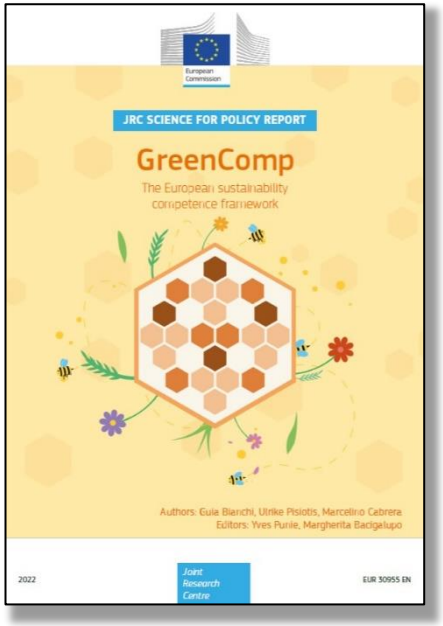
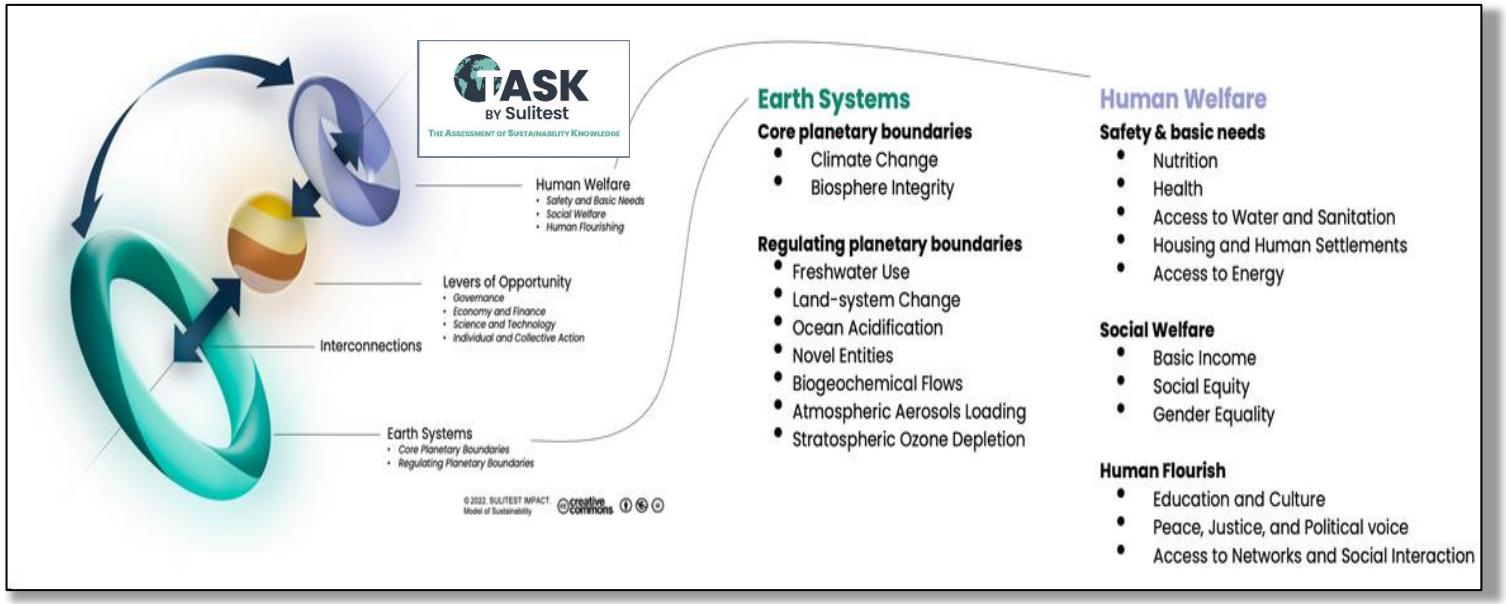
Sulitest TASK Content Alignment with the EU GreenComp Framework

Key Publications



Content Model of Sustainability



Overview of Alignment between GreenComp Framework and Sulitest TASK Framework (i.e., Knowledge Content)

Disclaimer / Avertissement

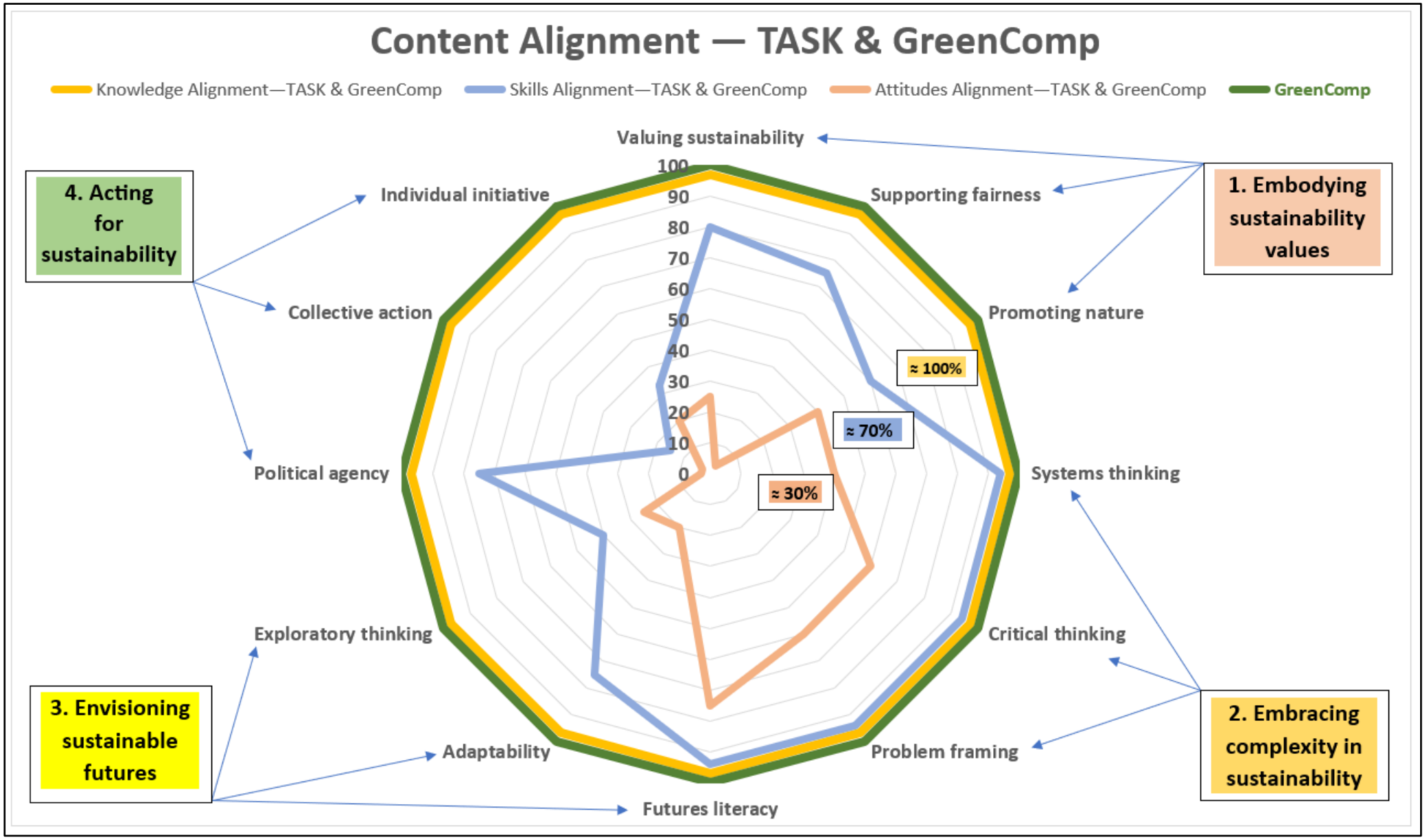
1. GreenComp (GC) is a framework of 169 competence-based learning statements whereas TASK is a MCQ assessment tool structured around 96 knowledge-based subjects
2. Alignment between such different frameworks and tools—as presented here—should thus be considered as *indicative only* and contingent upon how GreenComp and TASK are used
3. All "statistics" indicating "alignment" are generated by counting the number of GC learning statements for which there is a corresponding TASK subject and topic, either explicit or implicit
4. As such, while this method of comparison generates numerical percentages, such numbers should not be understood to affirm a precise correlation or mathematical relationship nor an exhaustive assessment of GC learning statements
5. Articulating learning statements, teaching content, and assessing outcomes is a *qualitative* process which each instructor must adapt and apply to their own specific context
6. While GreenComp did *inform* the process of building the TASK matrix, it is the TASK matrix (and NavChart topics)—not GreenComp—that *guides* the process of writing TASK MCQs
7. MCQs for TASK subjects are in a process of ongoing development, testing, and validation and thus do not yet cover all topics and examples appearing in TASK NavCharts
8. As such, the 12 tables listed below in Annex 3 (Comparative Content Charts) indicate alignment between GC and the TASK matrix and NavCharts, which in turn guide the development of TASK questions

