EDUCATING
FOR THE FUTURE

Integrating Home Economics and STEAM in Europe

SHAREE

A SHAREE PROJECT OUTCOME

SHAREE

SHAREE Project Team

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Part A

FROM AN IDEA
TO IMPLEMENTATION

Supporting the Integration of Home Economics and STEAM Education

1 Home Economics as a Future-Oriented Subject in the EU

⟶ What is Home Economics education?

Home Economics education aims to **prepare learners for healthy, sustainable and responsible living** by integrating knowledge, problem-solving and practical skills related to everyday life as stated in the International Federation for Home Economics Position Statement (International Federation of Home Economics (IFHE), 2008). As a discipline, Home Economics draws on the social, physical and human sciences to contextualise and apply learning to real-life situations concerning food and nutrition, health and well-being, sustainable consumption, household resource management, textiles and clothing, everyday technologies, family life and interactions with the community. Central to Home Economics is the development of learners' capacity to **act responsibly in everyday life**, recognising the interdependence between individuals, families, societies and the environment (Maguire & McCloat, 2017).

These aims align with contemporary competence frameworks, which define competence as the mobilisation of knowledge, skills, attitudes and values in real-world contexts, as well as emphasise 21st-century skills, such as collaboration, communication, creativity and critical thinking. The latter are essential for lifelong learning and societal participation as stated in OECD Learning Compass 2030 (Organisation for Economic Co-operation and Development (OECD), 2021; European Commission, Joint Research Centre, 2020). Home Economics education contributes to the development of these competencies through learners' engagement in decision-making, problem-solving, collaborative work and reflective practices situated in everyday life contexts (Maguire & McCloat, 2017).

Figure 1. The key elements of Home Economics as a future-oriented subject preparing for healthy, sustainable, and responsible living

Where in Europe is Home Economics being taught?

Home Economics or equivalent subjects are present in the educational systems of 24 European countries under different names and curriculum structures (Nõmmik et al., 2025) (Figure 2). In addition, several Home Economics topics are included under other school subjects. According to Nõmmik et al. (2025), in all of the 24 EU countries, Home Economics education engages students in food-related decision-making, resource management and reflections on health and sustainability impacts. Thus, by addressing broad life situations, including budgeting, responsible consumption, engaging in the development of practical food skills and consciously considering the environmental and social impacts of everyday choices, these practices foster judicious judgement and responsibility required for managing everyday life.

The abovementioned themes are closely **connected to learners' daily lives** and provide structured opportunities to **apply knowledge from the fields of science, social studies and economics** in various practical situations.

HOME ECONOMICS IN EUROPE

INDEPENDENT COMPULSORY SUBJECT

Denmark
Finland
Greece
Malta
North Macedonia
Norway
Slovenia
Sweden
Switzerland

COMBINED COMPULSORY SUBJECT

Belarus
Bulgaria
Estonia
Hungary
Iceland
Latvia
Liechtenstein
Lithuania
Moldova
Romania
Ukraine
United Kingdom

NO HOME ECONOMICS

Albania
Andorra
Belgium
Bosnia and Herzegovina
Croatia
Czechia
France
Italy
Kosovo
Luxembourg
Monaco
Montenegro
Netherlands
Poland
Portugal
San Marino
Serbia
Slovakia
Spain
Vatican City

LIMITED COMPULSORY SUBJECT

Austria
Germany
Ireland

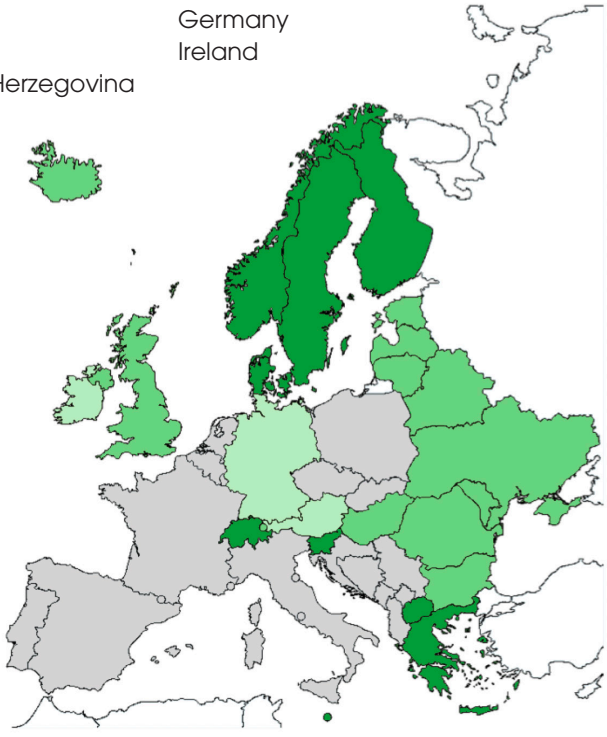

Figure 2. Home Economics in the European curricula (Nõmmik et al., 2025, pp. 3–4).

2 Home Economics as a Practical Context for STEAM Education

→ What is STEAM education?

STEAM education is an interdisciplinary educational approach that integrates Science, Technology, Engineering, Arts and Mathematics through problem-based, enquiry-oriented learning. STEAM emphasises learning processes that connect multiple disciplines, promote creativity and engage learners in solving real-world problems through collaboration and experimentation (Christopoulos et al., 2022). STEAM learning is effective when learners actively construct knowledge by applying scientific and technological understanding in meaningful contexts rather than undergoing isolated subject instruction. Research highlights that **STEAM learning benefits from everyday life contexts that allow learners to explore scientific and technological concepts through practical decision-making and problem-solving** (McGregor, 2019).

Home Economics provides such an everyday life context. According to the IFHE Position Statement (IFHE, 2025), Home Economics contributes to STEAM education by offering authentic, real-life, everyday situations where scientific and technological knowledge can be practically applied and examined (Figure 4). The IFHE (2025) explicitly states that Home Economics supports systems thinking, ethical reasoning and sustainability-oriented learning, all of which are central to advancing STEAM education (Christopoulos et al., 2022) and the Sustainable Development Goals (United Nations, n.d.) as one of the EU priorities.

