Images & Objects

Active Learning for Sustainable Development

15th Anniversary Edition

Images & Objects
Active Learning for Sustainable Development

Toolkit 1 in the Images and Objects – Active Methodology Toolkit series

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Structure of this toolkit

This toolkit is structured into nine main sections.

1.	**INTRODUCTION**	The first part presents an introduction to the toolkit, and it explains the structure, target audience and learning objectives of this material.
2.	**IMAGES & OBJECTS Series**	The second part presents an introduction to the series of *Images and Objects* toolkits, its development and its history. An overview of the series, its topics and learning approaches is also shared.
3.	**BACKGROUND**	The third part contains information on education for sustainable development, the role it plays in supporting the overall quality of education, and as key means of implementation for the SDGs.
4.	**USING THE TOOLKIT**	The fourth part provides a brief explanation on how to use this toolkit and the activities contained within. It also explains the learning methodology employed in this toolkit.
5.	**LEARNING ACTIVITIES**	The fifth part contains the primary teaching materials of this toolkit. These include the main activity and a section on strategic questioning. It also contains guidance on how to select appropriate learning resources for use with this activity.
6.	**EXTENSION of LEARNING ACTIVITIES**	The sixth part discusses how the methodology from the main activity can be used throughout the learning process, not just as an introductory activity. It also introduces a series of alternative activities that use the images and objects resources.
7.	**ASSESSMENT & EVALUATION**	The seventh part provides opportunities for incorporating assessment approaches both for formative and summative use during an active learning module.
8.	**REFERENCES**	The eight part provides a list of references used within this toolkit.
9.	**LEARNING RESOURCES**	The ninth part of this toolkit provides a starter set of learning resources to use with the activities presented.

Age and Grade relevance

This toolkit has been designed with the aim to be used by facilitators in primary and secondary schools, and the content and activities of this toolkit are targeted for learners from the age of 6 and up. Facilitators working in both formal (at different levels, such as higher education) and in non-formal education will be able to adapt these activities and content for use with their learners.

The learning approaches in this toolkit aim to provide a flexible and adaptable set of methods that can be used with all ages. By adjusting the types of strategic questions that are used, it is possible to match the level of discussions and reflection to be relevant with different students' abilities.

Learning Objectives

This toolkit aims at stimulating learners' ability to explore the concepts related to *Education for Sustainable Development* and *Agenda 2030.* The activities in this toolkit promote life-long learning competencies in communication, collaboration, critical thinking and integrated problem solving and advances interdisciplinary and holistic approaches to learning. The toolkit builds on the already well documented use of images and objects in education and provides a "quick start" for educators seeking to teach aspects of Sustainable Development. The activities defined in this toolkit specifically target the following learning objectives:

- ✔ ***Exploring concepts of sustainable development:*** Provide a mix of methodologies and materials to support a multi-dimensional exploration of the topic of sustainable development, its related concepts, systems and complexity.
- ✔ ***Making personal connections with themes of sustainable development:*** Stimulate critical thinking about one's own lifestyle choices and the relationship they have with sustainable development.
- ✔ ***Collaborating and creating common understanding about sustainable development:*** Encourage collaborative learning about sustainable development through investigation, active experience, dialogue and deliberation.
- ✔ ***Identifying interconnections between the dimensions of sustainable development:*** Examine sustainable development through a holistic perspective and apply a systems-thinking approach towards identifying interconnections and leverage points for sustainability transformations.
- ✔ ***Taking action for more sustainable lifestyle practices:*** Engage learners in applied and active learning in order to strengthen its real-world relevance and to foster competence development.

Toolkit 1 – A brief history

The original Images and Objects toolkit was first published 15 years ago. The work on the original Images and Objects toolkit began as part of the Consumer Citizenship Network (CCN) which was formed in 2003. The Consumer Citizenship Network was an interdisciplinary network funded as an Erasmus project from 2003-2009. The network consisted of educators from 131 institutions of higher education, NGOs and consumer organisations in 37 countries. The goals of the network were to stimulate and coordinate research about consumer citizenship; identify common competencies for consumer citizenship; survey curriculum provision of consumer citizenship education; and develop good practice for teaching and assessing consumer citizenship education.

Several Task Groups were formed under CCN which all had different goals focusing on consumer citizenship. Task Group 8 specifically focused on education for active citizenship and strategies for teachers and professionals to use in promoting this. The Task Group therefore began to contribute to the growth of consumer citizenship education as a relevant, interdisciplinary theme in primary and secondary school education and to prepare and carry out teacher training seminars on Education for Sustainable Development (ESD). The seminars focused on the use of experiential methodologies that encouraged education *for* sustainable development rather than education about sustainable development. Active teaching and learning approaches (i.e., transformative methodologies) were used and promoted, rather than transmissive methodologies. As awareness of the importance of education for responsible living increased, there was an equal need to create materials on sustainable consumption, social innovation, social responsibility and more. This is where the idea of a toolkit based on using images and objects grew from. Active teaching and learning approaches were at the core of this material and it quickly became an effective teaching and learning resource at the courses delivered by Task Group 8 on Education for Sustainable Consumption.

Fifteen years later, the first *Images and Objects toolkit* continues to remain a very popular resource for teachers and facilitators in need of a "quick start" into ESD. This work also inspired the continued development of an entire series of active learning toolkits for ESD, which now includes 12 toolkits on different themes within ESD. We are celebrating the 15th anniversary of the first Images and Objects Toolkit with a reedition. The reedition contains updated information about the SDGs, Agenda 2030 and how these relate to sustainable lifestyles, individual transformation and social change. The learning theories have been extended and adaptations to the main activities have been presented. More emphasis is also placed on alternative use of the methodology presented in the toolkit. As the series has evolved, a more standardised look and format has also developed, and the reedition has been updated to this formatting.

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Images and Objects - Active Methodology Toolkit and series introduction

The work on this series began 15 years ago based on the collaboration of teachers and researchers working with the themes of sustainable consumption and responsible living. The Consumer Citizenship Network (CCN) and the Partnership of Education and Research about Responsible Living (PERL) provide a foundation for this collaboration, and now this continues through the network of the UNESCO Chair on Education for Sustainable Lifestyles.

The *Images and Objects Active Methodology toolkits* are a series of learning resources focused on developing active learning methodologies to promote student-centred activities and encourage learners to question the way they think, the values they hold and the decisions they make in the context of responsible and sustainable living. Learners need to be able to construct their own understanding, meaning and values, as a step in the collective search for a sustainable future. Active teaching and learning methodologies facilitate this process by offering opportunities for interaction between educators and learners, learners themselves, and with direct connection to real-world challenges and everyday issues.

The toolkits all use images and objects to help teach responsible and sustainable ways of living in an active, experiential, interactive, practical and holistic way. Each toolkit tackles a different topic related to sustainable living, and they each utilise a different active learning theory or approach.

Table 1. *Images and Objects* toolkits and the focus and learning approaches addressed

	Title	Topic	Learning Approach
1	**Images and Objects**	Sustainable development	Active learning with images and objects
2	**Personal Consumption and Climate Change**	Impacts of consumption and lifestyles on climate change	Strategic questioning and critical thinking
3	**Financial Literacy**	Personal finance management, spending and consumption habits	Game play and dilemma challenge
4	**Time as a Resource**	Resource usage, time as a resource, future thinking and planning	Model for action and change
5	**What's the Story?**	Responsible and sustainable living	Storytelling and narratives
6	**The Power of Media**	Media literacy, responsible living, and sustainable development	Howard Gardner's Multiple Intelligence Theory
7	**Why Buy? The symbolic value of consumption**	Reasons and purposes for consumption and their links to sustainable living	Edward De Bono's CoRT thinking tools
8	**Dare to Differ**	Sustainable living through investigations into alternative lifestyles	Inquiry-based Learning Cycle (i.e., 5Es model)
9	**Education for Sustainable Consumption through Mindfulness**	Sustainable consumption and responsible living	Mindfulness practice and personal reflection
10	**Food for Thought**	Sustainable lifestyles, food production and consumption	Graphic organizers and Adapted Pathways Learning Model
11	**Playing for the Future**	Sustainable Development Goals (SDGs)	Game play and active and creative exploration of the SDGs
12	**SusTimeAbility**	Time use, sustainability and consumption	Exploration of different dimensions of time wealth

SDGs and Agenda 2030

The Sustainable Development Goals were agreed by the 193 countries of the United Nations General Assembly in September 2015. This agreement was possible only after a three-year period of international negotiation during which all countries and all major stakeholder groups had a chance to provide input into the development of the 2030 *Agenda for Sustainable Development.*

The 2030 Agenda outlines the SDGs in 17 interconnected goals. These are global goals that build on the achievements of the Millennium Development Goals, but also give more attention to climate change, peace and justice, innovation, sustainable consumption and economic inequality. The SDGs are international, but they also aim to respect different national contexts and conditions in order to reach the goals. To be successful, we need to understand that we are interdependent globally, that our actions have an impact on other people's lives and on the health and prosperity of the planet. We also need to take a new perspective and search for solutions that address the interlinkages between social, economic, and environmental dimensions. This, in part, relies on the importance of education for sustainable development and its ability to link learning to the contexts and challenges of everyday living. With quality education for sustainable development, we can empower people with values, skills, and knowledge, which will help them become active agents of change in their own lives and in their wider society.

