about Climate Disinformation.
2.  Remember to use the WORKSHEET [7 digital Storytelling](#), explaining to the class what points are important while creating a video.
3.  After a first draft, present each video to the class encouraging peer feedback to improve the videos.  
Using the 2 stars and 1 wish method.
4.  Students should present their final video to their own class, before other going to other classrooms and teaching them the importance of fighting climate disinformation using their videos.

120min





### Activity 3 (b) Create a *Spotting Disinformation* Poster





#### **GreenComp Reference:**

1.1 Valuing sustainability  
1.3 Promoting nature  
4.2 Collective action

**Preparation for Activities:** The aim is to encourage technical skills to take individual and collective action on climate disinformation. Learners working(ideally) in groups of 4 will make a ***How to Spot Disinformation Poster*** on a topic studied within the LTP. They will need the Unit Worksheet *Fact-Checking* (see Resources).




**A Note for the Teacher:** Encourage students to express themselves through their work. Remind them to think about their key messages and to use their storyboard as inspiration.

#### **Description:**

1.  Look at the WORKSHEET *Fact Checking*, to identify what points are important.
2.  Create a *How to Spot Disinformation* Poster working in groups.
3.  Present your first draft to another group asking for peer feedback to improve the poster. Using the 2 stars and 1 wish method.
4.  Students should present their final poster to the full class and then use their posters as the basis for a whole-school campaign to teach other students the importance of and their recommended approaches to fighting climate disinformation.



## Follow-Up

Encouraging Activism on Climate Disinformation		Estimated Duration
<b>Activity 4:</b> Poster Activism  <b>GreenComp Reference:</b> 2.2 Critical thinking 4.1 Political agency 3.3 Exploratory thinking	<b>Preparation for Activities:</b> ICT technology if creating digital posters otherwise A3 sheets & drawing materials.  <b>Note for Teachers:</b> This activity encourages learners to be activists within their school setting. It centres on creating posters to encourage awareness of how to spot climate disinformation among their peers.	40 mins
	<b>Description</b> <ol style="list-style-type: none"> <li> Create a digital/ paper Poster A3 or through presentation software.</li> <li> Choose your own topic regarding Climate Disinformation Some examples               <ul style="list-style-type: none"> <li>• How to fight Climate disinformation</li> <li>• Spreading awareness of climate change</li> <li>• How to fact check a source</li> </ul> </li> <li> Display your posters in the classroom or – with permission – around the school building and grounds.</li> </ol>	



### Possible Ideas to include in your poster:

**Check Credentials** - Is the author specialized in the field that the article is concerned with? Does s/he currently work in that field? Check LinkedIn or do a quick Google search to see if the author can speak about the subject with authority and accuracy.

**Read the "About Us" section.** Does the resource have one? Reputable websites will have some type of About Us section and will provide a way for you to contact them.

**Look for Bias** - Does the article seem to lean toward a particular point of view? Does it link to sites, files, or images that seem to skew to the left or the right? Biased articles may not be giving you the whole story.

**Check the Dates** - Like eggs and milk, information can have an expiration date. In most cases, use the most up-to-date information you can find.

**Check out the Source** - When an article cites sources, it's good to check them out. Sometimes, official-sounding associations are really biased think tanks or represent only a fringe view of a group of people. If you can't find sources, read as much about the topic as you can to get a feel for what's already out there and decide for yourself if the article is accurate or not.

**Examine URLs** - We see quite a bit of domain manipulation these days. For example, what looks like an .edu domain, followed by .co or "lo" is likely a fake or deceptive site. If you are seeing a slightly variant version of a well-known URL, do some investigating.

**Suspect the sensational** - When you see something posted that looks sensational, it is even more important to be sceptical. Exaggerated and provocative headlines with excessive use of capital letters or emotional language are serious red flags.