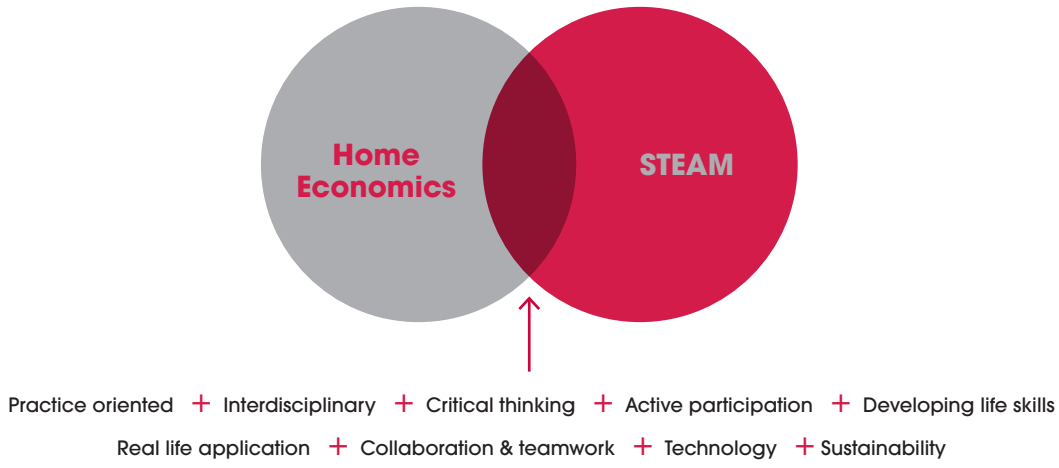

Figure 3. Pedagogical elements of STEAM and Home Economics integration.

Supporting learning through the integration of Home Economics and STEAM education

From a policy perspective, international (OECD, 2021) and European frameworks (e.g. Council Recommendation on Key Competences for Lifelong Learning; European Union, 2018) emphasise competence-based learning that integrates knowledge, skills and attitudes and supports learning that is applicable across life contexts. Furthermore, curriculum integration has also been identified as a response to curriculum overload, helping **strengthen the coherence and transferability of learning rather than adding content** (OECD, 2020). Thus, in this context, Home Economics does not add to STEAM education. As seen from Figure 3, STEAM and Home Economics share the core pedagogical elements. Therefore, Home Economics strengthens STEAM, serving as a real-life bridge that enhances relevance, learner engagement and the application of STEAM learning in everyday life.

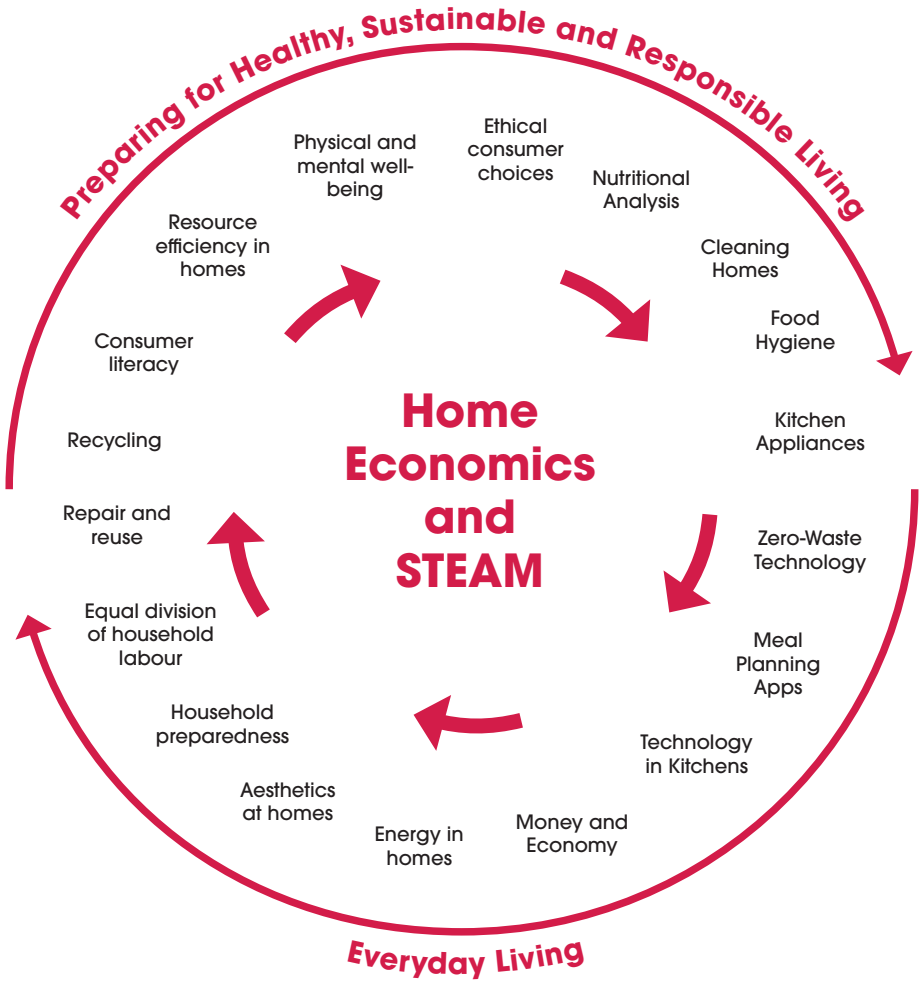

Figure 4. Examples of STEAM and Home Economics integration.

Makerspace as a learning environment for integrative learning

Integrating Home Economics and STEAM education calls for comprehending the idea of a 'makerspace' as a learning environment. **In makerspace, students create, analyse, observe and experiment** with different tools and are not restricted to only one subject's tools. In this regard, a Home Economics classroom, depending on the learning activity, can act as a makerspace. For instance, it can function as a lab when exploring the chemical reactions of cooking or as a place for practical experimenting when testing and analysing ways to use energy at home.

Even a trip to the woods turns the area into a makerspace when students create objects using natural materials and gain knowledge about the process and environment. Makerspaces promote creativity and learning through doing. Each place where objects or experiences can be created can be a makerspace (Paas et al., 2025, pp. 25–26).

EXAMPLE: STEAMKITCHEN (2024-2026)

Bridging Home Economics-STEAM through food education in Estonia

The Science Kitchen at Tallinn University's School of Natural Sciences and Health is an innovative environment that connects scientific knowledge with practical food-related activities. By treating food preparation as a scientific process, it demonstrates how Home Economics can integrate with STEAM learning to **support competence-based education**, in alignment with the Council Recommendation on Key Competences for Lifelong Learning (European Union (EU), 2018).