1. Theoretical alignment

1. Both anchored specifically to the *Planetary Boundaries Framework* (Rockström, J., Steffen, W., et al (2009). 'A Safe Operating Space for Humanity', *Nature*, 2009; Steffen *et al*, 2015)
2. Both structured around the *UN Sustainable Development* Goals*: Agenda 2030*
3. Both draw inspiration from UNESCO strategy of *Education for Sustainable Development* (cf., *UNESCO Learning Objectives & Discussion Topics* (Full report, 2017)
4. Both rooted in the conceptual framework on competencies by Wiek A, Withycombe L, Redman CL (2011) "Key competencies in sustainability: a reference framework for academic program development". *Sustainability Science* 6(2):203–218; and: Independent Group of Scientists appointed by the Secretary-General, *Global Sustainable Development Report 2019: The Future is Now – Science for Achieving Sustainable Development*, (United Nations, New York, 2019).
5. Both based in 3-part human development theory: e.g., GreenComp *Knowledge-Skills-Attitudes*; Sulitest definition of sustainability literacy (i.e., a mix of *Knowledge-Skills-Mindset*) (See Annex 4 below, p. 21)
6. GreenComp includes in its skills category cognitive attributes involving the use of logical, intuitive, and creative thinking. TASK includes such skills as *Cognitive capacity*.

2. Structural alignment

1. Both share an embedded approach to sustainability: i.e., an economy contained within a society dependent on a planet of limited resources and clear boundaries (See Sulitest Model)
2. Both articulate learning outcomes (GC statements) as a guide to both determining curricular content and crafting MCQ items (See alignment charts below)
3. Both emphasize importance of SDG-4—*Quality Education*—and Target 4.7 ("ensure all learners acquire the knowledge and skills needed to promote sustainable development")


Content Alignment — TASK & GreenComp
Knowledge Alignment—TASK & GreenComp
Skills Alignment—TASK & GreenComp
Attitudes Alignment—TASK & GreenComp
GreenComp
Valuing sustainability
Supporting fairness
Promoting nature
Systems thinking
Critical thinking
Problem framing
Futures literacy
Adaptability
Exploratory thinking
Political agency
Collective action
Individual initiative
100
90
80
70
60
50
40
30
20
10
0
≈ 100%
≈ 70%
≈ 30%
1. Embodying sustainability values
2. Embracing complexity in sustainability
3. Envisioning sustainable futures
4. Acting for sustainability

Sulitest TASK Content Alignment with EU GreenComp Framework — Simplified Heat Map

By GreenComp Area, Competence, and 3-Part "Knowledge—Skills—Attitude" Human Development Domains

Area →	**1. Embodying sustainability values**		
Competence →	1.1. Valuing sustainability	1.2. Supporting fairness	1.3. Promoting nature
Knowledge			
Skills			
Attitudes			

Area →	**2. Embracing complexity in sustainability**		
Competence →	2.1. Systems thinking	2.2. Critical thinking	2.3. Problem framing
Knowledge			
Skills			
Attitudes			

Area →	**3. Envisioning sustainable futures**		
Competence →	3.1. Futures literacy	3.2. Adaptability	3.3. Exploratory thinking
Knowledge			
Skills			
Attitudes			

Area →	**4. Acting for sustainability**		
Competence →	4.1. Political Agency	4.2. Collective action	4.3. Individual initiative
Knowledge			
Skills			
Attitudes			

Alignment Heat Map Legend	**Full** 100%	**High** 50-80%	**Low** 20-40%	**None** 0%

Alignment Between EU GreenComp and Sulitest TASK
Comparative Content Charts

In each of the following 12 charts below, the text for EU GreenComp learning statements is copied on the left directly from the EU source publication. The text for Sulitest—on the right (in blue)—is drawn from the TASK matrix and Navigational Charts as indicated. GreenComp *Statements* align to the corresponding knowledge content of the TASK matrix subjects and navigational charts as indicated. As the scope of TASK is both wider and more specific than the GreenComp framework, content appearing in TASK fields should be read as *indicative* or *selective*, not exhaustive. For lack of space and the sake of brevity, additional areas of alignment have not been included.

Table 1.1 — Embodying sustainability values—Valuing sustainability

EU GreenComp			Sulitest TASK	
Embodying sustainability values			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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.	3. Levers of Opportunity 3.4. Individual and Collective Action	3.4.2—Cognitive Capacity for Sustainability 3.4.1—Transformative Change
KSA		**Statements**	**TASK Matrix Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows the main views on sustainability: anthropocentrism (human-centric), techno-centrism (technological solutions to ecological problems) and ecocentrism (nature-centered), and how they influence assumptions and arguments.	3.3.2—Technology and Innovation 3.4.2—Cognitive Capacity for Sustainability	3.3.2/9—Emerging environmental technologies 3.4.2/6—Anthropocentrism – Ethics and values 3.4.2/5—Ecocentrism – Ethics and values
	2	Knows the main values and principles underpinning socio-economic models and their relation to sustainability.	3.2.1—Macroeconomic considerations and finance 3.2.2—Microeconomic considerations, Business, & Finance	3.2.1/1—Foundational principles & practices 3.2.2/1—Business models for sustainability
	3	Knows that values and principles influence action that can damage, does not harm, restores or regenerates the environment.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/2—GreenComp framework 3.4.2/8—Indigenous knowledge and ways of being
	4	Knows that various cultures and generations may attach more or less importance to sustainability depending on their value systems.	3.1.1—Laws, Policies, and Institutions 3.4.1—Transformative Change	3.1.1/11—Multistakeholder & indigenous inclusion 3.4.1/5—Changing geopolitics and militarism
	5	Knows that when human demand for resources is driven by greed, indifference, and unfettered individualism, this has negative consequences for the environment.	3.1.2—Infrastructure, Planning & Natural Resource Management 3.1.1—Laws, Policies, and Institutions	3.1.1/9—Problems of global governance (Tragedy of commons) 3.4.2/6—Anthropocentrism – Ethics and values (Tragedy of commons)
	6	Knows how one's position in society influences personal values.	2.2.2—Social equity 2.2.3—Gender equality 2.3.3—Peace, Justice, and Political Voice 3.4.1—Transformative Change	3.4.1/7—Changing climate inequality and injustice 3.4.1/4—Changing vested interests of the fossil fuel industry
Skills	1	Can critically assess and compare underlying sustainability values and principles in arguments, action, policies, and political claims.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/12—Cognitive bias, fallacy, counterfactual thinking
	2	Can evaluate issues and action based on sustainability values and principles.	3.4.1—Transformative Change	3.4.1/10—Climate activism for transformational change
	3	Can bring personal choices and action in line with sustainability values and principles.		
	4	Can articulate and negotiate sustainability values, principles and objectives while recognizing different viewpoints.	3.4.1—Transformative Change	3.4.1/3—Changing approaches to climate action (Reforming climate governance and negotiation processes)
	5	Can identify and include values of communities, including minorities, in problem-framing and decision-making on sustainability.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/8—Indigenous knowledge and ways of being
Attitudes	1	Is prone to acting in line with values and principles for sustainability.		
	2	Is willing to share & clarify views on sustainability values.		
	3	Is open-minded to others and their worldviews.		
	4	Is ready to critique and value various cultural contexts depending on their impact on sustainability	3.4.2—Cognitive Capacity for Sustainability	3.4.2/8—Indigenous knowledge and ways of being