Education for sustainable development

Education plays a major role in the implementation and achievement of the SDGs due to its potential to build capacities, increase knowledge, and provide new perspectives of understanding about the world around us. Education for sustainable development also aims to move beyond transmissive forms of learning and to engender transformative learning, which in turn supports the cooperative search for new solutions and critical reflection on how we define important socio-cultural goals related to our well-being and quality of life. Quality education and lifelong learning for all is captured as a standalone goal in SDG 4, but education is also recognised as an important means of implementation for all SDGs. UNESCO's *Education for Sustainable Development: Towards achieving the SDGs (ESD for 2030)* framework is the third internationally agreed framework on ESD, and it acknowledges both the important role education plays in achieving the SDGs and ESD's role in advancing educational relevance and quality.

Education for sustainable lifestyles plays a growing role in sustainability learning with a key focus on how we can connect, at personal and local levels, to the grand socio-ecological challenges of sustainable development. This is not just about understanding what these challenges are in a global context, but it is also about being able to recognise how our daily life choices and how we choose to organise our communities and societies impacts on global efforts to achieve sustainable development. To accomplish this, education needs not just to focus on academic competencies but also on social, cultural, and emotional skills, as well as supporting in-depth learning and value-based learning. Education for sustainable lifestyles strives to develop empowered, critically reflective and active citizens, who are aware, responsible and proactive in solving community, societal and global challenges.

Source: www.unsplash.com

Personal transformation and social change towards sustainability

Source: colourbox.com

Sustainability science has connected many disciplines in a quest to identify the relationships between humans and the larger systems they are a part of, while increasing competencies for life-long learning with the aim of generating (practical) solutions towards a sustainable and just world. The majority of sustainability scholarship and practices on transformation towards sustainability, be it personal, societal or global, have focused on larger systems and structures (eco-systems, wider socio-economic structures, technology and policy), or the lack of it, to explain transformation. Education for Sustainable Development has therefore focused on increasing knowledge and competencies on environmental questions, such as how much carbon is stored in soil. Incorporating a systems perspective helps young people see the interconnectedness between different systems and how some systems are unsustainable, for example production and consumption patterns. The social dimensions focus on reflections related to product responsibility, human rights, society and labour practices and decent work (Talan, Tyagi & Surampalli, 2020). This work has led to considerable achievements, such that sustainability has become an integrated part of many business strategies, educational systems, and national, regional and local government strategies. A large number of countries have also integrated education for sustainable development in their national curriculum.

However, scientists have not yet closed the gap between knowledge and action/behaviour, meaning that much of the knowledge gained over the past 20 years has not led to significant changes in the consumption and behavioural patterns of humans towards sustainable development (West, van Kerkhoff & Wagenaar, 2019). A new wave of research is emerging that is claiming that the inner lives of individuals is a missing link in sustainability science. Within the inner lives of individuals, we consider emotions, thoughts, values, beliefs and identities. These attributes are difficult to understand via traditional scientific tools, approaches and terminologies and might be the reason it has evaded analysis within mainstream sustainability science. By shifting our focus and practices towards the inner lives of individuals, these individuals can become catalysts for personal, societal and global transformation towards sustainable development (Ives, Freeth, & Fischer, 2020).

Education for Sustainable Development is already seen as a powerful catalyst and key to unlocking transformation towards sustainability (UNESCO, 2019; Wamsler, 2020), however ESD needs to include all disciplines of sustainability science to cover all areas of human life, from planetary systems to the inner lives of individuals. This means we need to transform from the inside out and from the outside in: systems need to change to force humans to consider alternative ways of living. However, without an inner motivation to change, such practices will not be integrated into people's identities and therefore unable to be maintained long-term.

The competencies gained from Education for Sustainable Development that includes all areas of human life, including the inner lives of individuals, will encourage young people to become global agents of change that are able to show empathy, emotional self-reflection, collaboration, inter-communication skills and personal involvement. We have therefore created a competency model that incorporates all important competencies needed for transformation on the personal, societal and global level. By anchoring these competencies in an institutional or inter-institutional support system, we are helping young people to collectively face the complex sustainability challenges of our time.

Developing sustainability competencies

There have been several valuable studies conducted towards identifying and understanding the types of competencies education for sustainable development is working with and promoting.[1] These sustainability competencies have similarities with Higher Order Thinking Skills (Anderson & Krathwohl, 2001) and provide a foundation for life-long learning. They also target the key capacities in a transformative learning perspective and enable learners with skills for active, experiential learning. While research on sustainability competencies has identified several different competencies with overlapping characteristics, for the ease of application within primary and secondary curriculums a version of these competencies is proposed that focus on three core competencies: reflection competence, interpersonal competence and action competence. While each of these competencies are distinguished by several different capacities, these capacities contribute towards an overarching competence. *Additional details on the sustainability competencies are on the following page.*

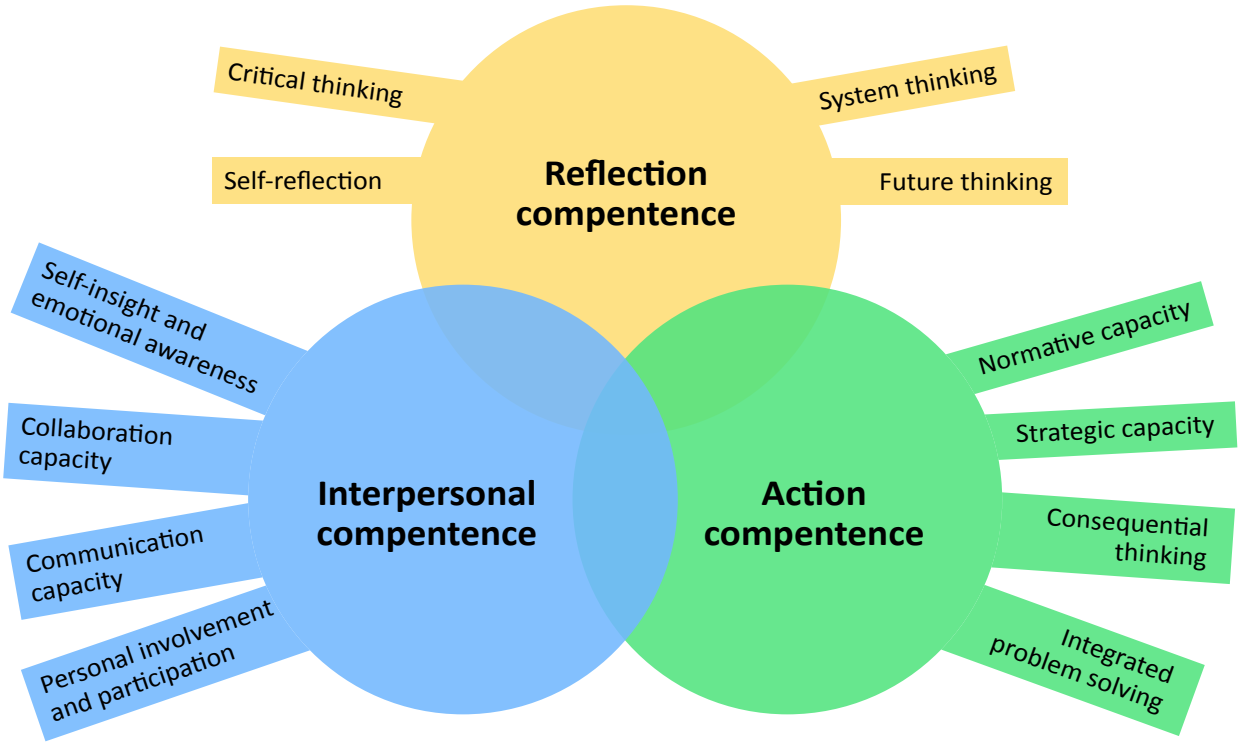

Figure 1: Sustainability competencies supporting life-long learning

[1] Rieckmann, M. 2012. Future-oriented higher education: which key competencies should be fostered through university teaching and learning? *Futures,* 44(2): 127-135.
UNESCO. 2017. *Education for Sustainable Development Goals.* Learning Objectives. Paris: UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000247444
Wiek, A., Bernstein, M.J., Foley, R.W., Cohen, M., Forrest, N., Kuzdas, C., Kay, B. and Withycombe Keeler, L. 2016. Operationalising competencies in higher education for sustainable development. M. Barth, G. Michelsen, I. Thomas and M. Rieckmann (eds), *Routledge Handbook of Higher Education for Sustainable Development.* London: Routledge, pp. 241-260.