Science Kitchen offers enquiry-based practical learning environments for researchers, students and educators, helping learners understand physical, chemical and biological processes related to food while promoting sustainable everyday practices. This supports European strategies for sustainability and responsible consumption, e.g. the European Green Deal (European Commission (EC), 2019; Bianchi et al., 2022).

Therefore, functioning as a makerspace, the **Science Kitchen enables problem-based STEAM experiments that encourage observation, critical thinking and collaboration.** Furthermore, by combining classroom, kitchen and laboratory tools, it fosters innovative teaching and the development of digital and scientific competencies in line with EU policy priorities, such as Digital Education Action Plan 2021–2027 (EC, 2020a).

Read more: https://www.tlu.ee/en/teaduskook

Recommendations for the Education Sector 3

1 How Policymakers can Further Integrate Home Economics and STEAM Education

Enabling integration through policy alignment, not curriculum expansion

Policymakers play a decisive role in **creating the conditions for the meaningful integration** of Home Economics and STEAM. Rather than introducing new subjects or increasing curriculum load, implementation should **focus on policy coherence, flexibility and recognition of everyday-life contexts as valid learning environments.**

At the level of national education systems, Home Economics education should be explicitly recognised as a contextual platform for competence-based and interdisciplinary learning, particularly for strongly embedded elements, such as sustainability, household management, technical and digital competence, family life, citizenship, nutrition and health and well-being. This can be achieved by aligning Home Economics learning outcomes with existing national and European competence frameworks and STEAM strategies, thus ensuring consistency across curriculum, assessment and teacher education.

Proposed actions include the following:

- → **Ensure curriculum flexibility** to allow schools on all levels to integrate Home Economics and STEAM through thematic, project-based and interdisciplinary learning.
- → **Support access to makerspaces** as learning environments where creativity meets practical and analytical experimenting by supporting the development of or ensuring access to appropriate learning environments (school kitchens, labs and STEAM centres).
- → **Encourage cross-sector collaboration in the community** (education, health, sustainability and civil protection) to reinforce relevance and impact.
- → **Fund participation in innovation programmes** (e.g. Erasmus+ and national pilots) to scale good practices.

Clear policy signals that value everyday competencies, sustainability and applied learning, help strengthen system readiness and ensure that the integration of **Home Economics and STEAM contributes directly to long-term societal goals** rather than remain isolated innovation.

2 How School Leaders can Promote Home Economics and STEAM Education

Build a school culture that values collaboration among teachers and within the school community

School leaders are central to **translating policy frameworks into everyday school practice.** Thus, successful Home Economics–STEAM integration depends less on structural reform and more on local leadership that enables collaboration, experimentation and shared ownership.

Proposed actions include the following:

- → **Encourage team teaching and collaborative planning** between Home Economics and STEAM teachers by creating timetabling and organisational solutions that support interdisciplinary Home Economics–STEAM projects.
- → **Invest strategically in learning environments to create makerspaces** where Home Economics classrooms, science labs and digital tools are connected and accessible for practical enquiry-based activities.
- → **Embed ethical discussions** on care, shared responsibility, gender and community resilience into school cultures.
- → **Position Home Economics–STEAM integration within broader school development goals** related to sustainability, well-being and inclusion.
- → **Foster external partnerships** with local communities, universities, STEAM centres and civil society organisations.

Importantly, leaders should **legitimise integrated practices as core learning** rather than as 'extra activities'. When Home Economics is positioned as a shared resource for applied learning, schools strengthen learner engagement, curriculum coherence and relevance without increasing teachers' workload.

3 How Teachers can Further Integrate Home Economics and STEAM Education in Practice

Design learning around real-life problems to build active citizenship, well-being and strong communities.

Active citizenship grows from everyday capabilities. When learners engage with real-life tasks, they not only build personal skills but also a foundation for shared responsibility, sustainable choices and community well-being

Teachers play a key role in **connecting learning to students' lives.** Home Economics–STEAM integration becomes meaningful when learners are allowed to explore familiar issues, such as food, energy, consumption, health and local technologies, and use scientific and creative thinking to understand their impact in their own communities.

Proposed actions include the following:

- → **Cocreate interdisciplinary learning tasks across Home Economics–STEAM** around real-world themes, such as food security, sustainable consumption and circular economy. This approach positions everyday contexts as a space for valid scientific enquiries and encourages collaboration with professional colleagues.

- → **Anchor learning in community contexts** by designing lessons/modules through which students examine local and community-level challenges, making everyday environments meaningful sites for HE–STEAM enquiries and strengthening active citizenship.

- → **Use problem- and enquiry-based learning** to engage students in exploring relevant phenomena and testing solutions for every life that combine practical and scientific reasoning, while simultaneously strengthening decision-making, critical thinking, collaboration and reflection, rather than focusing solely on technical skills.

- → **Integrate digital tools meaningfully,** such as through data collection, modelling and evaluation of information.

- → **Support and assess the learning processes and the outcomes** through planning, experimentation, justification and reflection.

Notably, teachers do not need to become experts in all STEAM disciplines. Instead, combining STEAM with Home Economics education provides a familiar, inclusive context **where learners can apply and connect knowledge from various subjects, develop confidence and see the relevance of learning in their own lives and communities.**

4 How Teacher Education can Support Home Economics–STEAM Integration

Empower future classroom practices by bringing subject integration into teacher education

Teacher educators play a key role in shaping how future teachers understand and implement the integration of Home Economics and STEAM education. As a bridge between policy, research and practice, they influence how interdisciplinary learning is interpreted, valued and enacted in schools.

Effective integration depends on teachers who can design real-life, enquiry-based learning and connect knowledge across disciplines. Therefore, **teacher education should actively enable Home Economics–STEAM integration during pre-service education**, positioning Home Economics as a meaningful context for interdisciplinary learning.

Proposed actions include the following:

- **Create opportunities for Home Economics–STEAM integration in teacher education** curricula through interdisciplinary modules, joint courses or thematic approaches that connect everyday life contexts with scientific and technological learning.
- **Model enquiry-based and practice-oriented pedagogies** in teacher education programmes, allowing students to experience integration as learners before applying it in classrooms.
- **Foster collaboration across subject-specific teacher education** to break down disciplinary boundaries and promote shared pedagogical understanding.
- **Support Home Economics-STEAM integration during teaching practice** to provide opportunities to design, implement, and reflect on the integration during pre-service education.
- **Provide continuous professional development opportunities** for in-service teachers that build capacity for Home Economics–STEAM integration, including mentoring, networks and collaborative learning communities.