Table 1.2 — Embodying sustainability values—Supporting fairness

EU GreenComp			Sulitest TASK	
Embodying sustainability values			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
1.2 **Supporting fairness**		To support equity and justice for current and future generations and learn from previous generations for sustainability.	3. Levers of Opportunity 2.2. Social Welfare 2.3. Human Flourishing 3.1. Governance	3.1.1—Laws, Policies, and Institutions 2.2.2—Social Equity 2.2.3—Gender Equality 2.3.2—Peace, Justice, and Political Voice
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows that ethical concepts and justice for current and future generations are related to protecting nature.	2.3.2—Peace, Justice, and Political Voice 3.1.1—Laws, Policies, and Institutions	2.3.2/1—Holistic approach to peace, justice, and political voice 3.1.1/11—Multistakeholder & indigenous inclusion
	2	Knows about environmental justice, namely considering the interests and capabilities of other species and environmental ecosystems.	1.1.2—Biosphere Integrity 3.1.1—Laws, Policies, and Institutions	1.1.2/6—Animal welfare and ecosystem rights 3.1.1./3—Justice: Nation-state and international
	3	Knows the importance of preserving nature for future generations for its own sake.	1.1.2—Biosphere Integrity 3.4.2—Cognitive Capacity for Sustainability	1.1.2/8—Ecosystem services: Nature's Contribution to People-NCP 3.4.2/8—Indigenous knowledge and ways of being
	4	Knows that individuals and communities differ in how and how much they can promote sustainability.	3.2.2—Business, Industry, & Microeconomic Considerations	3.2.2/12—Resilient economies and communities
Skills	1	Can apply equity and justice for current and future generations as criteria for environmental preservation and the use of natural resources.	2.2.2—Social Equity 2.2.3—Gender Equality 3.1.1—Laws, Policies, and Institutions	2.2.2/7—Diversity, equity, and inclusion efforts 2.2.3/—Principles of gender equality 3.1.1/11—Multistakeholder & indigenous inclusion
	2	Can assess and question personal needs to carefully manage resources in the pursuit of longer-term goals and common interests.	3.1.2—Infrastructure, Planning & Natural Resource Management 3.2.2 - Business, Industry, & Microeconomic Considerations	3.1.2/2—Circular economy: general terms 3.1.2/12—Reuse 3.2.2/9—Consumer behavior 3.2.2/11—Ethical consumerism
	3	Can respect, understand, and appreciate various cultures in relation to sustainability, including minority cultures, local and indigenous traditions, and knowledge systems.	2.2.2—Social Equity 2.3.1—Education and Culture 3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	2.2.2/4—Discrimination 2.3.1/9—Traditional Ecological Knowledge (TEK) 3.3.1/5—System Dynamics elements 3.3.1/8—Science and society: Science for sustainability 3.4.2/8—Indigenous knowledge and ways of being
	4	Can help build consensus on sustainability in an inclusive manner.		
Attitudes	1	Is committed to decreasing material consumption.		
	2	Has a sense of belonging to a common humanity and of solidarity with future generations.		
	3	Is committed to respecting the interests of future generations.		

Table 1.3 — Embodying sustainability values—Promoting nature

EU GreenComp			Sulitest TASK	
Embodying sustainability values			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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.	1. Earth Systems 1.1. Core Planetary Boundaries 1.2. Regulating Planetary Boundaries	1.1.1—Climate Change 1.1.2—Biosphere Integrity 2.3.1—Education and Culture
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows about the main parts of the natural environment (geosphere, biosphere, hydrosphere, cryosphere, and atmosphere) and that living organisms and non-living components are closely linked and depend on each other.	**All Earth Systems subjects:** 1.1.2—Biosphere Integrity 1.2.2—Land-System Change	1.1.2/1—Terminology of biodiversity 1.2.1/1—Natural cycle and processes 1.2.2/2—Ecosystem services
	2	Knows that our wellbeing, health, and security depend on the wellbeing of nature.	1.1.2—Biosphere Integrity 1.2.1—Freshwater Use	1.1.2/8—Ecosystem services: Nature's Contribution to People (NCP) 1.2.1/4—Human use and misuse of freshwater
	3	Knows that people are part of nature and that the divide between human and ecological systems is arbitrary.	3.4.2—Cognitive Capacity for Sustainability 2.3.1—Education and Culture	3.4.2/5—Ecocentrism – Ethics and values 2.3.1/7—Education for Sustainable Development 2.3.1/8—Ecopedagogy
	4	Knows that humans shape ecosystems and that human activities can rapidly and irreversibly damage ecosystems.	**All Earth Systems subjects:** 1.1.1—Climate Change 1.1.2—Biosphere Integrity 1.2.1—Freshwater Use 1.2.2—Land-System Change 1.2.3—Ocean Acidification 1.2.4—Novel Entities 1.2.5—Biogeochemical Flows 1.2.6—Atmospheric Aerosols Loading 1.2.7—Stratospheric Ozone Depletion	**Among others:** 1.1.1/4—Anthropogenic climate change 1.1.2/2—The 6th extinction 1.2.1/5, 6—Water pollution; Threats to freshwater resources 1.2.2/4, 5—Land degradation mechanisms; Agriculture 1.2.3/3—Anthropogenic causes 1.2.4/8—Release of NEs into the environment 1.2.5/2, 3—The Nitrogen (N); Phosphorous (P) Cycle & their disruptions 1.2.6/3—Anthropogenic sources of aerosols
	5	Knows that damaging and exhausting natural resources can lead to disasters and conflicts (e.g., loss of biodiversity, draughts, mass migration and war).	**All Earth Systems subjects:** 1.1.1—Climate Change 1.1.2—Biosphere Integrity 1.2.1—Freshwater Use 1.2.2—Land-System Change 1.2.3—Ocean Acidification 1.2.4—Novel Entities 1.2.5—Biogeochemical Flows 1.2.6—Atmospheric Aerosols Loading 1.2.7—Stratospheric Ozone Depletion	**Among others:** 1.1.1/5, 6—Climate change impacts : Earth Systems; Human Welfare 1.1.2/8—Ecosystem services: Nature's Contribution to People (NCP) 1.2.1/8—Impacts of water scarcity and overabundance 1.2.2/6—Soil health and management 1.2.3/5, 6, 7—Impact on marine life; coral & coastal ecosystems; Socio-economic impact 1.2.4/11—Toxicity and impact on human health 1.2.5/6—Socio-economic impacts of biogeochemical disruptions 1.2.6/5, 6, 7—Health, climate, ecosystems consequences
	6	Knows about the need to decouple production from natural resources and well-being from consumption.	3.2.1—Macroeconomic Considerations and Finance 3.4.1—Transformative Change	3.2.1/4—Ecological limits to green growth and decoupling 3.2.1/7—Degrowth, post-growth economics 3.2.1/9—Environmental Economics 3.4.1/8—Changing high-carbon lifestyles
Skills	1	Can assess own impact on nature and consider the protection of nature an essential task for every individual.	3.4.2—Cognitive Capacity for Sustainability 3.4.1—Transformative Change	3.4.2/7—Educating for the Anthropocene 3.4.1/9—Changing social imaginaries of how we might live sustainably
	2	Can see and imagine humans living together and respecting other life forms.		
	3	Can acknowledge cultural diversity within planetary limits.	2.3.1—Education and Culture 2.2.2—Social Equity 3.4.2—Cognitive Capacity for Sustainability	2.3.1/9—Traditional Ecological Knowledge (TEK) 2.3.1/10—Culture and sustainability 2.2.2/7—Diversity, equity, and inclusion efforts 3.4.2/8—Indigenous knowledge and ways of being
	4	Can find opportunities to spend time in nature and helps to restore it.		
	5	Can identify processes or action that avoid or reduce the use of natural resources.	3.1.2—Infrastructure, Planning & Natural Resource Managem't 3.2.2—Business, Industry, & Microeconomic Considerations	3.1.2/11—Recycling 3.1.2/12—Reuse 3.2.2/9—Consumer behavior 3.2.2/11—Ethical consumerism
Attitudes	1	Cares about a harmonious relationship existing between nature & humans.		
	2	Is critical towards the notion that humans are more important than other life forms.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/5—Ecocentrism – Ethics and values 3.4.2/6—Anthropocentrism - Ethics and values
	3	Shows empathy with all life forms.		
	4	Is appreciative of nature's role in our well-being, health, and security.	1.1.2—Biosphere Integrity	1.1.2/8—Ecosystem services: Nature's Contribution to People-NCP
	5	Continuously strives to restore nature.		