Reflection competence

- **Self-reflection:** The ability to comprehend one's own emotions, values, behaviours and understanding, to assess one's own strengths, weaknesses, qualities and goals, and to reflect on one's own learning process and achievements.
- **Critical thinking:** The ability to analyse and evaluate information, decide on the validity of facts, and critically assess the relevance of thoughts and suggestions. This is an important capacity in learners' ability to organise and synthesise new learning within existing understandings and knowledge frameworks.
- **Systems thinking:** The ability to work with complex systems, to recognize and understand connections and interconnections, and to reflect on systems in different contexts and scales. This supports the capacity to identify intervention points and levers of change, and it helps in dealing with uncertainty.
- **Future thinking:** The capabilities to understand and evaluate several future scenarios - the possible, the likely and the desirable. To make one's own visions for the future, and to assess the consequences of action and the possible risks and challenges.

Interpersonal competence

- **Self-insight and emotional awareness:** The ability to deal with one's emotions and desires in a productive manner, and to continuously evaluate and revise one's own actions. This also leads to the capacity to reflect on how other's perceive us, our actions and behaviours.
- **Collaboration:** The ability to learn from and with others. To understand and respect others' needs, perspectives and actions. Understanding, related to being sensitive to others, i.e. empathetic management. To deal with conflicts in a group and to facilitate collaborative and participatory actions.
- **Communication:** The ability to express oneself in an intelligible and succinct way, to present one's ideas and arguments in a logical and convincing manner, and to adapt one's communication to meet others needs and levels of understanding. Good communication skills also require active listening and the ability to join in dynamic discussions.
- **Personal involvement and participation:** The ability to engage in social actions, to reflect on one's own role in collaborative efforts and to interact in a synergetic manner with others. It also requires the knowledge and skills to understand, critique and engage with democratic society including political, economic and legal systems, as well as media and civil society.

Action competence

- **Normative capacity:** The ability to identify and assess how differences in values, principles and goals influence the behaviours, attitudes and perceptions of different individuals. As well as the ability to critically reflect on how different value or moral belief systems shape differences in perspectives and social conventions, and to examine one's own biases and values critically.
- **Strategic capacity:** The ability to plan, set goals, develop actions, and coordinate implementation to reach future objectives, as well as the ability to effectively communicate these strategies to others. This provides individuals with the capacity to think proactively and consider longer-term opportunities as well as challenges that might develop in the future.
- **Consequential thinking:** The ability to analyse the consequences of one's actions, and to anticipate and prepare for various outcomes that may or may not occur and eventualities that might unfold as you take action. As well as the capacity to identify and avoid potential obstacles or risks and adapt to changing circumstances in timely and effective manner.
- **Integrated problem solving:** The ability to determine the source of a problem and find an effective solution, especially in complex situations where many factors must be examined. This requires the combined use of analytical skills, creativity and logical thinking to deduce the situation, evaluate options, and identify the most viable solution.

Introduction to Active Learning Theories and Approaches

Education for sustainable development is oriented towards whole system perspectives, and it aims to achieve learning for change. In practice, this means a focus on cross-curricular and interdisciplinary approaches to teaching and a greater effort to link classroom learning to real-world application. ESD promotes a view of quality education that is concerned not just with measurable learning outcomes and national standards, but rather with encouraging lifelong learning and developing the skills and values of learners to become agents of change. A key challenge of quality ESD is thus ensuring the relevance of education and the applicability of knowledge and competencies for addressing sustainability challenges. With a focus on developing core life skills needed for all ages, ESD uses participatory, active learning methods that promote experiential education, collective problem solving and democratic dialogue. This approach enables learners to construct their own understanding, meaning and values, as a step in the collective search for a sustainable future.

Educational psychologists tell us that people remember much more of what they do as opposed to what they hear or read. Therefore, in order to improve students' learning, educators should, where practicable, try to emphasise active – experiential learning and the use of real-world problems.

> **"[A]ll genuine education comes about through experience, [but this] does not mean that all experiences are genuinely educative."**
> - John Dewey (1938: 25)

The main focus in the *Images and Objects Toolkit* is on the kinds of strategies that are frequently contrasted with transmissive methods of teaching. Transmissive methodologies involve more formal, teacher-centred approaches, for example, an informative talk with an expert passing on content without actively involving the learners. In contrast, the *Images and Objects Toolkit* encourages active teaching and learning approaches because these offer more opportunities for interaction between educators and learners, learners themselves, and learners and the topic. There is a large diversity of learning techniques and approaches that support active learning, and as the Center for Research on Learning and Teaching has done in Figure 2, it is possible to divide these across a spectrum from simple to complex techniques.

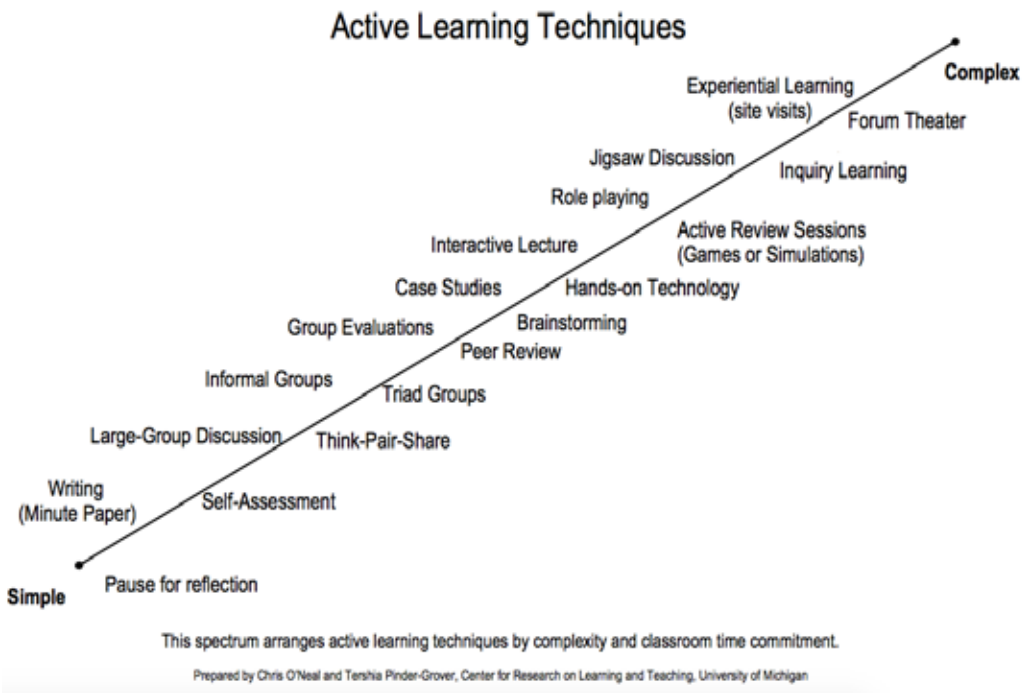

Figure 2: Diversity of learning techniques and approaches that support active learning.

Sterling (2001) compares the different approaches and values of transmissive (transfer of information to learner) and transformative (learner constructing and owning meaning) methodologies "that go beyond teaching method to also reflect philosophy and purpose of education." An adaptation of Sterling's comparison is illustrated in Table 2.