Importantly, integration should be presented as a way to enhance coherence and relevance in teaching, not as an additional demand. **When both pre-service and in-service teachers experience integrative approaches as meaningful and feasible, they are more likely to implement them in practice**, supporting the long-term development of Home Economics–STEAM education.

EXAMPLE: STEAM EDUCATION STRENGTHENING PLAN 2023-2030

Systemic implementation of STEAM through practice-oriented education in Lithuania

Lithuania offers a strong European example of systemic STEAM integration to address structural challenges in education. National analyses (Republic of Lithuania, 2023a) have identified insufficient practical activities in competence-based general education and highlighted the need for cross-disciplinary learning that supports real-world application. This aligns with UNESCO's call Futures of education: Learning to become (United Nations Educational, Scientific and Cultural Organization (UNESCO), 2019) to develop competencies that transcend disciplinary boundaries and prepare learners for complex societal challenges.

In response, Lithuania adopted the STEAM Education Strengthening Plan 2023–2030 (Republic of Lithuania, 2023b), establishing STEAM as a strategic priority. The plan promotes practical and experimental learning, creativity, enquiry and equal access to STEAM activities, with real-world project-based learning as a central pedagogical approach. At the curriculum level, **STEAM has been developed as a priority pathway in secondary education**, supported by the National Agency for Education. In particular, schools must allocate at least 30% of their curriculum time to experimental and practical activities, either in school laboratories or in cooperation with open-access STEAM centres. **The Lithuanian STEAM School Network** (National Agency for Education, n.d.) **further supports the strengthening of partnerships and teacher collaborations, as well as the sharing of good practices**, including STEAM lessons and projects related to food education.

Home Economics-related learning in the Lithuanian curriculum is positioned within the field of Technology (Education Portal, n.d.) in which STEAM is defined as the practical application, experimentation and modelling of scientific, mathematical, economic, artistic, design and engineering knowledge through creative technological processes. This framework demonstrates how food, household practices and everyday life contexts serve as powerful platforms for STEAM learning, thus strengthening learners' competence development through meaningful, practical experiences.

Part B

FROM EU STRATEGIES
TO CLASSROOMS

Integrating Home Economics and STEAM Education in the EU Context

1 What is the EU Policy Context?

→ Which European strategies are relevant for supporting Home Economics–STEAM integration?

EU strategies emphasise societal resilience, security and sustainable development, providing a strong foundation for integrating Home Economics and STEAM education. The European Education Area (EC, 2022), the Council Recommendation on Key Competences for Lifelong Learning (EU, 2018) and the European Green Deal (EC, 2019) all highlight the need for future-oriented skills, sustainability competencies and active citizenship.

Recent EU policies further support these objectives. As a central pillar of the European Green Deal, the Farm to Fork (F2F) Strategy (EU, 2020) further reinforces this agenda by promoting sustainable food systems, responsible consumption and informed decision-making, all of which align closely with Home Economics and STEAM education and their focus on everyday food practices and well-being (EC, 2019). In addition, The Action Plan on Nutrition: Eight Progress Report (EC, 2024a) raises global topics and discusses the global challenges of securing adequate nutritional status to all children.

The Circular Economy Action Plan (EC, 2020b) promotes an understanding of sustainable consumption and material use. The European Commission's Digital Education Action Plan 2021–2027 (EC, 2020a) further supports this integrative approach by promoting high-quality, inclusive and accessible digital education. Specifically, the plan emphasises the promotion of digital skills, teacher support and resilient digital learning ecosystems, strengthening the foundations for Home Economics–STEAM integration. At the same time, the European Internal Security Strategy (EC, 2025b) strengthens the whole-of-society approach to promoting resilience against hybrid threats and security risks, while the European Preparedness Union Strategy (EC, 2025a) emphasises public risk awareness, household-level preparedness and the role of education in building readiness. Furthermore, the European Parliament's Gender Equality Strategy 2025 (Lecerf, 2025) supports equal participation across the education and skills domains, including STEM and everyday competencies.

Together, these policies provide a coherent EU-level basis for integrating Home Economics and STEAM to advance resilience, sustainability and equality in Europe (Figure 5). In the following section, five education-related topics that support the integrative approach of Home Economics and STEAM, with a core in EU policy, are explored in more detail.

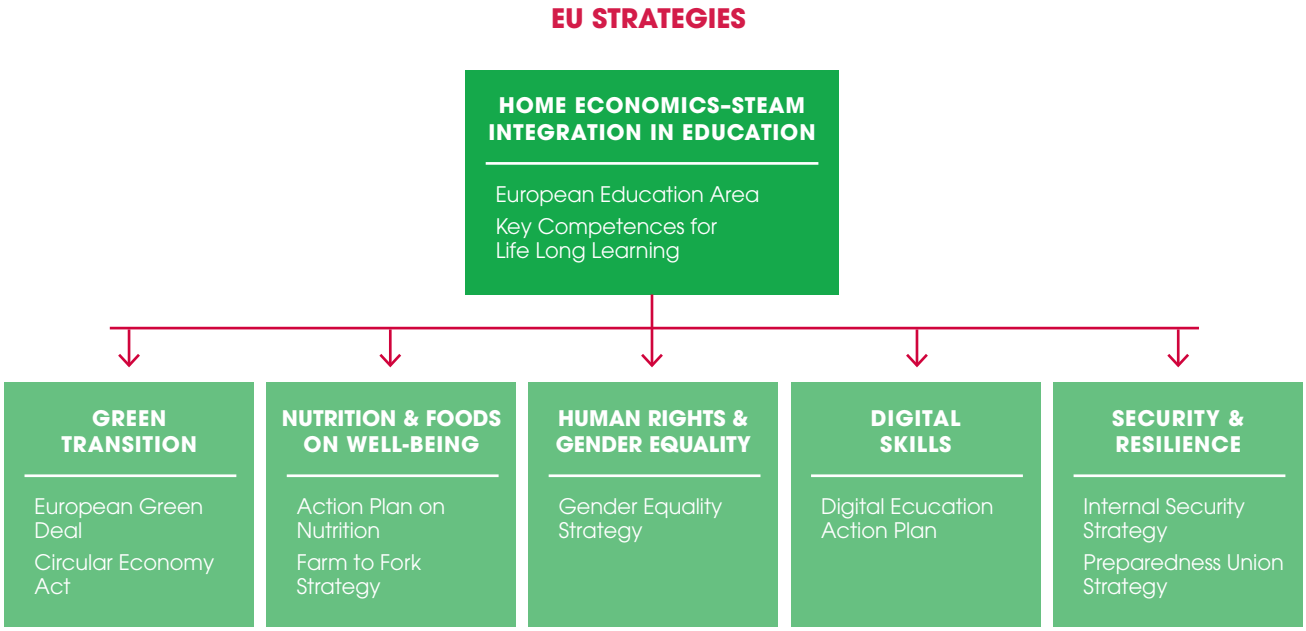

Figure 5. Integrating Home Economics and STEAM subjects to advance the implementation of various EU strategies.