Table 2.1 — Embracing complexity in sustainability—Systems thinking

EU GreenComp			Sulitest TASK	
Embracing complexity in sustainability			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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.	3. Levers of Opportunity 3.3. Science and Technology 3.4. Individual and collective action	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows that every human action has environmental, social, cultural, and economic impacts.	**All Earth Systems subjects : System Impacts** **All Human Welfare subjects : System Impacts**	1.1.1/5—Climate change impacts: On Earth systems 1.1.1/5—Climate change impacts: On Human Welfare 3.2.2/1—ESD competency framework (Systems thinking) 3.2.2/2—GreenComp framework
	2	Knows that human action influences outcomes across time and space, leading to positive, neutral, or negative results.	3.1.2—Infrastructure, Planning, & Resource Management	1.1.1/5—Climate change impacts: On Earth Systems 1.1.1/5—Climate change impacts: On Human Welfare
	3	Knows about life cycle thinking and its relevance for sustainable production and consumption.	3.2.2—Business, Industry, & Microeconomic Considerations	3.2.2/2—Sustainable supply chain management
	4	Knows the main concepts and aspects of complex systems (synthesis, emergence, interconnectedness, feedback loops and cascade effects) and their implications for sustainability.	3.3.1—Sustainability Science	3.2.2/5—System Dynamics elements (Feedback loop)
	5	Knows the United Nations SDGs and is aware of interconnections and possible tensions between individual goals.	2.3.1—Education and Culture 3.1.1—Laws, Policies, and Institutions 3.3.1—Sustainability Science	2.3.1/1—The centrality of education 2.3.1/7—Education for Sustainable Development 3.1.1/6—Major global governance institutions 3.2.2/3—Sustainability theories
Skills	1	Can describe sustainability as a holistic concept that includes environmental, economic, social, and cultural issues.	3.3.1—Sustainability Science	3.2.2/3—Sustainability theories
	2	Can assess interactions between environmental, economic, social, and cultural aspects of sustainability action, events, and crises (e.g., migration caused by climate change or wars caused by resource scarcity).	**All Earth Systems subjects :** 1.1.1—Climate Change 1.1.2—Biosphere Integrity 1.2.1—Freshwater Use 1.2.2—Land-System Change 1.2.3—Ocean Acidification 1.2.4—Novel Entities 1.2.5—Biogeochemical Flows 1.2.6—Atmospheric Aerosols Loading 1.2.7—Stratospheric Ozone Depletion	**Among others:** 1.1.1/5, 6—Climate change impacts: On Earth Systems; On Human Welfare 1.1.2/8—Ecosystem services: Nature's Contribution to People 1.2.1/8—Impacts of water scarcity and overabundance 1.2.2/6—Soil health and management 1.2.3/5, 6, 7—Impact on marine life ; coral & coastal ecosystems ; Socio-economic impact 1.2.4/11—Toxicity and impact on human health 1.2.5/6—Socio-economic impacts of biogeochemical disruptions 1.2.6/5, 6, 7—Health, climate, ecosystems consequences
	3	Can assess how humans and nature interact across space and time.	1.1.2—Biosphere Integrity	1.1.2/2,3,4,5—6th extinction, Indirect drivers, Indirect-to-direct: Actions directly affecting nature Direct drivers
	4	Can use life cycle thinking to analyze the risks and benefits of human action.	3.2.2—Business, Industry, & Microeconomic Considerations	3.2.2/2—Sustainable supply chain management
	5	Can identify in a system those challenges and opportunities that have the greatest potential to trigger change for sustainability.	3.4.1—Transformational Change 3.4.2—Cognitive capacity for Sustainability	3.4.1/1—Change: attributes, principles, mechanisms, agents 3.4.1/2—Insights from theories of change and leadership
Attitudes	1	Acknowledges the root causes of unsustainability for which humans are responsible, such as climate change.	1.1.1—Climate Change 3.4.1—Transformational Change	1.4.1/4—Anthropogenic climate change 3.4.1/8—Changing high-carbon lifestyles
	2	Has a holistic grasp of connections and interactions between natural events and human actions.	1.1.1—Climate Change 3.4.1— Transformational Change	1.4.1/4—Anthropogenic climate change 3.4.1/8—Changing high-carbon lifestyles
	3	Is concerned about the short- and long-term impacts of personal actions on others and the planet.		
	4	Cares about systemic consequences of environmental crises for current and future generations and for other species.		
	5	Is concerned about unpredictable cascade effects of human action.		

Table 2.2 — Embracing complexity in sustainability—Critical thinking

EU GreenComp			Sulitest TASK	
Embracing complexity in sustainability			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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.	3. Levers of Opportunity 3.3. Science and Technology 3.4. Individual and collective action	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows that our understanding of sustainability is always evolving.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/1—Science and scientific methods 3.3.1/2—Scientific research 3.3.1/3—Sustainability theories 3.4.2/7—Educating for the Anthropocene
	2	Knows that various biases can influence the discourse on sustainability, including reasoning, communication, and political narratives	3.3.1—Sustainability Science 3.4.1—Transformative Change	3.3.1/1—Science and scientific methods 3.3.1/3—Sustainability theories 3.4.2/12—Cognitive bias, fallacy, counterfactual thinking
	3	Knows that predominant narratives can shape the formulation of sustainability problems.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/8—Science and society: Science for sustainability 3.3.1/9—Science: Misuse and manipulation 3.4.2/12—Cognitive bias, fallacy, counterfactual thinking
	4	Knows sustainability claims without robust evidence are often mere communication strategies, also known as greenwashing.	2.3.2—Peace, Justice, and Political Voice 3.3.1—Sustainability Science	2.3.2/6—The role of media in politics and justice 3.3.1/9—Science: Misuse and manipulation
	5	Knows that tackling unsustainable patterns requires challenging the status quo, at individual and collective level, by organizations and in politics.	3.2.2—Business, Industry, & Microeconomic Considerations 3.4.1—Transformative Change	3.2.2/10—Greenwashing and other harmful practices 3.4.1/3,4,5,6,7,8—Changing [soc/eco/pol structures]
Skills	1	Can apply personal reasoning to address criticism and arguments on sustainability matters.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/1—ESD competency framework (Self-awareness competency) 3.4.2/11—Insights from behavioral research
	2	Can analyze and assess arguments, ideas, actions, and scenarios to determine whether they are in line with evidence and values in terms of sustainability.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/1—ESD competency framework (critical thinking competency) 3.4.2/3—21st century competency framework (critical thinking) 3.4.2/4—Inner Development Goals framework
	3	Can scrutinize information sources and communication channels on sustainability to assess the quality of the information they provide.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/1— Science and scientific methods 3.3.1/2—Scientific research (Peer-review process) 3.4.2/12—Cognitive bias, fallacy, counterfactual thinking
	4	Can reflect on the roots and motives of decisions, action, and lifestyles to compare individual benefits and costs with societal benefits and costs.	3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.4.1/8—Changing high-carbon lifestyles 3.4.1/4—Changing vested interests of the fossil fuel industry 3.4.2/—6—Anthropocentrism – Ethics and values
	5	Can look at various sources of evidence and assess their reliability to form opinions about sustainability.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/8—Science and society: Science for sustainability 3.3.1/9—Science: Misuse and manipulation 3.4.2/1—ESD competency framework (critical thinking) 3.4.2/3—21st century competency framework (critical thinking) 3.4.2/4—Inner Development Goals framework 3.4.2/12—Cognitive bias, fallacy, counterfactual thinking
Attitudes	1	Is curious and inquisitive about the links between the environment, human action, and sustainability.		
	2	Trusts science even when lacking some of the knowledge required to fully understand scientific claims.	3.3.1—Sustainability Science	3.3.1/1—Science and scientific methods 3.3.1/2—Scientific research
	3	Takes an evidence-based perspective and is ready to revise it when new data emerge.	3.3.1—Sustainability Science	3.3.1/1—Science and scientific methods 3.3.1/2—Scientific research
	4	Is willing to accept and discuss sustainability questions, issues, and opportunities.		
	5	Is skeptical about information on sustainability before verifying its source and investigating potential vested interests.	3.3.1—Sustainability Science	3.3.1/1—Science and scientific methods 3.3.1/2—Scientific research