Table 2: The differences between Transmissive and Transformative Approaches (adapted Sterling, 2001)

Traditional Approach (Transmissive)	Active Approach (Transformative)
✓ Teaching focus	✓ Learning focus
✓ Passive Learning	✓ Active learner
✓ Teacher directed	✓ Teacher guided
✓ Learning from teacher alone	✓ Learning from each other
✓ Learning from expert	✓ Discovery under guidance
✓ Learning from feedback from one key person	✓ Learning from the reactions of many people
✓ Competitive environment	✓ Collaborative learning environment
✓ Relying on rules	✓ Relying on guidelines
✓ Consistency / sameness	✓ Diversity / flexibility
✓ Secrecy	✓ Openness / sharing
✓ Copying from others discouraged	✓ Learning by borrowing encouraged
✓ Mistakes feared	✓ Mistakes learned from
✓ Learning by notes	✓ Learning by problem solving
✓ Formal layout of classroom	✓ Informal /flexible arrangement
✓ Class time short	✓ Longer class time
✓ Isolated decisions	✓ Involvement of others
✓ Results thinking	✓ Process thinking

Think-Pair-Share & 1-2-4 approaches

Think-Pair-Share is an active learning method that can be used in connection with this toolkit and is well designed for use in smaller and/or larger groups or classrooms. The activity aims at including all learners in class and gives everyone equal opportunity to reflect and express their thoughts and ideas about the subject or theme they are studying. A teacher or instructor can start the first phase by posing a question to learners. We propose a question linked to the images in this toolkit and related to sustainability. Learners are then provided time to think individually about the question and encouraged to write down any ideas or reflections they have. In the second phase learners are paired together to each present their own thoughts and discuss the question together. In the third phase, two pairs join together, and they are encouraged not only to share their individual ideas but to also come up with one common message from the group. In the final phase the teacher calls on groups to share their thoughts with the whole class and a facilitated discussion follows (Cooper, et. al., 2021; Prahl, 2017).

The aim of the activity is to engage learners and help their understanding on a given topic/theme, ultimately providing in-depth learning. The activity will improve learners' critical thinking skills, communication skills, listening skills and problem-solving skills. For the teacher it is important to form open-ended questions which will not give learners the impression that the teacher is looking for a particular answer. If you as a teacher would like to use this technique for metacognitive discussions and learning, we suggest you ask learners to explain their thought processes in phases one to three. This can be done in pairs before being shared with the entire class.

Source: colourbox.com.

Source: colourbox.com.

Promoting a democratic approach for collaborative learning and decision making

As described in previous sections, Education for Sustainable Development aims to ensure that education provided is relevant towards current and future sustainability challenges. To tackle sustainability challenges, young people need to be equipped with knowledge and competencies that have not received much focus in traditional educational practices (Barth, et. al., 2007). UNESCO has been at the forefront of mobilising international collaboration in defining ESD and in shaping the foundational documents that have guided the implementation of ESD. In the early efforts to frame the UN Decade of Education for Sustainable Development, UNESCO (2006) clarified the key skills addressed by ESD with a focus towards collaborative approaches in learning.

ESD requires a re-examination of educational policy [...] in order to focus clearly on the development of the knowledge, skills, perspectives and values related to sustainability. This [...] requires a review of recommended and mandated approaches to teaching, learning and assessment so that lifelong learning skills are fostered. These include skills for creative and critical thinking, oral and written communication, collaboration and cooperation, conflict management, decision-making, problem- solving and planning, using appropriate ICTs, and practical citizenship (2006: 21).

In order for the classroom to reflect democratic processes, it needs to be an arena for critical conversation and respectful dialogue. Having a democratic approach to teaching means that the learner becomes an active participant in his or her own learning and where the predominant workstyle is not based on individuality, but on collaborative learning. This learning theory will help shape democratic values in learners. Democratic values foster tolerance, acceptance, compassion, and respect and help learners see that freedom is tied to responsibilities (Larivee, 2002). Moreover, democratic teaching approaches develop learners that not only understand democratic principles, but who are prepared and willing to participate in democratic processes (Harriger, 2014). There are several participatory, active learning methods used in ESD to enable learners to construct their own understanding, meaning and values, as a step in the collective search for a sustainable future. One such method is democratic dialogue, which encourages learners to listen and try to understand the perspectives of people with whom they disagree and focuses on trying to find common ground for action. The images and activities in this toolkit can be used as a starting point for democratic dialogue.

How to use this toolkit?

Using images and objects when exploring the wide-ranging concepts related to ESD at local, national and global levels has many benefits. Images and objects provide a "quick start" to facilitators to start working with complex topics related to sustainable development. It enhances the learning process by inviting learners to contribute to their own learning. The different images and objects appeal to different senses and styles of learning. Bringing such alternative methods into the learning environment supports the diverse needs and styles of learners better than traditional methods.

Using images and objects provides learners an opportunity to reflect upon the positive and negative effects of what is portrayed by the image or object from economic, sociological, environmental, cultural and ethical perspectives. Here there is no wrong or right answer as all images and objects are linked in some way to sustainable development. This process alone will promote reflective and critical thinking, as well as provide an opportunity for the learner to question assumptions and stereotypes and discuss the relationship between causes and effects with others. The process is enhanced further by the fact that the activities described in this toolkit are always carried out in either pairs, small groups or in plenum. Such group work encourages democratic and collaborative competencies which in turn can lead to problem solving. Members of each group can also take on the role of reporter and process the information shared during group discussions.

Images and objects are therefore an effective way to create consumer awareness of the rights and responsibilities in relation to food, transport, housing, energy, etc. but also to gain knowledge and develop consciousness of the environment and the importance of sustainable development. The activities in this toolkit are all organised around the use of images and objects. Those in the starter pack have been selected to evoke discussions around attitudes, values, beliefs, assumptions, and stereotypes related to sustainable development. The activities can be used as part of separate teaching activities or as part of a Sustainability Week where you collaborate with other subjects.

The toolkit provides a short introduction to the main activity as well as alternative ways to use images and objects. Each activity has its own set of instructions and required materials. The activities are designed in a flexible manner to provide facilitators the freedom to spend less or more time on individual activities to meet the needs and interests of the learners and the lesson. As a facilitator, you may also choose to adapt and use the suggested activities with different themes. Facilitators are encouraged to use this toolkit in most subject areas and relate to local contexts, making the toolkit both interdisciplinary and transdisciplinary. Where possible, teachers and learners may add additional resources, materials, or images that provide greater connection and relevance to local contexts, challenges, and lifestyles.

A picture paints a thousand words

Main Images & Objects activity

Objectives

The goal of the activity is to broaden viewpoints and perspectives by reflecting upon an image or object that can stimulate thinking about sustainable development and one or multiple of its social, economic and environmental dimensions. Some argue that a fourth, ethical dimension needs to be added if we are discussing the interlinkages between these dimensions. The images represent both positive and negative aspects of sustainable development.

The activity will allow learners to reflect and discuss different perspectives in smaller groups, which is less intimidating. As the learners move through the different steps in the activity, they will also practice their skills in democratic processes and decision making. Learners can also take turns in the role as reporter and present the information shared during group discussions.

Materials needed

A collection of images and objects that represent both positive and negative aspects of Sustainable Development. The images in this toolkit might help to get your collection started. Remove the images from the booklet, copy and cut as directed. You can find more images in other toolkits in the series and at the CCL website:

http://pubs.livingresponsibly.org

The types of images and objects suitable for this activity might include:

- ✔ pictures, photographs, posters,
- ✔ advertisements,
- ✔ drawings, paintings,
- ✔ objects, artefacts,
- ✔ cards with keys words or statements,
- ✔ newspaper cuttings,
- ✔ blank card and markers.

How the activity works

1. In order to work effectively, this activity requires eight or more learners. It is particularly effective with larger groups, as it ensures the engagement of all learners in the learning process.
2. A selection of images and objects are spread out in an area of a room where learners have the space to walk around and examine them. An open floor space is ideal if tables are not available.
3. Each learner is invited to select one image or object that has personal resonance and appeals to his or her understanding of sustainable development. Learners can, if they wish, choose one of the blank cards and write their own words or statements on it.
4. Learners are invited to form pairs and share the image or object that they have chosen with each other. They should explain to each other their reasons for choosing it.