The EU Policy Context

The European Education Area
→ https://data.europa.eu/doi/10.2766/059480
The Key Competence for Lifelong Learning
→ https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&utm_source=chatgpt.com
The GreenComp
→ https://publications.jrc.ec.europa.eu/repository/handle/JRC128040
The European Green Deal
→ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52019DC0640
The Circular Economy Act
→ https://environment.ec.europa.eu/strategy/circular-economy_en
The Farm to Fork Strategy
→ https://data.consilium.europa.eu/doc/document/ST-12099-2020-INIT/en/pdf
The Gender Equality Strategy 2025
→ https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en
The Digital Education Action Plan 2021–2027
→ https://education.ec.europa.eu/sites/default/files/document-library-docs/deap-communication-sept2020_en.pdf
The European Internal Security Strategy 2025
→ https://commission.europa.eu/news-and-media/news/commission-presents-european-internal-security-strategy-2025-04-01_en
The European Preparedness Union Strategy 2025
→ https://commission.europa.eu/topics/preparedness_en

2 Green Transition Starts from Each Home

GREEN TRANSITION

European Green Deal

Circular Economy Act

How can we support green skills for European citizens with Home Economics–STEAM integration?

The EU highlights the urgency of shifting to a circular economy. Relevant policies such as the Key Competences for Lifelong Learning (EU, 2018) and the Circular Economy Action Plan (EC, 2020b) emphasise sustainability skills, citizen competence and reduced resource use. Europe aims to double its circularity rate by 2030 by promoting maintenance, reuse, repair, recycling and other practices that keep materials in circulation.

Developments related to circular economies are reshaping how households are supported. Related to this, consumer literacy is expanding to include digital product passports, material disclosure, repair and reuse skills and the correct sorting of e-waste and batteries to prevent material leakage. Furthermore, household guidance has increasingly focused on budgeting for service- and repair-based models instead of frequent replacements. For example, Maguire and Fahy (2022; 2023) discuss how everyday clothing practices, such as wearing, caring for and repairing garments, can support a circular economy by extending product life, thus reducing waste. In turn, this fosters sustainable consumption habits, all of which can be incorporated into Home Economics education.

The role of consumer literacy in building a sustainable future

Consumer literacy is central to global citizenship, as everyday purchasing choices are connected to global production chains, resource extraction, labour conditions and envi-

ronmental impacts. This creates strong opportunities for Home Economics–STEAM integration through applied learning. **Education for sustainable development can significantly enhance students' critical thinking, global awareness and capacity for responsible decision-making** (O'Flaherty & Liddy, 2017). Furthermore, recent research with higher education students further shows that project-based sustainability education enhances problem-solving, critical thinking and innovation skills when applied to real-world challenges (O'Toole et al., 2026). For example, students can use sensor data and simple experiments to compare the energy and water usage of household routines and even use mathematics to model life-cycle costs, model carbon footprints, or examine supply-chain transparency from an ethical perspective. Circular economy concepts, such as redesigning a lunch system to reduce food waste, prototyping packaging alternatives or testing circular solutions enabled by digital tools, translate naturally into STEAM design challenges.

The green transition starts from homes. When equipped with interdisciplinary skills, individuals can become active and responsible global citizens able to make informed decisions that support fair, sustainable and equitable systems both locally and globally, thus supporting EU strategies.

⟶ Education to tackle greenwashing?

Greenwashing undermines EU goals for transparency, sustainability and consumer protection. To avoid this, recent EU regulations require environmental claims to be clear, verifiable and evidence-based (Green Claims; EC, 2026). **Integrating Home Economics and STEAM education provides a strong opportunity to evaluate such claims holistically and critically.** Consumers, particularly students, often struggle to distinguish between credible and misleading environmental claims (Delmas & Burbano, 2011). This problem, therefore, highlights the need for explicit education in critical evaluation and evidence-based reasoning.

Through scientific experimentation, data analysis and problem-solving in real-life contexts, students can evaluate and test environmental claims by, for example, comparing materials, analysing product life-cycles or assessing the environmental impacts of different packaging solutions by evaluating durability, coatings and recyclability. Placing these investigations within everyday life contexts makes them relevant to students. Moreover, this **integration builds critical consumer literacy** and supports the EU's aims by enabling learners to identify misleading claims and make informed, responsible decisions based on evidence rather than marketing.

EXAMPLE: THE GREEN SKILLS PROGRAMME (2023-2026)

Promoting sustainability competence in Estonia

Estonia's Green Skills Programme 2023–2026 (Ministry of Education and Research, 2026) promotes sustainability competencies that are integrated into curricula and learning modules, rather than added as a separate theme. Led by the Estonian Education and Youth Board and the Ministry of Education and Research, it connects curriculum renewal with continuing education and micro-credentials, while simultaneously updating learners' professional standards and skills profiles. With a €15 million budget and a goal to train at least 2,830 people (including teachers), the programme also enhances capacity for Home Economics–STEAM integration.

Specifically, this programme presents **green skills as a mix of knowledge, skills, values and attitudes necessary for a resource-efficient society**, linking practices (e.g. food, textiles, household energy and consumption) to systems thinking and innovation. The concept paper on 'horizontal green competencies' considers sustainability from environmental, economic and social perspectives, **emphasising interdisciplinary pedagogy and community partnership**. It follows the GreenComp – The European Sustainability Competence Framework (Bianchi et al., 2022).

A transferable mechanism is the programme's outcome-based competency framework. The learning outcomes document organises horizontal competencies into three thematic areas: business/management, environmental management and (enterprise) social responsibility, along with other general competencies, and provides sample outcomes across qualification levels. This design facilitates curricular progression from practical problem-solving (e.g. reducing food waste in a school canteen) to data-informed decision-making and prototyping (e.g. assessing a product/service life-cycle, selecting sustainability indicators, or designing circular textile solutions).

The Impact of Nutrition and Foods on Well-Being 3

NUTRITION & FOODS ON WELL-BEING

Action Plan on Nutrition

Farm to Fork Strategy

How can learners be empowered to make evidence-based food choices?