Table 2.3 — Embracing complexity in sustainability—Problem framing

EU GreenComp			Sulitest TASK	
Embracing complexity in sustainability			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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.	3. Levers of Opportunity 3.1. Governance 3.3. Science and Technology 3.4. Individual and Collective Action	3.1.1—Laws, Policies, and Institutions 3.1.2—Infrastructure, Planning, & Natural Resource Management 3.3.1—Sustainability Science 3.3.2—Technology and Innovation 3.4.2—Cognitive Capacity for Sustainability
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows that sustainability problems are often complex and that some cannot be solved entirely.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/2—GreenComp (Embracing complexity in sustainability) 3.4.2/4—Inner Development Goals framework (complexity awareness) 3.4.2/10—Insights from brain research (Sub-optimal decision-making)
	2	Knows that measures and action to address a sustainability problem depend on how the problem is framed (by/with/for whom, where, when, why).	3.1.1—Laws, Policies, and Institutions 3.3.1—Sustainability Science	3.1.1./1, 4—Principles: good governance; Impediments: good governance 3.3.1/8—Science and society: Science for sustainability 3.3.1/9—Science: Misuse and manipulation
	3	Knows that to identify fair and inclusive actions, it is necessary to look at sustainability problems from different stakeholder perspectives.	3.1.1—Laws, Policies, and Institutions 3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.1.1/8—Global partnerships for financing sustainability 3.1.1/11—Multi-stakeholder and indigenous inclusion 3.3.1/—Science and society: Science for sustainability 3.4.2/4—Inner Development Goals framework (Collaborating, inclusive mindset)
	4	Knows that sustainability issues range from relatively simple to complex problems and that establishing their type helps find suitable approaches.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/5—System Dynamics elements (Systems thinking and modeling) 3.4.2/11—Insights from behavior science (Theories: risk, uncertainty, wicked problems) 3.4.2/10—Insights from brain research (Sub-optimal decision-making)
	5	Knows that current or potential sustainability problems can quickly evolve and therefore need to be frequently redefined and reframed.	3.3.1—Sustainability Science 3.4.1—Transformative Change	3.3.1/1—Science and scientific methods 3.4.2/3—Changing approaches to climate actions (Reforming climate governance)
Skills	1	Can factor in perspectives of multiple stakeholders, considering all life forms and the environment to frame current and potential sustainability challenges.	3.1.1—Laws, Policies, and Institutions 3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.1.1/8—Global partnerships for financing sustainability 3.1.1/11—Multi-stakeholder and indigenous inclusion 3.3.1/—Science and society: Science for sustainability 3.4.2/4—Inner Development Goals framework (Collaborating, inclusive mindset) 3.4.2/5—Ecocentrism – Ethics and values
	2	Can apply a flexible, systemic, life cycle and adaptive approach when framing current and potential sustainability challenges.	3.1.2—Infrastructure, Planning, & Natural Resource Management 3.4.2—Cognitive Capacity for Sustainability	3.1.2/—Reuse (Product life-cycle management) 3.1.2/—Green transition planning and management (Adaptive management) 3.4.2/3—21st Century competency framework (Knowledge: interdisciplinarity)
	3	Can establish a transdisciplinary approach to framing current and potential sustainability challenges.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/3—21st Century competency framework (Knowledge: interdisciplinarity)
	4	Can continuously explore the problematics of a sustainability issue to broaden the range of alternatives and solutions.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/1—Science and scientific methods (Hypotheses, predictions, experiments) 3.4.2/1—ESD competency framework (Anticipatory thinking)
	5	Can identify appropriate approaches to mitigate, adapt and potentially solve sustainability problems.	3.4.2—Cognitive Capacity for Sustainability 3.3.2—Technology and Innovation	3.4.2/1—ESD competency framework (Integrated problem-solving competency) 3.3.2/8—Climate engineering 3.3.2/11—Artificial intelligence
Attitudes	1	Strives to tap into all sustainability competences when framing current and potential sustainability challenges.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/3—21st Century competency framework (Knowledge: interdisciplinarity)
	2	Is committed to presenting a sustainability problem as a complex one rather than oversimplifying it.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/2—GreenComp (Embracing complexity in sustainability) 3.4.2/4—Inner Development Goals framework (complexity awareness) 3.4.2/10—Insights from brain research (Sub-optimal decision-making)
	3	Tries to detach one's own judgement from the process of framing the problem.		
	4	Listens actively and shows empathy when collaborating with others to frame current and potential sustainability challenges.		

Table 3.1 — Envisioning sustainable futures—Futures literacy

EU GreenComp			Sulitest TASK	
Envisioning sustainable futures			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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	3. Levers of Opportunity 3.1. Governance 3.3. Science and Technology 3.4. Individual and Collective Action	3.3.1—Sustainability Science 3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows the difference between expected, preferred, and alternative futures for sustainability scenarios.	3.4.1—Transformative Change	3.4.1/3—Changing approaches to climate change 3.4.1/9—Changing social imaginaries of how we might live sustainably
	2	Knows the difference between short-, medium- and long-term approaches and their implications for sustainability scenarios.	1.1.1—Climate Change 3.4.1—Transformative Change	1.1.1/7, 8, 9—Climate change prevention, adaptation, mitigation 3.4.1/3—Changing approaches to climate change 3.4.1/9—Changing social imaginaries of how we might live sustainably
	3	Knows that scenario development can factor in past events and current signals of change.	1.1.1 — Climate Change 3.4.1—Transformative Change	1.1.1/7, 8, 9—Climate change prevention, adaptation, mitigation 3.4.1/3—Changing approaches to climate change
	4	Knows that scenarios can inform decision-making for a desired sustainable future.	1.1.1—Climate Change	1.1.1/7, 8, 9 Climate change prevention, adaptation, mitigation
	5	Knows that effects caused by humans play a major role when mapping alternative and preferred future scenarios.	1.1.1—Climate Change 1.1.2—Biosphere Integrity 1.2.1—Freshwater Use 1.2.2—Land Systems Change 1.2.4—Novel Entities 3.3.1—Sustainability Science 3.4.1 —Transformative Change	1.1.1/4—Anthropogenic climate change 1.1.2/2—The 6th extinction 1.1.2/3, 5—Indirect drivers, Direct drivers 1.2.1/4—Human use and misuse of freshwater 1.2.2/1—Land uses and land ecosystems 1.2.2/4—Land degradation mechanisms 1.2.2/5—Agricultural expansion and intensification 1.2.4/12—Importance of Precautionary Principle 3.3.1/4—The Anthropocene 3.3.1/9—Science: misuse and manipulation 3.4.1/1—Change: attributes, principles, mechanisms, agents 3.4.1/8—Changing high-carbon lifestyles 3.4.1/9—Changing social imaginaries of how we might live sustainably
Skills	1	Can envisage alternative futures for sustainability that are grounded in science, creativity, and values for sustainability.	3.3.1—Sustainability Science 3.3.2—Technology and Innovation 3.4.1—Transformative Change	3.3.1/6—Climate science 3.3.1/8—Science and society: science for sustainability 3.3.2/1—Sustainable technology: general terms 3.4.1/3—Changing approaches to climate action
	2	Can analyze and evaluate futures and their opportunities, limitations, & risks.	1.1.1—Climate Change	1.1.1/6—Climate change impacts: on human welfare
	3	Can identify action and initiatives that lead to a preferred future.	3.1.1—Laws, Policies, ad Institutions	3.1.1/1—Principles of good governance 3.1.1/2—Instruments and processes of good governance
	4	Can anticipate future implications by looking at past trends and present conditions.	3.4.1—Transformative Change	3.4.1/3—Changing approaches to climate action 3.4.1/9—Changing social imaginaries of how we might live sustainably
Attitudes	1	Has a long-term perspective when planning, assessing, and evaluating sustainability actions.	3.4.1—Transformative Change	3.4.1/3—Changing approaches to climate action 3.4.1/9—Changing social imaginaries of how we might live sustainably
	2	Is concerned about the impact of one's own action on the future.		
	3	Is aware that the projected consequences on self and community may influence preferences for certain scenarios above others.	3.1.1—Laws, Policies, and Institutions	3.1.1./1—Principles of goof governance
	4	Seeks to combine rigorous methods for thinking about the future with creative and participatory approaches.	3.4.1—Transformative Change	3.4.1/3—Changing approaches to climate change