   Note: You may add an additional step by indicating to the learners that they should actively listen to the other persons presentation, because in the following step you can then have learners present their partners image and explanation, rather than their own.

5. Two pairs should join together to make a group of four. Each image or object is discussed and the group must work together to prioritise just one image or object that will represent the group's under standing of sustainable development and that will be shared with everyone in the room under the following headings:
   - an explanation of why the image or object was selected to represent the group.
   - the process that took place in order to agree on one image or object.
   - the value of the activity in facilitating discussion related to sustainable development.
   - key discussion points or issues that arose in the group relating to sustainable development.

   During Step 5 the facilitator or teacher should circulate amongst the groups, checking that everyone is on task and listening for any interesting discussion points that can be highlighted during the next step.

6. General discussion phase:
   - Each group selects a person who will speak on behalf of the four group members.
   - The reporter from each group shares their image or object with the other groups and there is a general discussion led by the facilitator/teacher.

   It can be useful for the facilitator or teacher to share any background information about the image or object during the general discussion phase. This may highlight how images and objects are open to different interpretations and how care must be taken to avoid generalisations, prejudiced or stereo-typical comments.

   Providing an immediate and wider context to the discussion evoked by the image or object can facilitate a better and broader understanding of the realities, complexities and challenges of sustainable development.

   Note: You may also ask groups to reflect on how they came to a decision about the picture they selected (as such collaborative approaches can address aspects of citizenship education). For example, was there equal say and consensus in the group on which picture was selected; was it based on a majority wins approach; or did one person make a suggestion and everyone else followed it?

Table 3: Some of the benefits of using Images and Objects as an active learning methodology

Step of activity	Benefit
Step 1: Collection of different images and objects are presented	The different images and objects appeal to different senses and styles of learning, etc.
Step 2: Each learner is invited to select an image or object that appeals to her understanding of "sustainable development".	There is no right or wrong answer/selection as all images and objects are linked in some way to Sustainable Development. The aim is to make a personal link between their understanding and the concepts.
Step 3: Learners are invited to form pairs and share the image or object that each of them selected	This is less intimidating initially than sharing with a large group and provides an opportunity to discuss and listen to another person's perspective.
Step 4: The group of four choose one image or object	This encourages a democratic process and decision making in a less intimidating small group setting.
Step 5: One person is nominated from each group, to speak on behalf of the group	This provides the opportunity to take on the role of the reporter and process the information shared during group discussions.
Step 6: General discussion	This broadens viewpoints and perspectives.

Power of Strategic Questioning

Asking questions can stimulate conversations and reflections. Answers can lead to new questions with new answers. What you want to achieve with your questioning will depend on the situation and context. Sometimes the goal might be to stimulate critical thinking, other times the goal might be to guide the learner to a particular direction such as to connect theory and practice or to relationships and interactions. With questioning there might not always be a correct answer and it might be valuable to reflect upon this (Tveiten, 1998).

In this section we would like to introduce you to the power of strategic questioning and how this method can be used to support and facilitate improved learning and understanding. Research has shown that when teachers are trained in specific questioning skills they demonstrate these strategies in class, which in turn is modelled by learners and challenges their higher-level thinking and complex learning. Strategic questioning can clarify issues, confront and challenge discrepancies and increase advanced reasoning amongst learners. Thus, it is a powerful tool for social change and finding solutions to complex problems. It is therefore an effective method to use when teaching about complex issues related to sustainable development (Gillies & Haynes, 2010).

How to adapt reflection questions to support different lines of inquiry

As a teacher you can use reflection questions to assess the level of understanding learners in your class have on a particular subject or theme. Reflection questions are intended to assess and improve metacognitive skills, by making learners aware of the knowledge and skills they have acquired in a lesson (Stearns & Fredrikson, 2021). Thus, reflection questions can be used by a teacher, or the teacher can provide support to the learner to self-regulate their learning and make adjustments where there is need for improvement. Research has shown that learners who use reflection questions or other forms of self-regulation, such as enhanced answer keys, learn more and experience greater success in school. However, the teacher's role is critical in communicating and facilitating these learning guidelines or scaffolds (Sabel, Dauer & Forbes, 2017). Without specific instructions from teachers, learners do not see the benefits of such learning guidelines and do not apply them in their studies.

Source: colourbox.com

Source: colourbox.com

Methods to support strategic questioning:

Question Formulation Technique (QFT)

Developed by the Right Question Institute[2], the Question Formulation Technique (QFT) is a strategy that empowers learners to ask questions and encourages in-depth learning. The strategy can be adapted to all age groups. QFT teaches learners how to formulate their own questions, learn about different types of questions, such as open and closed-ended questions and learn how to use which type of question in which situation.

As a teacher you can use the QFT strategy at different points in the learning framework:

- ✔ To introduce learners to a new subject.
- ✔ To assess learners' knowledge and map where more understanding is needed and why.
- ✔ To evaluate learners' knowledge after a teaching period has ended. This way the technique can be used to compare with learners' knowledge at the beginning of a school year. Has their knowledge increased? How?

Learners can use the QFT strategy to:

- ✔ Learn how to formulate good questions for deeper learning.
- ✔ Other areas in which learners have used the QFT include: to develop science experiments, create their own research projects, begin research on a teacher-assigned topic, prepare to write an essay, analyse a word problem, think more deeply about a challenging reading assignment, prepare an interview, or simply get themselves "unstuck".

Chalk talk

Originally developed by Hilton Smith and later adapted by the National School Reform Faculty, this strategy is completely silent and provides learners the opportunity to reflect and generate ideas by slowing down their pace. The strategy can be used to explore different questions. These questions are written on a board and learners are invited to, silently, write their responses on the board. They can also connect responses by drawing lines between them. The facilitator can choose to move towards in-depth learning by circling around interesting responses for further reflection, or creating new questions based on the learners' responses. This strategy can be used to reflect on worrying problems in relation to sustainable development. Education for sustainable development needs to deal with wicked problems that seem impossible to solve. Strategies such as the Chalk Talk can help to reflect upon such problems in an uncomplicated setting (Smith & Wentworth, 2017).

Harkness discussion or spider discussion

Another strategy to use to help learners reflect at a deeper level and generate new ideas and thoughts is Harkness or Spider discussion. Similarly to a flipped-class, learners will come to class prepared. They can, for example, read an assignment or watch a video on a particular topic or theme and then write down the questions they have before coming to class. The teacher starts the discussion by providing the class with a question or statement, after this the teacher is silent. During the discussion phase, learners discuss their questions and share their thoughts on the assigment they read or video they watched, prior to coming to class. By being silent, the teacher allows learners to lead the conversations. The teacher only maps which student leads the conversation and to what depth. This is important as learners will be asked about the learning process at the end of the discussion. Especially learners that were not involved in the discussion will gain new insights as to why they did not contribute as much and how this has affected their learning (McCarthy, 2015).

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[2] The Right Question Institute, Cambridge, Massachusetts: https://rightquestion.org/

Questions to support group discussions and facilitated decision making:

Tawfik, et. al. (2020) have looked at many models and theories that investigate question-asking. They discovered that these theories and models all confirm how important asking questions is when solving complex cases or wicked problems, however that these theories also often lack a more comprehensive understanding and interdisciplinary approach. Tawfik, et. al. (2020) therefore gained knowledge from various disciplines (education, psychology, communication, linguistics, etc.) to analyse questions from different perspectives. Based on their holistic and interdisciplinary approach they propose a classification of question-asking that explains how knowledge and problem-solving are integrated in a two-way process. They propose 3 main categories for asking questions:

- **Simple/shallow questions** help the learners define the problem (i.e., verification, disjunctive, concept completion);
- **Testing questions** help the learners make meaning of the subject matter and align their new knowledge with prior knowledge (i.e., example, feature specification, quantification, definition, comparison);
- **Deep complex questions** help the learners achieve systems-level thinking (i.e., interpretation, causal antecedent, causal consequence, goal orientation, instrumental/procedural, enablement, expectation, judgement).

By moving learners from simple questions to deep complex questions, in-depth learning is facilitated. In relation to the topic of sustainable development, we have prepared some examples of questions for each category.

Examples of simple/shallow questions:

✔ What do you see in your image?
✔ How is your image connected to sustainable development?
✔ What is happening in the background?
✔ What might be happening outside of the frame of the image?
✔ What would you like to know more about?