Home Economics education is a key vehicle for translating nutrition science into everyday transferable practices that can positively impact physical and mental well-being. Within the context of an integrated Home Economics–STEAM approach, scientific knowledge from cross-curricular links of biology, chemistry and health education is applied through practical, everyday family contexts in Home Economics, such as food preparation, meal planning and evaluation of sustainable dietary choices across the life course.

Home Economics empowers learners to connect abstract nutritional concepts, including nutrition, portion control, sustainable consumption and dietary guidelines to real-life situations that are applicable to individuals, families and communities (IFHE, 2019). In this way, learners develop food, health and consumer literacy by engaging in practical enquiry-based activities. This, in turn, **supports EU public health priorities focused on prevention, well-being and reduced health inequalities.** Therefore, Home Economics–STEAM integration acts as a key driver in empowering learners to make evidence-based, sustainable and nutritionally sound decisions.

Building on this, the EU's Farm to Fork strategy (EU, 2020) provides a broad policy framework that situates these everyday food decisions within sustainable, ethical and health-promoting food systems. The Farm to Fork strategy, a central component of the European Green Deal, aims to transform food systems to be healthier, more sustainable and more equitable (EU, 2020). This strategy also promotes improved public health by supporting access to safe, nutritious and affordable food, introducing clearer nutrition labelling and reducing the availability of foods high in sugar, salt and unhealthy fats, alongside current 2030 targets for organic farming, pesticide reduction and antimicrobial use (Dupuits, Money & McCloat, 2024).

How can scientific explanations be merged with practical everyday decisions?

Home Economics can empower individuals, families and communities by providing an everyday, consumer-focused context in which sustainable food choices can be understood, evaluated and put into practice.

Through an integrated Home Economics–STEAM context, sustainability concepts can be explored scientifically and applied practically in relevant settings. Learners can use Home Economics concepts to examine and support how daily decisions, including food purchasing, preparation methods, portioning and waste management, can affect personal health and environmental sustainability. This approach not only **aligns with EU goals for sustainable development and public health but also positions Home Economics as a bridge between scientific understanding and sustainable, health-promoting food choices and practices in everyday life.**

EXAMPLE: SCHOOL GARDEN INITIATIVES

Learning in an outdoor makerspace in Norway

School gardens are widely used in Norway as interdisciplinary learning arenas that integrate science, mathematics, design and food education. **In these gardens, students plan, cultivate and harvest crops while applying principles of scientific observation, measurement and aesthetic design.** Research highlights strong contributions to well-being through physical activity, contact with nature, social collaboration and meaningful, practical learning.

Read more: https://www.skolehager.no

Human Rights and Gender Equality as Cornerstones of the EU 4

HUMAN RIGHTS & GENDER EQUALITY

Gender Equality Strategy

How can Home Economics Education integrating STEAM perspectives promote gender equality?

Gender equality and social justice are priorities in the Home Economics context. Examples of enacting the transformative powers of professionals include projects and initiatives, as well as collaborations with other nongovernmental organisations connected with, for example, gender and human rights issues and women's empowerment (IFHE, 2008.) Moreover, in line with the European Parliament's Gender Equality Strategy (Lecerf, 2025), **education plays a central role in challenging gender stereotypes and promoting equal participation across all fields of learning.**

Within contemporary Home Economics education, integrating STEAM perspectives creates space to challenge gendered hierarchies of knowledge by recognising food, consumption, family relations, textiles and everyday technologies as valid fields of scientific enquiry. In this way, Home Economics can promote gender equality not only by increasing participation in STEAM but also by reshaping what is understood as STEAM knowledge (Branlat & Sano, 2021). The STEAM for Home Economics and Research Exchange (SHAREE) project aims to highlight the diverse dimensions of Home Economics so that everyone can find areas of interest, regardless of gender. As a subject, Home Economics naturally includes STEAM aspects, such as mathematics, science and technology. Thus, **as public understanding of the diversity of Home Economics increases, this can inspire more gender-diverse students and scholars to pursue the field and dispel gender stereotypes across different disciplines.**

EXAMPLE: SHAREE PROJECT (2024-2027):

Supporting gender equality by finding ways to integrate Home Economics-STEAM

The SHAREE project is an interdisciplinary initiative that connects Home Economics education with STEAM approaches across different educational levels. A central aim of the project is **to promote gender equality by building bridges between disciplines that have traditionally been gender-segregated,** thus linking fields often associated with women, such as home economics, with those more commonly associated with men, such as the natural sciences and technology.

Through its interdisciplinary design, SHAREE develops learning activities that integrate STEAM principles into Home Economics contexts. Such activities position everyday practices, such as food preparation, consumption and household technologies, as sites of scientific enquiries and innovations. Furthermore, by **grounding STEAM learning in familiar, real-life contexts,** the project makes these fields more accessible and relevant to all learners, while actively challenging gender stereotypes about who participates in and contributes to different domains of knowledge.

Read more: https://www.tlu.ee/en/lti/teadusteadusprojektid/sharee

Is household work still considered unpaid and invisible?

One perspective on gender issues notes the ongoing inequalities in how unpaid care and household work are distributed across the life course. In particular, women still spend significantly more time devoted to household work and caring responsibilities than men, and this has led to persistent broader gender inequalities in labour market participation and social roles (European Institute for Gender Equality, 2021). In response to these inequalities, Home Economics, as a subject, is concerned not just with ensuring the empowerment and well-being of individuals, families and communities but also with **facilitating the development of attributes for lifelong learning for paid, unpaid and voluntary work across genders** (IFHE, 2008).

In Nordic countries, such as Finland, Sweden and Norway, women spend more time than men on unpaid household work and care, but the gap is smaller than in most other European countries (OECD, 2024). In the aforementioned countries, Home Economics has been a compulsory subject for girls and boys since the implementation of comprehensive school reforms in the 1970s, thus strengthening gender equality (Branlat & Sano, 2021; Pekkarinen, Uusitalo & Kerr, 2009; see also Haapaniemi, 2022). Related to this, **integrating**

STEAM and Home economics offers significant potential for advancing gender equality, especially when approached through stereotype-challenging pedagogy that recognises the social and economic value of everyday competencies.

→ How can we fight against gendered subject hierarchies?