Table 3.2 — Envisioning sustainable futures—Adaptability

EU GreenComp			Sulitest TASK	
Envisioning sustainable futures			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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. **	3. Levers of Opportunity 2.3. Human Flourishing 3.4. Individual and Collective Action	2.3.1—Education and Culture 3.4.2—Cognitive Capacity for Sustainability 3.4.2—Transformational Change
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows that human actions may have unpredictable, uncertain, and complex consequences on the environment.	1.2.4—Novel Entities 3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	1.2.4/12—Importance of Precautionary Principle 3.3.1/7—Ecology and biology 3.4.2/1—ESD Competency framework (Systems thinking) 3.4.2/2—GreenComp framework (Embracing complexity) 3.4.2/4—Inner Development goals: (Thinking, complexity awareness)
	2	Knows that there is no single solution to complex socioecological problems, but rather different alternatives depending on time and context.	3.2.1—Macroeconomic Considerations and Finance 3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.2.1/12—Alternative sustainable financial systems 3.4.1/9—Changing social imaginaries of how we might live sustainably 3.4.2/1—ESD Competency framework (Normative, Strategic competencies)
	3	Knows about risks associated with transformations of the natural environment by humans.	1.1.2—Biosphere Integrity 1.2.2—Land-System Change 3.3.1—Sustainability Science 3.3.2—Technology and Innovation 3.4.2—Cognitive Capacity for Sustainability	1.1.2/2—The 6th extinction / Climate change and biodiversity 1.2.2/2—Ecosystem services 1.2.2/4—Land degradation mechanisms 3.3.1/6—Climate science (Geoengineering) 3.3.2/8—Climate engineering 3.4.2/1—ESD competency framework (Anticipatory competency)
	4	Knows which aspects of personal lifestyle have higher impacts on sustainability and require adapting (e.g., air travel, car usage, meat consumption, fast fashion).	2.1.1—Nutrition 3.2.2—Microeconomic Considerations, Business, and Industry 3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	2.1.1/8—Food diets and consumer behaviors 3.2.2/9—Consumer behavior 3.2.2/10—Greenwashing and other harmful practices 3.4.1/8—Changing high-carbon lifestyles 3.4.2/5—Ecocentrism – Ethics and values
	5	Knows the importance of the link between local impacts and global sustainability.	3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.4.1/1—Change attributes, principles, mechanisms, agents (grassroot agents) 3.4.1/10—Climate activism for transformational change (Grassroots movements, etc.) 3.4.2/1—ESD competency framework (Collaborative competency)
Skills	1	Can adapt to different approaches when working on sustainability.		
	2	Can identify and adapt to different lifestyles and consumption patterns to use fewer natural resources.	3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.4.1/8—Changing high-carbon lifestyles 3.4.1/9—Changing social imaginaries of how we might live sustainably
	3	Can take into account local circumstances when dealing with sustainability issues and opportunities.	3.1.1—Laws, Policies, and Institutions 3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.1.1/8—Global partnerships for financing sustainability 3.1.1/11—Multi-stakeholder and indigenous inclusion 3.3.1/—Science and society: Science for sustainability 3.4.2/4—Inner Development Goals: (Collaborating, inclusive mindset) 3.4.2/5—Ecocentrism – Ethics and values
	4	Can navigate the ambiguity and uncertainty around sustainability issues while thinking about alternatives.	3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.4.1/8—Changing high-carbon lifestyles 3.4.1/9—Changing social imaginaries of how we might live sustainably
Attitudes	1	Acknowledges the emotional impact of climate change, loss of biodiversity and impoverishment.	3.4.2—Cognitive Capacity for Sustainability	3.4.2/9—Ecopsychology / Environmental Psychology (eco-anxiety, eco grief, etc.)
	2	Is willing to discontinue unsustainable practices and try alternative solutions.		
	3	Is comfortable considering sustainable options, even if competing with personal interests.		
	4	Is flexible, resourceful, and adaptable in coping with unexpected environmental changes.		
	5	Copes with trade-offs in decisions on sustainability within and across domains (environmental, social, economic, cultural, political) and across time and space.		

Table 3.3 — Envisioning sustainable futures—Exploratory thinking

EU GreenComp			Sulitest TASK	
Envisioning sustainable futures			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
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.	3. Levers of Opportunity 2.3. Human Flourishing 3.3. Science and Technology 3.4. Individual and Collective Action	2.3.1—Education and Culture 3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows that sustainability problems must be tackled by combining different disciplines, knowledge cultures and divergent views to initiate systemic change.	3.4.1—Transformative Change 3.3.1—Sustainability Science	3.3.1/5—System Dynamics elements
	2	Knows the importance of exploring and experimenting with new avenues and ideas to tackle complex sustainability challenges.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/2—Scientific research 3.4.2/7—Education for the Anthropocene (Knowledge of mindsets favorable to sustainability)
	3	Knows the main concepts of a circular economy and society.	3.1.2—Infrastructure, Planning & Natural Resource Management 3.2.2—Business, Industry, and Microeconomic Considerations	3.1.2/2—Circular economy: general terms 3.2.2/1—Business models for sustainability
	4	Knows about sustainability and Sustainability concepts, including origins and further developments, main stakeholders, implications for society and the planet, environmental protection, restoration, and regeneration.	1.1.2—Biosphere Integrity 1.2.2—Land-System Change 1.2.5—Biogeochemical Flows 3.1.2—Infrastructure, Planning & Natural Resource Manage 3.3.1—Sustainability Science	1.1.2/9—Integrated approaches for sustainable landscapes 1.2.2/8—Nature-based solutions 1.2.5/7—Restoration and management strategies 3.1.2/1—Infrastructure management 3.3.1/3—Sustainability theories 3.3.1/4—The Anthropocene
Skills	1	Can use evidence and research to better understand, explain, predict, and manage change for sustainability.		
	2	Can combine knowledge and resources to tackle sustainability challenges.		
	3	Can synthesize sustainability-related information and data from different disciplines.	3.3.1—Sustainability Science 3.4.2—Cognitive Capacity for Sustainability	3.3.1/2—Scientific research 3.3.1/8—Science and society: Science for sustainability 3.4.2/3—21st Century competency framework (Knowledge: interdisciplinarity)
	4	Can creatively apply circular economy concepts, such as valuing quality over quantity and reusing and repairing.	3.1.2—Infrastructure, Planning & Natural Resource Manage 3.2.2—Business, Industry, & Microeconomic Considerations	3.1.2/2—Circular economy: general terms 3.2.2/1—Business models for sustainability
	5	Can accommodate divergent opinions.		
Attitudes	1	Is prone to experiment and not afraid to fail when faced with sustainability challenges.		
	2	Embraces thinking both inside and outside of norms in relation to sustainability.	3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.4.1/9—Changing social imaginaries of how we might live sustainably 3.4.2/4—Inner Development Goals framework (Acting/Enabling Change/creativity) 3.4.2/7— Education for the Anthropocene (Knowledge of mindsets favorable to sustainability)
	3	Is committed to considering sustainability challenges and opportunities from different angles.		
	4	Dares to make unusual choices.		