**Judge Hard** - If what you're reading seems too good to be true, or too weird, or too reactionary, it probably is.

(source: <https://utopia.ut.edu/FakeNews/factcheck> )

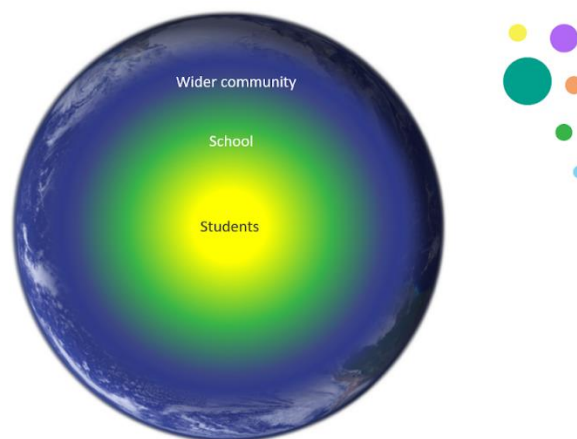


### Activity 5: Teacher Reflection.

**A Note for the Teacher:** 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.



Please spend some time thinking about two or three of the following dimensions at the 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 LTP 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?



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? Do the LTP materials, tools and methods you have used within this LTP 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?







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?






#### **Dimension 4. Environmental / Sustainability awareness:**

-  To what extent do the activities promote awareness and responsibility among your students?
-  Did the implemented LTP materials, methods or tools increased or rather limited the opportunity to increase students' environmental awareness?
-  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?



#### **Dimension 5. Digital 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?
-  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?



#### Dimension 6. Community involvement:



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



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?



#### Dimension 7. Assessment and feedback:



Have you adapted the original assessment methods or the requirements for students after integrating the LTP materials, methods, or tools into your existing teaching concept? If yes, in which way/how?



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.



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.



## Glossary of Icons



- Video



- Quiz



- Worksheets



- Editable Worksheets; task to make notes



- Various Media, e.g. Learning Apps



- Text to Read, or present and actively listen to others



- 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



- Suggested answers



- a short note for a teacher






- a group exchange



## Worksheets



### Start-Up

#### Activity 1. Activism. Looking at climate change activism using Social Media

- **Worksheet**  [Activism - [UNIT 4TikTok Climate Activism Video Worksheet.pdf](#)]
- **Video**  [BBC News highlighting social media on Climate Change](#)
- **Video**  [ABC News clip showcasing social media activism from Australian students](#)

### Consolidation

#### Activity 2. Create your own video and poster

- **Worksheet**  [7 elements - [7 Elements of Digital Storytelling.pdf](#) ]
- **Worksheet**  [Worksheet 8 - [WS8 Fact-checking Fakes.pdf](#) ]



## 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

<b>1: Clarify the Goal</b>	<p>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:</p> <ul style="list-style-type: none"> <li>2.1 A Sustainable Europe.</li> <li>2.2 Sustainability and Digitality.</li> <li>2.3. Sustainability and Environmental Education.</li> <li>2.4 Climate Crisis Resilience.</li> <li>2.5 Dealing with Climate Disinformation.</li> <li>2.6 Green Citizenship in/for Europe.</li> <li>2.7 Sustainable Entrepreneurship Education.</li> </ul>
<b>2: Competency Areas</b>	<p>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</p> <p>Each activity should be aimed to target a number of competences presented in the Framework, and connect to a set of learning outcomes for each LTP unit</p>
<b>3: Networking &amp; Bundle Expertise</b>	<p>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.</p>
<b>4: Working through the design process</b>	<p>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.</p>
<b>5: ASSESSMENT DESIGN And REFLECTION</b>	<p>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.</p>
<b>6: PUBLISH TO TAP-TS PLATFORM</b>	<p>Can you and where can you publish your materials under a Creative Commons license as free as possible. Because that is sustainable!</p>