The OECD's report, Curriculum overload: A way forward (2020) provides a strong policy framework for positioning **Home Economics–STEAM education as a strategic solution** rather than an additional curricular demand. The report highlights that curriculum expansion without prioritisation undermines deep learning, student well-being and equity. When meaningfully connected with STEAM, integrative subjects such as Home Economics can support 'big ideas', including transferable competencies and real-life relevance, while addressing curriculum imbalance and perceived overload (IFHE, 2025). From a gender equality perspective, such **integration can counteract gendered subject hierarchies;** broaden participation across genders, including gender-diverse learners; and advance EU objectives related to sustainability, skills development, well-being and inclusive growth without increasing instructional burden.

Promoting inclusion for diverse genders should be mainstreamed across all policy areas, providing a policy context for inclusive educational practices that address diversity beyond binary gender norms (EC, 2025c). While the European Parliament's Gender Equality Strategy (Lecerf, 2025) explicitly recognises gender identity and the rights of persons identifying as LGBTIQ+, discussions on education often remain implicitly framed within a binary understanding of gender. This creates an opportunity for school subjects, such as Home Economics and STEAM, to actively address gender diversity through inclusive pedagogical practices (Janhonen-Abruquah et al., 2017).

Integrating Home Economics and STEAM with a focus on human rights and gender equality not only enhances educational outcomes but also **prepares individuals to be more informed, responsible and active participants in their communities.** This approach fosters a culture of empowerment, equality and social responsibility, ultimately contributing to more just and equitable societies in the EU.

EXAMPLE: HEED PROJECT (2016–2020):

Advancing inclusive Home Economics education in Finland

The Home Economics Education for Diversities (HEED) project at the University of Helsinki explores Home Economics as an inclusive teaching approach, emphasising the knowledge and skills that future and in-service teachers need so that they can address concerns regarding gendered practices (e.g. Anttila et al., 2015) and cultural diversity (e.g. Posti-Ahokas & Janhonen-Abruquah, 2024). Notably, **the project highlights the importance of understanding gender from an intersectional perspective.**

The HEED project contributes to research-based advancements in Home Economics education by focusing on teacher training, curriculum development and learning outcomes in comprehensive schooling and by fostering culturally responsive learning environments. A key focus is understanding how gender influences students' learning, achievement and participation and **how educational practices can better address gender differences and inequalities** (Janhonen-Abruquah et al., 2017; Posti-Ahokas & Janhonen-Abruquah, 2024).

Overall, the HEED project has helped strengthen the role of Home Economics education in fostering equitable and sustainable futures by promoting teaching methods that explicitly recognise and tackle diversity, challenge gendered norms and connect students' home and school cultures in meaningful ways.

Read more: https://blogs.helsinki.fi/heedproject/background-2/

Situating Digital Skills within Familiar Practices 5

DIGITAL SKILLS

Digital Ecucation Action Plan

How to support the meaningful use of digital technology and tools?

Within an integrated Home Economics–STEAM approach, **digital skills are developed through meaningful engagement with everyday life contexts** that reflect how digitalisation shapes households, consumption, health and participation in society. Specifically, **Home Economics offers an accessible and inclusive entry point for digital competence** by situating technology use within familiar practices, such as meal planning, budgeting, online shopping, energy management and accessing public and health services. Through these contexts, learners develop not only technical abilities but also critical digital literacy, including the evaluation of online information, data protection awareness and responsible use of digital platforms. These align closely with the EC's Digital Education Action Plan 2021–2027 (EC, 2020a), which emphasises digital literacy as an essential life skill for active citizenship, social inclusion and well-being.

How to participate more confidently in digital society?

The integration of STEAM into Home Economics further strengthens this everyday orientation by enabling learners to understand the scientific and technological systems underpinning common digital tools used in households, such as smart appliances, food delivery platforms and emerging applications of artificial intelligence in consumption and health. When explored through Home Economics, **digitalisation is not treated as an abstract or purely technical phenomenon but as a set of choices affecting daily routines, sustainability and quality of life.** This approach supports EU objectives to reduce the digital

divide and promote inclusive, ethical and sustainable digital practices by **ensuring that all learners can apply digital skills in practical, life-relevant ways** (Digital Education Action Plan 2021–2027, EC, 2020a).

By connecting digital competence to everyday decision-making at the individual, family and community levels, an integrated Home Economics–STEAM approach can contribute to more resilient households and empower learners across Europe to participate confidently in an increasingly digital society.

EXAMPLE: DIGITAL EDUCATION ACTION PLAN (2021-2027)

Reinforcing digital skills in education in Ireland

Research carried out in Ireland reinforces the Digital Education Action Plan 2021–2027 (EC, 2020a). For example, Marcus-Quinn et al. (2019) highlight the value of integrating digital technologies into authentic, classroom-based activities, **demonstrating that context-embedded digital learning fosters deeper engagement and more robust digital literacy** than stand-alone Information and Communications Technology (ICT) instruction. Complementing this, Winters and Maguire's (2022) mixed-methods study on food-related practical Home Economics teaching during COVID-19 in Ireland shows how teachers leveraged digital platforms to sustain practical learning, illustrating how this subject could be a **naturally authentic setting for developing students' digital competence**, responsible digital participation and enhanced critical judgement when processing online information.

Furthermore, research in Irish postprimary contexts has emphasised that effective digital **learning in second-level schools depends on meaningful pedagogical integration rather than device-focused approaches** (Marcus-Quinn et al., 2019). Marcus-Quinn and Hourigan (2022) highlighted the importance of accessibility and inclusive digital design in curriculum materials. Bough (2023) similarly demonstrates how project-based learning in Irish postprimary education connects digital spaces with real-world tasks, thus fostering deeper digital competence among learners. Collectively, these findings highlight Home Economics in postprimary education as being well placed to advance the goals of the EC's Digital Education Action Plan 2021–2027 (EC, 2020a), offering authentic, practice-based contexts in which students can meaningfully develop critical, applied and ethical digital competencies.

Rethinking Security and Resilience in Times of Crisis 6

SECURITY & RESILIENCE

Internal Security Strategy
Preparedness Union Strategy

Are we too vulnerable and not prepared enough for the crisis?