Table 4.1 — Acting for sustainability—Political agency

EU GreenComp			Sulitest TASK	
Acting for sustainability			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
4.1 **Political agency**		To navigate the political system, identify political responsibility and accountability for unsustainable behavior, and demand effective policies for sustainability.	3. Levers of Opportunity 3.1. Governance 3.2. Economy and Finance 3.4. Individual and Collective Action	2.3.2—Peace, Justice, and Political Voice 3.1.1—Laws, Policies, and Institutions
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows how political systems, including their components, should work for sustainability.	2.3.2—Peace, Justice, and Political Voice 3.1.1—Laws, Policies, and Institutions	2.3.2/4—Civil and political rights 3.1.1/1—Principles of good governance 3.1.1/2—Instruments & processes of good governance
	2	Knows the relevant political stakeholders for sustainability in one's own community.	2.3.2—Peace, Justice, and Political Voice 3.1.1—Laws, Policies, and Institutions	2.3.2/2—Political systems 2.3.2/5—Governance and lawmaking 3.1.1/11—Multi-stakeholder and indigenous inclusion
	3	Knows how to engage with political and economic stakeholders to co-create sustainability policies with community representatives.	2.3.2—Peace, Justice, and Political Voice 3.2.2—Business, Industry, & Microeconomic Considerations	2.3.2/5—Governance and lawmaking 3.2.2/4—Corporate Social Responsibility (CSR) 3.2.2/7—Multistakeholder governance
	4	Knows policies that assign responsibility for environmental damage (e.g., "polluter pays").	1.1.1—Climate Change 3.1.1—Laws, Policies, and Institutions	1.1.1/10 – Climate justice ("Polluter pays" principle) 3.3.1/10—Role of state governments in sustainability
Skills	1	Can analyze how power structures and political systems exert influence.	2.3.2—Peace, Justice, and Political Voice 3.4.1—Transformative Change	2.3.2/2—Political systems 3.4.1/5—Changing geopolitics and militarism
	2	Can engage in democratic decision-making and civic activities for Sustainability.		
	3	Can identify relevant social, political, and economic stakeholders in one's own community and region to address a sustainability problem.	2.3.2—Peace, Justice, and Political Voice 3.1.1—Laws, Policies, and Institutions	2.3.2/2—Political systems 2.3.2/5—Governance and lawmaking 3.1.1/11—Multi-stakeholder and indigenous inclusion
	4	Can propose alternative pathways for sustainability.	3.4.1—Transformative Change	3.4.1/3—Changing approaches to climate change 3.1.1/5—Changing economics and financialization 3.4.1/8—Changing high-carbon lifestyles
Attitudes	1	Is committed to becoming an agent of change to achieve sustainability		
	2	Expects governments and public institutions to serve the common good.		
	3	Demands political accountability for unsustainable behavior.		
	4	Is committed to questioning the effectiveness of policies for sustainability.		

Table 4.2 — Acting for sustainability—Collective action

EU GreenComp			Sulitest TASK	
Acting for sustainability			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
4.2 **Collective action**		To act for change in collaboration with others.	3. Levers of Opportunity 3.1. Governance 3.2. Economy and Finance 3.4. Individual and Collective Action	3.4.1—Transformative Change
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows the main sustainability stakeholders in one's own community and how to contact them.	2.3.2—Peace, Justice, and Political Voice 3.1.1—Laws, Policies, and Institutions	2.3.2/2—Political systems 2.3.2/5—Governance and lawmaking 3.1.1/11—Multi-stakeholder and indigenous inclusion
	2	Knows that working with others to promote nature and support fairness requires respect for democracy.	3.1.1—Laws, Policies, & Institutions 3.2.2—Business, Industry, & Microeconomic Considerations	3.1.1./1—Principles of good governance 3.2.2/8—Cooperative governance and democratic decision-making
	3	Knows how to work with diverse participants to create inclusive visions for a more sustainable future.	3.1.1—Laws, Policies, & Institutions 3.4.1—Transformative Change	3.1.1./1—Principles of good governance 3.1.1./11—Multi-stakeholder and indigenous inclusion 3.4.1/2—Insights from theories of change and leadership 3.4.1/7—Changing climate inequity and injustice
	4	Knows the importance of empowering individuals and organizations to work collaboratively.	3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.4.1/2—Insights from theories of change and leadership 3.4.1/7—Changing climate inequity and injustice 3.4.2/1—ESD competency framework (Collaboration competency)
Skills	1	Can build diverse coalitions to address wicked problems related to sustainability.		
	2	Can create transparent, inclusive, and community-driven processes.		
	3	Can create opportunities for joint action across communities, sectors, and regions.		
	4	Can work collectively in sustainability change processes.		
	5	Can identify stakeholders' strengths.	3.2.2—Business, Industry, & Microeconomic Considerations	3.2.2/4—Corporate Social Responsibility (CSR) 3.2.2/7—Multistakeholder governance
	6	Can act in line with shared narratives on sustainable futures.		
Attitudes	1	Is willing to engage with others to challenge the status quo.		
	2	Is motivated to collaborate in order to shape inclusive sustainable futures.		
	3	Prioritizes sustainability values and interests when taking collective action.		
	4	Wants to give back to the community and nature.		
	5	Is committed to change for a more inclusive and fair future.		

Table 4.3 — Acting for sustainability—Individual Initiative

EU GreenComp			Sulitest TASK	
Acting for sustainability			**Primary TASK Framework & Domains**	**Primary TASK Subjects**
4.3 **Individual initiative**		To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet	3. Levers of Opportunity 3.1. Governance 3.2. Economy and Finance 3.4. Individual and Collective Action	3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability
KSA		**Statements**	**TASK Subjects**	**TASK NavChart/Topics** (and bullet point examples)
Knowledge	1	Knows one's own potential to bring about positive environmental change.	2.3.1—Education & Culture 3.4.1—Transformative Change	2.3.1/7—Education for Sustainability 3.4.1/1—Change: Attributes, principles, mechanisms, agents
	2	Knows that preventive action should be taken when certain action or inaction may damage human health and all life forms (precautionary principle).	1.1.1—Climate Change 1.2.4—Novel Entities 1.2.6—Atmospheric Aerosols Loading 3.3.1—Sustainability Science	1.1.1./7—Climate change prevention 1.2.4/12—Importance of Precautionary Principle 1.2.6/4—Air pollution prevention, monitoring, and levels 3.3.1/6—Climate science 3.3.1/7—Ecology and biology
	3	Knows that individuals have a commitment towards society and the environment.	3.4.1—Transformative Change	3.4.1/1—Change: attributes, principles, mechanisms, agents
	4	Knows that maintaining the status quo and inaction are also choices.	3.4.1—Transformative Change	3.4.1/1—Change: attributes, principles, mechanisms, agents 3.4.1/9—Changing social imaginaries of how we might live sustainably
	5	Knows that every action has an impact even if not immediate.	3.4.1—Transformative Change	3.4.1/1—Change: attributes, principles, mechanisms, agents 3.4.1/10—Climate activism for transformational change
Skills	1	Can apply the following principles: using fewer resources, doing better with fewer resources, and reusing the same resources.	3.1.2—Infrastructure, Planning & Natural Resource Mnagem't 3.4.1—Transformative Change	3.1.2/12—Reuse 3.4.1/8—Changing high-carbon lifestyles
	2	Can take personal initiative and persist in achieving sustainability objectives even in contexts of uncertainty.		
	3	Can act promptly, even in the face of uncertainty and unforeseen events, keeping in mind the precautionary principle.		
	4	Can mobilize others to adopt more sustainable choices.		
	5	Can overcome one's own resistance to change.		
	6	Can identify a network of relevant stakeholders.	3.2.2—Business, Industry, & Microeconomic Considerations	3.2.2/4—Corporate Social Responsibility (CSR) 3.2.2/7—Multistakeholder governance
Attitudes	1	Cares proactively for the planet.		
	2	Is willing to take action to try to solve complex sustainability problems.		
	3	Advocates for individual and collective care for those in need and for the planet.		
	4	Is confident about anticipating and influencing sustainable changes.		
	5	Recognizes that everyday action matters.	3.3.1—Sustainability Science 3.4.1—Transformative Change 3.4.2—Cognitive Capacity for Sustainability	3.3.1/2—Scientific research (Action-oriented research) 3.4.1/8—Changing high-carbon lifestyles 3.4.2—GreenComp: Acting for sustainability

Annex 1 - Overview of GreenComp

(European Commission—JRC Science for Policy Report)

GreenComp — The European Sustainability Competence Framework

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Introduction

GreenComp comprises four interrelated competence areas, each of which comprises three competences that are interlinked and equally important.