Examples of testing questions:

✔ What is Sustainable Development?
✔ What are examples of sustainability?
✔ What are the three dimensions of Sustainable Development? (social, economic and environmental)
✔ Could you think of a fourth dimension?
✔ How can you have a positive effect on the three dimensions in your daily life?
✔ What do the Sustainable Development Goals aim to achieve?

Examples of deep questions:

✔ Who is responsible for achieving a green shift in society?
✔ How can you support the green shift?
✔ What will happen to our planet if we do not make a shift towards sustainable development?
✔ How can the world achieve sustainable development?
✔ Do some countries have more responsibilities than others towards sustainable development? Why?
✔ Is it essential for humans to become more “connected” to the environment in order to move towards sustainability? How do we as humans disconnect ourselves from nature? How can we re-establish that connection?
✔ What does “quality of life” really mean?
✔ Would a sustainable lifestyle affect our quality of life? How?

How to select and use appropriate resources

Images and Objects

When selecting an image or object the facilitator or teacher should consider the following:

- ✔ Is the image or object of good quality? Is it clear and readable?
- ✔ Will the image or object encourage, promote or evoke a discussion around attitudes, values, beliefs, assumptions, perceptions, stereotypes etc. related to ESD themes?
- ✔ What is happening in the image?
- ✔ Where was it taken?
- ✔ When was it taken?
- ✔ Where is it from?
- ✔ What is it saying or not saying about Sustainable Development?
- ✔ Is the image or object positive, neutral or negative or a combination of these?
- ✔ What makes the image or object interesting?
- ✔ What is happening in the background?
- ✔ What might be happening outside the frame of the image?
- ✔ What emotions are contained within the image from two perspectives: that of subjects featured and that of observers looking at the image?
- ✔ What questions are left unanswered by the image or object?

Background information:
When collecting images and objects gather background information about each image or object.
This information can be useful to share with participants.

In the case of a photograph, for example, the following information would be useful:

- ✔ Name of person submitting photograph;
- ✔ Name of person who took the photograph;
- ✔ Place where the photograph was taken;
- ✔ Date the photograph was taken;
- ✔ What is happening in the photograph?
- ✔ If individuals are portrayed in the photograph, has permission been sought to use the photograph in an educational activity or resource?
- ✔ What motivated the photographer to take the photograph - was it something about the setting, scene or context that captured the photographer's interest?
- ✔ What is the link between the photograph and ESD?

Points to consider when compiling a collection of images and objects:

- ✔ Compile a balanced representation of images and objects that can represent local, national, and global aspects of sustainable development and explore these in different contexts (e.g., developed vs. developing countries or regions).
- ✔ Ordinary, everyday images of routine activities, settings or objects are often the most effective. Images and objects do not need to shock or provide the 'wow' factor. Even in the 'ordinary', different learners will see different things, have different opinions and perspectives.
- ✔ Unless a specific focus is intended in a lesson, take care not to over-emphasise one dimension or area of sustainable development.
- ✔ Consciously build up a collection of images and objects that represent a good range of the 17 interconnected goals outlined by the 2030 Agenda (see short descriptions of SDGs at back of toolkit under Resources).

Students actively creating learning resources

Motivating learners to take part in their own learning is the core aim of active learning methodologies. Working with images and objects, learners can actively and creatively engage with the learning process by developing a range of different media-types for use in the learning activities. These can include videos, photography, essay and article writing, drawing cartoons, etc. to be used to explore, discuss and respond to sustainable development themes. Inviting learners to be photographers encourages them to reflect on and identify different challenges and/or solutions for sustainable development from within their local community. It also helps connect learners to the topic on a personal level, creating a deeper association.

Here are a few examples on how you as a teacher can invite students as photographers:

- Learners are asked to take photographs of positive and negative examples of sustainable development in their local community. Back in class, learners share their photographs and discuss why they are positive and negative examples. For further exploration learners can try to flip the photo and think of an alternative way to make it positive or negative.

- Learners are asked to take photographs of examples of sustainable development in their local community that they would like to know more about, such as, the local sorting and recycling facility, transportation, infrastructure, etc. The class can then collectively decide which topic they want to explore further. Throughout the year, several topics can be explored based on the learners interests and connected to their subjects. These topics can again be connected to the international perspectives of sustainable development for deeper exploration and learning.

These questions can be used to facilitate the discussion that follows collectively in class:

- ✔ Why did you choose to take this photograph?
- ✔ Is it a negative example of sustainable development, or a positive? Why?
- ✔ Why is this topic important?
- ✔ What are the reasons you chose to take this photograph?
- ✔ What are the consequences of what you photographed?
- ✔ Are the consequences personal, local or global?
- ✔ How could you contribute to a positive change?
- ✔ What other actions could you take to create a positive change?
- ✔ Is your photograph connected to a Sustainable Development Goal? Which ones?

Source: colourbox.com

Ethical Issues in selecting resources, especially images and photographs

When students are doing photography as part of an assignment, this also provides an important opportunity to discuss issues about ethics and consent when taking photos of other people. If using images that portray individuals, it is important to respect the dignity of the individuals by seeking their permission (or parent/guardian permission) to use the image for educational purposes. Students should also be aware that making images of people publicly available, by posting them online, carries different requirements for consent and permission.

The values underpinning ESD need to inform the choice and type of images and objects that are used. These values include:

- ✔ respecting the dignity of the people portrayed in images or those who may have been involved in the production of an object
- ✔ belief in the equality of all people
- ✔ acceptance of the need to promote fairness, solidarity and justice (Dochas, 2006).

Source: colourbox.com

Graphic organisers

A graphic organiser is a visual tool that can be used to present different types of knowledge and concepts in a way that supports the exploration and identification of the relationships between the different components. Graphic organisers aid learners in developing, organising and summarising their own learning. Graphic organisers can assist learners with their thinking and provide visual frameworks to help them structure disjointed information which is of particular importance in making reasoned personal choices for sustainable living. Graphic organisers facilitate the learning process by providing a scaffold for the development of ideas and the construction of knowledge. Some graphic organisers are more applicable to specific aspects of the learning process than others.

For example, graphic organisers are well suited for:

- ✔ collecting information,
- ✔ comparing and contrasting,
- ✔ developing ideas,
- ✔ sequencing information,
- ✔ summarising and extending thinking and learning.

Some graphic organisers have become very popular and are commonly used as pedagogical tools in classrooms, textbooks and other educational materials. Among the most popular graphic organisers are the Venn diagram, KWL (Know, Want to know, Learned) chart, fishbone diagram, mind map (or idea web) and concept map. See page 29 for more information on graphic organisers.

Using images and objects online

The Covid-19 pandemic forced many countries around the world to close down their societies. This resulted in school closures and considerable numbers of learners being educated online for extended periods of time. Creating online learning environments that were engaging, active and meaningful were essential for students' learning experiences. Active learning with images and objects can provide an important component in online learning to engage learners and as a foundation for group discussions. Furthermore, images can capture the theme or dominant emotion of a piece of writing, provide a visual representation that connects learners to the text, and aids the learners' working memory. There are several approaches for using images and objects online, both for teachers and learners:

Source: colourbox.com

- ✔ **Creating pictures:** Either drawing by hand or on the computer. This gives learners the opportunity to present their own knowledge in a personal and meaningful way. The pictures can be shared online in plenum for further discussion.
- ✔ **Photo essays:** To achieve this, learners can work in teams or independently to compile digital images that pertain to a relevant topic within the theme of sustainable development. Captions can be added to each photo, explaining the photo's relation to the subject and giving insight into the learner's thinking.
- ✔ **Visual storytelling:** Teachers show a photograph online, and then invite learners to create a narrative for the image (or for a series of images). Ask learners to identify certain details of the image, such as the setting, the characters, and what is happening. Is there a conflict? What can be a resolution? This brainstorming can be done in plenum before each learner is asked to write a reflection based on what they see.
- ✔ **Photojournalism:** This can be a very powerful way to engage learners in deep and complex issues. Ask learners to share an image of a current event connected to sustainable development, such as climate change, overproduction, inequalities, etc. Teachers can invite learners to ask questions and reflect on the event that is seen in their image. It is also an effective way for learners to communicate their own opinions and encourages them to choose images that draw attention to issues that they find particularly important or relevant.