Recent geopolitical developments, the COVID-19 pandemic and extreme weather events have all made it clear that European households must be better equipped to manage such disruptions. These crises have exposed vulnerabilities in the everyday skills and practical knowledge needed for maintaining safety and well-being. Therefore, household preparedness has become an increasingly important aspect of citizen security, noted also in the European Preparedness Union Strategy (EC, 2025a). In this regard, **learning about preparedness can be a valuable part of education for all school level students.**

Preparedness is not solely about securing food, water or power for a short-term emergency. It encompasses a broader **ability to care for oneself and others, navigate unexpected situations and maintain essential daily routines** when external services are disrupted (Nikkanen et al., 2023). Legislation and national guidelines in several EU countries have emphasised that individuals must be capable of adapting to emergency conditions, supported by clear communication and practical guidance from public authorities. More than ever, as weather-related disruptions become more frequent and health and geopolitical crises more complex, preparedness has become increasingly important across the Union (EC, 2025a).

How to provide skills for self-sufficiency and resilience for citizens?

In this context, Home Economics education plays a central role. **Knowledge and skills related to everyday management, food preparation, budgeting, hygiene and home**

safety provide a foundation for self-sufficiency in times of crisis (Appleby-Arnold et al., 2021). Strengthening Home Economics education across the EU would ensure that all citizens acquire essential preparedness in terms of life skills early in their schooling. At the same time, integrating STEAM subjects into current Home Economics frameworks would significantly enrich learning (Perignat & Katz-Buonincontro, 2019).

A practical understanding of energy systems, digital tools, circular economy principles, resource management, chemical safety and basic engineering concepts empowers students to think critically and solve problems creatively in real-life contexts (Herro & Quigley, 2016). These capacities are directly linked to resilience, as they **enable individuals and communities to adapt, innovate and respond effectively when faced with unexpected challenges** (Keane & Keane, 2016). Combined, **Home Economics and STEAM education cultivate practical competence and adaptive thinking**—two elements deemed essential for ensuring societal security.

→ Enhancing home preparedness: The role of the European Union

EU initiatives emphasise resilience at home and strengthened crisis preparedness. In particular, the European Internal Security Strategy (EC, 2025b) calls for enhanced readiness for natural disasters, pandemics, cyber threats and social instability. The European Preparedness Union Strategy (EC, 2025a) further underlines the need to increase public awareness of risks, promote household self-sufficiency and integrate preparedness into formal education systems.

These priorities align with the notion that preparedness is a shared societal responsibility. **Public authorities, schools, local communities and families all play vital roles in fostering a stable societal foundation for crisis management** (Appleby-Arnold et al., 2021). However, Eurobarometer (EC, 2024b) results indicate that young Europeans, in particular, do not believe that they are well-informed about disaster risks.

In response, schools can address the aforementioned gap directly by expanding access to Home Economics education throughout the EU and integrating it meaningfully with STEAM learning. **All citizens would gain practical skills, critical thinking abilities and confidence** to competently manage household-level challenges during disruptions (Nikkanen et al., 2023). Such an educational approach strengthens not only individual well-being but also enhances the overall resilience of European societies, ultimately contributing to a safer, more stable and better-prepared EU.

EXAMPLE: CIVIL DEFENCE AND RESILIENCE AGENCY

Strengthening household preparedness for crisis in Sweden

The Swedish Civil Defence and Resilience Agency (*Myndigheten för civilt försvar*) plays a central role in strengthening national resilience by promoting household preparedness and encouraging every household to manage independently for at least one week during a crisis. This approach is based on the principle that public authorities are able to focus precious resources on critical infrastructure and the most vulnerable groups when households can manage independently during the initial phase of a crisis (Swedish Civil Defence and Resilience Agency, n.d.)

A key strategy is integrating preparedness into the school curriculum, particularly in Home Economics (Home and Consumer Studies, Hem- och konsumentkunskap) education. The Agency's educational materials translate abstract concepts of crisis readiness into everyday skills, such as food planning under constraints, efficient use of resources and basic self-sufficiency. Therefore, **embedding these competencies in compulsory education normalises personal responsibility and reinforces them as part of daily life** (Swedish Civil Defence and Resilience Agency, 2025).

From a policy perspective, this approach **delivers long-term benefits, including strengthened household preparedness across generations, reduced dependency on emergency interventions and enhanced public trust.** Hence, incorporating preparedness into education represents a cost-effective and sustainable investment in national resilience, with clear benefits for households and society as a whole.

Read more: https://www.mcf.se/en/

Summary

Home Economics is a future-oriented school subject that prepares learners for healthy, sustainable and responsible everyday living. This subject provides practical, competence-based learning connected to food, health, consumption, household management and sustainability. Its aims align closely with EU frameworks that emphasise 21st-century skills, systems thinking and real-life application of knowledge. As such, **Home Economics is uniquely positioned to function as an everyday-life laboratory or makerspace in which students practise problem-solving, decision-making and collaborative learning.**

Integrating Home Economics with STEAM strengthens both fields. STEAM education is most effective when grounded in meaningful, real-world contexts, and Home Economics offers precisely these contexts, namely, food systems, sustainable consumption, household technologies and resource management. Makerspaces and innovative environments have also shown how these contexts can foster broad key Home Economics skills, including critical decision-making, financial literacy, textile and design thinking and the promotion of personal and family well-being. Furthermore, experimentation and scientific enquiry can merge to promote creativity, enquiry-based learning and sustainability competencies.

Policy recommendations have emphasised enabling integration not through new curricular content but through improved coherence, flexibility and support for practical learning environments. Policymakers should recognise Home Economics as a platform for interdisciplinary learning, while schools and leaders should foster collaboration, team teaching and partnerships. Teachers also play a central role by designing enquiry-oriented tasks rooted in everyday teaching and learning practices.

The EU policy landscape generally supports the integration of Home Economics and STEAM. Home Economics contributes directly to the development of green skills by linking circular economy principles with daily practices, thus combating greenwashing and strengthening consumer competencies. Furthermore, public health goals are supported through nutrition education that merges scientific explanation with practical food-related decision-making. At the same time, **Home Economics plays a growing role in resilience and crisis preparedness, equipping citizens with everyday competencies deemed vital for security and self-sufficiency,** as highlighted in EU preparedness strategies. Moreover, integrating STEAM with Home Economics contributes to gender equality by challenging gendered hierarchies of knowledge and recognising everyday practices as valid scientific domains. This approach supports inclusive, stereotype-free learning environments that are aligned with European equality objectives.

Overall, the **integration of Home Economics and STEAM offers EU education a powerful, context-rich pedagogical approach** for building sustainability, resilience, digital competence and active citizenship that are strongly embedded in citizens' everyday lives.

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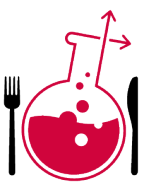

SHAREE

A SHAREE PROJECT OUTCOME