1. *Embodying sustainability values* (Valuing sustainability, Supporting fairness, Promoting nature)
2. *Embracing complexity in sustainability* (Systems thinking, Critical Thinking, Problem framing)
3. *Envisioning sustainable futures* (Futures literacy, Adaptability, Exploratory thinking)
4. *Acting for sustainability* (Political agency, Collective action, Individual initiative)

European Commission Recommendations

- The development of a European sustainability competence framework is one of the policy actions set out in the European Green Deal as a catalyst to promote learning on environmental sustainability in the European Union.
- The European Commission has made learning for environmental sustainability a priority for the upcoming years.
- The Commission encourages Member States to use it as a reference when rolling out educational initiatives on sustainability.
- [In November of 2023, the French Ministry of Education recommended the use of GreenComp as the national reference for articulating, developing, and assessing basic student competencies in sustainability]
- GreenComp builds on the method developed, tested, and validated by the JRC to create the Digital Competence Framework for Citizens (DigComp), the Entrepreneurship Competence Framework (Entre-Comp), and the European Framework for Personal, Social and Learning to Learn Key Competence (Life-Comp).
- The Council recommendation on learning for environmental sustainability and GreenComp are part of EU's strategic action to promote learning for environmental sustainability.
- As a reference tool, GreenComp can serve a range of purposes, including curricula review; design of teacher education programs; (self-) assessment/reflection, policy development, certification, assessment, monitoring & evaluation.

Key Definitions

Competence — "a dynamic combination of the knowledge, skills, and attitudes" (Adopted from the definition of competence following the 2018 Council Recommendation on Key Competences for lifelong learning (p.12).

Sustainability — prioritizing the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries.

A sustainability competence empowers learners to embody sustainability values, and embrace complex systems, in order to take or request action that restores and maintains ecosystem health and enhances justice, generating visions for sustainable futures. This definition focuses on developing sustainability knowledge, skills, and attitudes for learners so they can think, plan and act with sustainability in mind, to live in tune with the planet.

Knowledge — the body of facts, principles, theories, and practices that is related to a field of work or study. Knowledge is the outcome of the assimilation of theoretical or factual information by learning.

Skills — the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills can be cognitive (involving the use of logical, intuitive, and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools, and instruments).

Attitudes — Attitudes are motivators of performance. They include values, aspirations and priorities.

Limitations of GreenComp

1. Although widely endorsed by subject-matter experts and representatives of different stakeholder groups, the GreenComp framework has not yet been tested in a real setting. Putting GreenComp into practice, by rolling it out and evaluating it in a specific context, could and should lead to amending and refining it based on feedback from practitioners and end users. The framework should thus be treated as a living document.
2. Due to the vast and rapidly evolving nature of the sustainability concept, this framework depicts competences necessary for sustainability as an overarching topic. Therefore, subfields are not directly addressed in this context. Some examples of these competences include but are not limited to, responsible production and consumption, competences for the circular economy, or competences for specific education levels. Future developments in these directions can very well be envisaged based on GreenComp.
3. Learning for environmental sustainability is essential to achieve a sustainability mindset and trigger the willingness to act for a sustainable future. However, education and training, including this competence framework, only form part of the puzzle. Systemic change towards sustainability is a global necessity and a shared responsibility. Investments in research and innovation, laws and regulations, technological eco-innovations, transparency and accountability by companies and global value chains are required to achieve a comprehensive change. Individual behavior should be supported by enabling measures and contexts that are all designed by, with, and for the people and the planet.

Conceptual foundations of GreenComp

- Brundtland Report, 1987.
- Planetary Boundaries Framework, Steffen et al, 2015
- UN Sustainable Development Goals

Stakeholder uses of GreenComp

Assessment and certification services could generate new certificates that acknowledge the competences described in GreenComp.

Possible uses of GreenComp

- Raising awareness about the importance of learning for environmental sustainability
- Designing learning opportunities aimed at developing sustainability competences
- Assessing where one stands in supporting learners to develop sustainability skills

Annex 2 - GreenComp / TASK Alignment Heatmap *(Detailed version)*

Indicating Alignment Between GreenComp Learning Outcome Statements and Corresponding TASK Subject Knowledge

		GreenComp ↓	TASK ↓	GreenComp ↓	TASK ↓	GreenComp ↓	TASK ↓	GreenComp ↓	TASK ↓	GreenComp ↓	TASK ↓	GreenComp ↓	TASK ↓	
1	Area →	**1. Embodying sustainability values**						**2. Embracing complexity in sustainability**						← Area
2	Competence →	1.1—Valuing sustainability		1.2—Supporting fairness		1.3—Promoting nature		2.1—Systems thinking		2.2—Critical thinking		2.3—Problem framing		← Competence
3	**Knowledge**	6 LO statements	6 Aligned subject areas	4	4	6	6	5	5	5	5	5	5	**Knowledge**
4	**Skills**	5 LO statements	4 Aligned subject areas	4	3	5	3	5	5	5	5	5	5	**Skills**
5	**Attitudes**	4 LO statements	1 Aligned subject areas	3	0	5	2	5	2	5	3	4	2	**Attitudes**
6	**Attitudes**	4	3	5	1	4	1	4	0	5	0	5	1	**Attitudes**
7	**Skills**	4	4	4	3	5	2	4	3	6	1	6	2	**Skills**
8	**Knowledge**	5	5	5	5	4	4	4	4	4	4	5	5	**Knowledge**
9	Competence →	3.1—Futures literacy		3.2—Adaptability		3.3—Exploratory thinking		4.1—Political Agency		4.2—Collective action		4.3—Individual initiative		← Competence
10	Area →	**3. Envisioning sustainable futures**						**4. Acting for sustainability**						← Area
		↑ GreenComp	↑ TASK	↑ GreenComp	↑ TASK	↑ GreenComp	↑ TASK	↑ GreenComp	↑ TASK	↑ GreenComp	↑ TASK	↑ GreenComp	↑ TASK	

Alignment Heat Map Legend	**Total** 100%	**High** 75-80%	**Medium** 50-60%	**Partial** 25-40%	**Low** 15-20%	**None**
# of KSA Categories	16/36	5/36	3/36	6/36	3/36	3/36

Annex 3 - Theoretical Approaches to Holistic Human Development

Numerous theories of human development take an integrated and holistic approach to this concept of developing human agency by identifying three distinct yet interconnected developmental domains, namely, thinking, feeling, and relating. As the chart below indicates, authors use various terms to describe these domains. Given its logical applicability to the challenge of educating for sustainability development which requires knowledge of Earth systems, attitudes and values for preserving it, and corresponding skills and behaviors to achieve such ends, the utility and simplicity of this "trinity" of developmental domains has been widely adopted by scholars seeking to identify competencies specifically related to sustainability.

Theme	***Thinking***	***Feeling***	***Relating***	***Author(s)***
Self-Authorship	Cognitive	Intrapersonal	Interpersonal	R. Kegan (1994)
Intercultural Communication Competence	Cognitive/ Awareness	Affective/ Sensitivity	Behavior/ Adroitness	Chen & Storosta (1994)
Faith Development	Forms of Knowing	Forms of Dependence	Forms of Community	Parks (2000)
Self-Authorship	Beliefs	Identity	Social relations	Baxter-Magolda (2001)
Individual Diversity Development	Cognitive	Affective	Behavior	Chavez, Guido-DiBrito, & Mallory (2003)
Intercultural Maturity	Cognitive	Intrapersonal	Interpersonal	King & Baxter-Magolda (2005)
Holistic Well-being	Mind	Spirit	Body	Lee (2009)
Key competencies	Knowledge	Attitudes	Skills	Wiek et al (2011)
Holistic Human Development	How do I know?	Who am I?	How do I relate to others?	Braskamp & Braskamp, 2012
Key competencies	Cognitive Knowledge	Affective / Capacities	Behavioral / Volitional / Motivational	Rieckmann (2012)
Sustainability literacy	**Knowledge**	**Mindset**	**Skills**	**Sulitest, 2014, HLPF (2023)**
Sustainability competence	Knowing	Being	Doing	Wals, 2015
Sustainability competency	Cognitive domain	Socio-emotional domain	Behavioral domain	UNESCO, 2017
Sustainability competence	Knowledge	Attitudes	Skills	Bianchi (2020)
Sustainability competence	**Knowledge**	**Attitudes**	**Skills**	**Bianchi, et al. (2022) GreenComp**
Sustainability competence	Knowledge (head)	Emotions (heart)	Action (hand)	UN SDG Learn, 2023

Chart adapted from Braskamp and Braskamp, 2012.

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