Source: colourbox.com

Alternative Activities

The activities presented in each toolkit from our series of Active Methodology Toolkits are designed in a flexible manner. This means that teachers can readily and freely choose how to use the activities in their teaching. The toolkits are set up in a way that you, as a teacher, can either choose to do one or more activities from one toolkit as a single lesson, this will give learners an introduction to a topic or theme within sustainable development and stimulate initial interest and reflection. Alternatively, you can choose to explore several activities from one or more toolkits as part of a lesson plan or teaching module over a longer period, which will lead to deeper learning as learners are able to explore a topic or theme from different perspectives.

The toolkits can also be used for planning a multidisciplinary, interdisciplinary, or transdisciplinary period at your school, diving into different topics each day of the week or exploring one topic through different subjects and supported by using different active learning methodologies. You can aid learners' further learning by inviting different stakeholders, such as business leaders and entrepreneurs, social innovators, policy makers at local and national levels, non-governmental organisations and more, to speak or present their work during multi- and interdisciplinary periods. Supporting the extension of learning beyond the classroom and into the real-world will provide learners with a sense of global citizenship and environmental justice which can enhance collective and participatory processes, as well as increasing systems thinking. Table 3 presents an example of what a learning module combining multidisciplinary, interdisciplinary, and transdisciplinary learning activities could look like with the support from the Active Learning toolkits.

Table 4: Example of an interdisciplinary module using activities from the Active Learning series.

	English or other native language	Religion and Ethics	Foreign language	Natural Science	Social Science	Maths
Week 1	Communication about sustainable development in your country - how and for whom? Being critical towards sources of information	Ethics connected to lifestyles choices and power structures	Cultural diversity and communicating with international organisations	Lifestyles of Indigenous people. Biological diversity.	Distribution of resources. Social wellbeing, human rights, and inequality.	Personal finances - statistics on the standards of living in your country compared to other countries
	Toolkit 8: Dare to Differ		**Toolkit 5: What's the Story?**			**Toolkit 3: Financial Literacy**
Week 2	Assignment: Create a book about the topic/theme in Book Creator. Utilise different perspectives incorporating aspects from at least 3 or 4 different subjects.					
	Toolkit 11: Playing for the Future; Toolkit 5: What's the Story?; Toolkit 3: Financial Literacy					
Week 3	Assignment: An Action Project where learners will explore food consumption and food production: - Local environment - Local food shops - Investigate and suggest solutions					
	Toolkit 8: Dare to Differ		**Toolkit 10: Food for Thought**			

Using methodology throughout the learning process or inquiry cycle

The methodology presented in each toolkit can be used throughout the learning process/cycle, not just as an introduction to a topic. In the following section we will explain how different active learning approaches can be adapted to different situations. The methodology will be presented in a simple manner, so you as a teacher have the freedom to adapt to your teaching situation and subject.

Getting started: As an opening activity, this is meant to stimulate interest and curiosity about the subject; activate prior knowledge and opinions; and develop questions for inquiry. The basic activity in this toolkit is designed as an opening activity. Using images and objects displaying topics of sustainable development will help learners connect between prior and present knowledge and experience. Another method that can be used as an opening activity is the "focused conversation", (see Toolkit 11 for details), where a framework clarifies questions at four different levels (objective, reflective, interpretive, and decisional) to help individuals or groups through a progressive discussion on a topic or issue.

Going deeper and looking at interconnections: Now that learners have had an initial activity to stimulate their interest and curiosity on a topic, it is time to move them towards a deeper understanding. One method that aids deeper understanding of a subject is "storytelling". By examining everyday objects or items that we use on a regular basis through an inquiry-based learning approach, learners appraise and evaluate the sustainability impacts of an assigned object by answering a set of questions prepared by the teacher. Graphic organisers can also be used to aid learners in developing, organising and summarising their own learning.

Exploring different themes and subjects in detail: Encouraging learners to actively investigate, to test current concepts and ideas, and to work through and solve problems provides them with the opportunity to develop skills for practical application of knowledge to real-world situations. An "inquiry-based learning approach" can be used to support active, student-centred exploration of different real-world problems connected to sustainable development.

Investigating problems and finding solutions: For learners to effectively investigate and solve problems, they need to be able to think metacognitively. Metacognition is our knowledge about and ability to control and regulate our thinking, before, during and after new learning experiences. By utilising a learning cycle with active learning approaches at its core, learners can strengthen their reflective thought processes by actively engaging in their own learning, asking questions that develop their ability to reflect on new learning, predicting and testing new knowledge relationships, practising their new skills in a group setting, and collaborating on activities and through discussion. It is important that learners are given ample opportunity to develop these skills over time (Elung, 2017).

Playful Learning: Learning in a playful manner helps the learner create associations and see relationships; recognise alternative solutions and create new solutions; allows the learner to make choices and test these out; and deal with the consequences of their choices. Playful learning often focuses on addressing dilemmas, challenges or uncomfortable situations in a safe and non-threatening environment. Real-life dilemmas and challenges may provide the basis, but they are worked with in a way that do not carry the same level of consequence as there would be in the real world. As a teacher you could ask your class what challenge or problem they have identified in their local community that they would like to learn more about. By allowing learners to identify a challenge or problem by themselves, you are giving them the opportunity to think independently and autonomous. Having learners work on real-life issues also makes the topic of sustainable development seem more relevant and less distant.

Alternative activities with Images and Objects

Show and Tell: Ask learners to bring a photograph to class that they have taken themselves or an object that they have made or purchased that links with some aspect of sustainable development. Invite each learner to share their image or object with other learners and explain the background and significance of the image or object.

Positive and Negative: Invite learners to select two images or objects. One should represent a positive aspect of sustainable development, and other represent something negative in relation to sustainable development. Learners share in pairs and in groups similar to the main *Images and Objects* activity.

Switch: Each learner selects an image or object. Two learners then come together and switch images/ objects. Each learner then tries to guess why the other person selected that specific image or object. After a few minutes of thinking, the two learners get together and present their hypothesis to each other, and then they share the correct answers with each other.

Sorting: Write each of the 17 key action themes of the Sustainable Development Goals (SDG) on separate sheets of paper. Place the sheets on the wall in different parts of the room where they are clearly visible. Spread out a large selection of images and objects related to ESD on the floor.

Invite learners to sort the images and objects and take each one and place it under a specific SDG. Learners can disagree about where an image or object has been placed, and if they would like they can than move it to another SDG. The group should discuss and debate over the placement, and the movement of images and objects should continue until the group is happy with the placement of all of the items. In summing up, discuss the experience with the group.

Lights, Camera, Action: Learners in a creative class can make their own images and objects resource pack (either generally on ESD or on a specific topic of focus in the class). They are asked beforehand to bring a digital camera with them to class. They are then invited to go out and take photos of things that say something about the ESD topic (positive examples, negative examples, problems, solutions, etc.). They must come back at a specific time to present and describe their images. The photos can be transferred onto a memory stick and shown on a laptop/data projector to the larger group. Learners can also bring back any relevant objects that they have gathered.

Journalist: Ask the learners to imagine that they are journalists writing articles on sustainable development for a national newspaper or magazine. Write a headline and caption (or byline) to go with an image or object that you have selected (or that they select). The activity can be extended by having them write a short article on the topic or theme.

Inspiring ideas: Place a display of images and objects in a room. Invite learners to write a short creative story or poem about a theme related to ESD. They can use the display as a source of inspiration to help them with their writing.

Diversity of everyday objects: By considering the diversity and differences that we find around the world in relation to single everyday objects (e.g. toilet or cooking stove), learners can actively discuss and reflect on different ways that people meet their basic needs. Working in groups of 4-5, learners should examine a collection of images that show a variety of examples of the same object from around the world. The group should then have a discussion about these images that reflects on what basic need is being met by this object and what are the differences in how this need is met. Once groups have completed discussion on a specific object, they can either exchange the images of that object with another group and begin discussing a new object, or each group can report back on their object and their discussion in plenum.

Questions for learners to consider are: 1) What basic need is met by the object that is depicted in this picture?; 2) Are there certain examples of this object that you prefer and others that are less desirable?; 3) What if you only had access to the less desirable options, how would this impact on your quality of life?; 4) Why are there such large variations in the examples of this object?; 5) How does access (or lack of access)

to different variations of this object impact on efforts to achieve a fair and just global society?; 6) Are there certain options of this object that are more sustainable or less sustainable, and why?

On pages 57 and 59 in the resource section you can find strips of images related to everyday objects with examples showing the diversity of these objects from around the world.