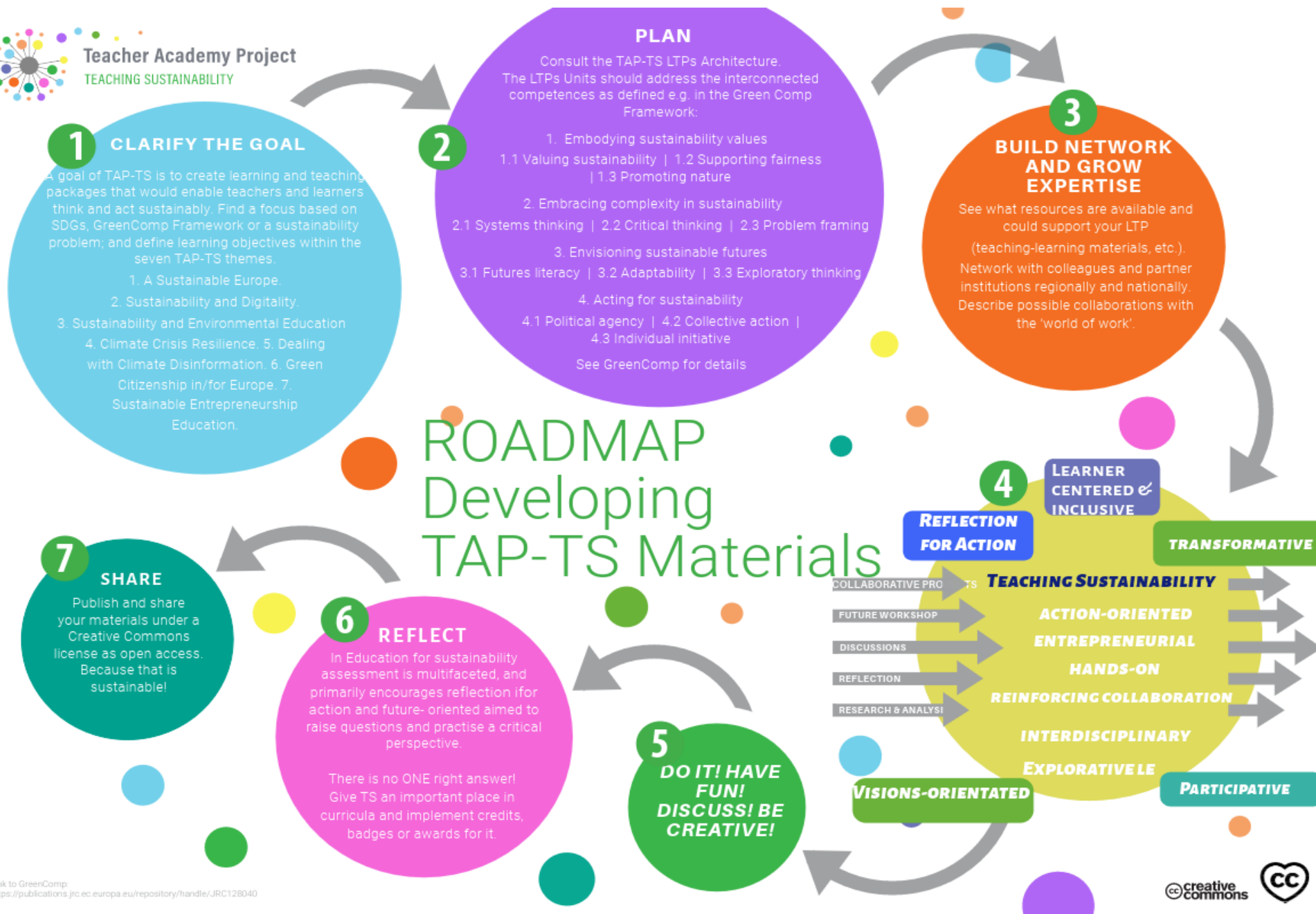
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## GreenComp Framework: the European Sustainability Competence Framework

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:

<p><b>- Embodying sustainability values, including the competences</b></p> <ul style="list-style-type: none"> <li>• valuing sustainability</li> <li>• supporting fairness</li> <li>• promoting nature</li> </ul>	<p><b>- Envisioning sustainable futures, including the competences</b></p> <ul style="list-style-type: none"> <li>• futures literacy</li> <li>• adaptability</li> <li>• exploratory thinking</li> </ul>
<p><b>- Embracing complexity in sustainability, including the competences</b></p> <ul style="list-style-type: none"> <li>• systems thinking</li> <li>• critical thinking</li> <li>• problem framing</li> </ul>	<p><b>- Acting for sustainability, including the competences</b></p> <ul style="list-style-type: none"> <li>• political agency</li> <li>• collective action</li> <li>• individual initiative</li> </ul>

**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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