Investigating local sustainability: Have your learners identify an example of local sustainability or unsustainability by going out of the classroom. Equipped with photo cameras or mobile phones they can take photos of the examples they have found. Once back in class, the photos can be printed and hung on the wall (or shared as a digital slide deck). The class then discusses why each photo is an example of local sustainability or not. What qualities make the photo a positive or negative example? Why? What can the learners do in their daily lives to change or build on the image?

Writing stories about an image or object: Show your learners one example of a photograph and invite them to describe what they see in relation to responsible and sustainable living. After this initial practice run, you can distribute an image (face-down) to each learner. Instruct them not to show it to their peers. Invite the learners to write down as many sentences as possible, in five minutes, to describe "the story" of their image in relation to responsible and sustainable living.

The images and descriptions are then collected. Now, attach the images to the wall or whiteboard in your class and number each image. You will now read out randomly the descriptions written by the learners. Learners are now invited to guess which description matches which image on the wall. Discuss the photographs, descriptions and number of correct answers. What images were challenging to describe/guess?

I'm Here Because…: This activity provides a useful introduction to an ESD training or workshop where many participants may not know each other. At the beginning of the event, invite each learner to select an image or object that reminds them of why they are in this class or why they are learning about this topic or theme. They should then find someone in the room that they do not know and share their image or object with that person.

Jigsaw Time: This activity is a good icebreaker or method for forming groups. For example, in a group of 24 participants, where you would like to form 6 groups with 4 students in each group, you would do the following:

- select 6 images and cut each image into four pieces (similar to a jigsaw).
- scatter the pieces in the middle of the floor and ask each participant to select one piece.
- invite participants to move around the room trying to find participants with matching pieces of the image.
- when all four pieces of each image have been found and the group of four have come together, invite them to discuss their image.

Source: colourbox.com

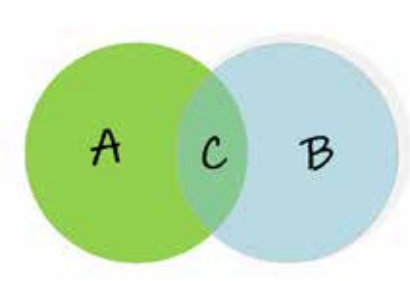
Graphic organisers using images

Graphic organisers aid learners in developing, organising and summarising their own learning. Some graphic organisers are designed simply to get learners to generate ideas and get them written down, others compel learners to examine relationships between elements of a system or different pieces of information. Below, we describe three activities that can be done using graphic organisers and images.

Templates for these graphic organisers are available in the ANNEX file at:
http://food4thought.livingresponsibly.org

Activity 1: Engaging and activating prior knowledge on the topic

Mind Map: Learners can explore a particular topic or theme of Sustainable Development, such as food security and insecurity. Each group of learners is provided with a set of images and a blank template of the mind map diagram. Learners can now explore the concept of food security/insecurity and focus on describing elements such as: causes; impacts; environmental events that can lead to insecurity; food ethics; role of national/international agencies and governments; etc. Learners use the images as stimulation to engage in a discussion around food security/insecurity. They record the key points on the mind map with words and images. The group work is followed by a class discussion.



Activity 2: Examining and exploring new ideas, and listening to each other's arguments and concerns about the initially developed ideas

Venn diagram: Learners can examine similarities and differences between two items. To make this a meaningful activity for your learners, provide images of objects that your class can relate to. Such as mobile phones, computer games, clothing, food items, etc. Also provide them with a copy of a Venn diagram. Learners can focus on the origin, packaging, distribution, and end of life through the images you provide. Learners can then discuss and collectively decide if they are sustainable or unsustainable choices. The group work is followed by a class discussion facilitated by the teacher.

Activity 3: Organising, integrating and transforming their new knowledge and experience to make them meaningful for themselves and others.

Fishbone diagram: The fish's head is connected with the backbone to large and small bones. Learners are provided with a copy of the fishbone diagram and can glue an image of a topic they want to explore deeper on the head of the fish. Groups of learners then continue by writing facts and key words that will help them explain the topic in the discussion that follows. Teachers can provide learners with learning materials to help them explore the topic or direct them to relevant literature on the internet.

Activities that encourage group work and collaborative learning

Group Think Tank: Give each group (of approximately four persons) an image glued to the centre of a large sheet of paper or card. Provide them with a 'post-it' pad and markers. Invite the group to reflect on how the image relates to sustainable development (or the chosen theme). Learners should write relevant words or statements on the 'post-its' and place them around the image. Invite each group to place their image and statements on the wall for others to see.

Carousel Group Think Tank: Start the activity in the same way as the group think tank activity above. Make sure however that each group receives a set of 'post-its' that are a different colour. Give each group oa short amount of time (e.g. 5-10 min.) to respond to their image and attach 'post-its' with words or statements around the image. Invite each group to then pass their sheet on to the next group who can add words, statements or responses to the previous groups 'post-its'. Continue to do this in a carousel style around the room. At the end of the activity place the posters on the wall with the images and comments. It will be clear from the colours of the 'post-its' how the ideas and comments have built up and developed as the activity moved around the groups in the room.

Compare and Contrast: Provide each group with an image and invite them to compare and contrast their lives with what they 'see' in the image.

Virtual Interview: Give each group an image which portrays at least one individual. Invite the group to write a list of questions that they would ask that person if they had the opportunity to interview them.

Source: Unsplash.com

Source: Unsplash.com

Source: Colourbox.com

Assessment for learning

While evaluation is often used solely as a summative activity at the end of a teaching period or module to measure learners' retention and achievement, a broadened perspective towards assessment approaches can enhance its use as an important component throughout the learning process.

Using **assessment for learning** requires that we apply the same principles for active, engaged and participatory learning to the work we do with assessment. It also requires that assessment is not focussed on one single snap-shot of learners' achievement, but rather functions in an ongoing manner throughout the learning process to engage learners in active and critical reflection on their own learning and to motivate further learning. Just as a broad approach to active learning can seek to involve students in all stages of the learning process, including in the planning, design, execution and evaluation of these activities, a broad approach to assessment can also be used at all stages.

Prior to planning and designing a teaching module, it can be useful to conduct diagnostic and/or formative assessment. Diagnostic assessment can be used to "test" if learners' have already mastered concepts that this new module will build upon. While formative assessment allows learners to express their current understanding of a topic (as well as their misunderstandings) and to identify what parts of the topic that they are most interested to learn more about. In addition, this provides an opportunity for learners to reveal their tacit knowledge and begin new learning by first thinking about and reviewing what they already know about the topic, thus creating greater continuity between previous and current learning. A holistic approach to assessment can continue to be used throughout the learning process to further engage learners to critically reflect on their own learning, how their understanding has changed and how they can apply that to new situations.

Students can be active parts of the assessment process by:

- Reviewing, discussing and even defining criteria for assessment/evaluation;
- Reflecting on why and how the selected criteria demonstrate effective learning and achievement;
- Reflecting on what they have learned and what they still find difficult to understand;
- Identifying areas for improvement or further learning, which can then be supported by feedback and facilitation from the teachers;
- Identifying specific strategies that can be used to investigate and solve problems;
- Identifying what worked and what did not work in an active learning process or project;
- Reflecting on how to apply lessons learned to future situations;
- Involving peer-to-peer assessment and feedback;
- Conducting evaluation of collaborative learning activities and contributions from group members;
- Reflecting on learning objectives throughout the learning process and mapping current gaps or barriers to achieving them; and
- Reviewing and reporting on one's own learning (as a form of summative evaluation).

Assessment for learning provides valuable opportunities to strengthen learners' own reflection on their learning path and process. Involvement in defining assessment criteria allows learners to reflect on what demonstrates effective learning and achievement. Continual assessment throughout the learning process allows opportunities to identify what has been understood and what still needs further work. Student participation in summative assessment allows them to consider how they apply lessons learned to future situations and the relevance of these lessons to their daily lives.

Assessment tools like learner logbooks or diaries, KWL charts, teacher-learner interviews, learner portfolios, and peer assessment are all valuable approaches to use with assessment for learning.

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SEEKING
HUMAN
KINDNESS

IMAGES AND OBJECTS

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IMAGES AND OBJECTS

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EMAAR

IMAGES AND OBJECTS

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Source: Hugo Agostinho

SEA PRINCESS

IMAGES AND OBJECTS

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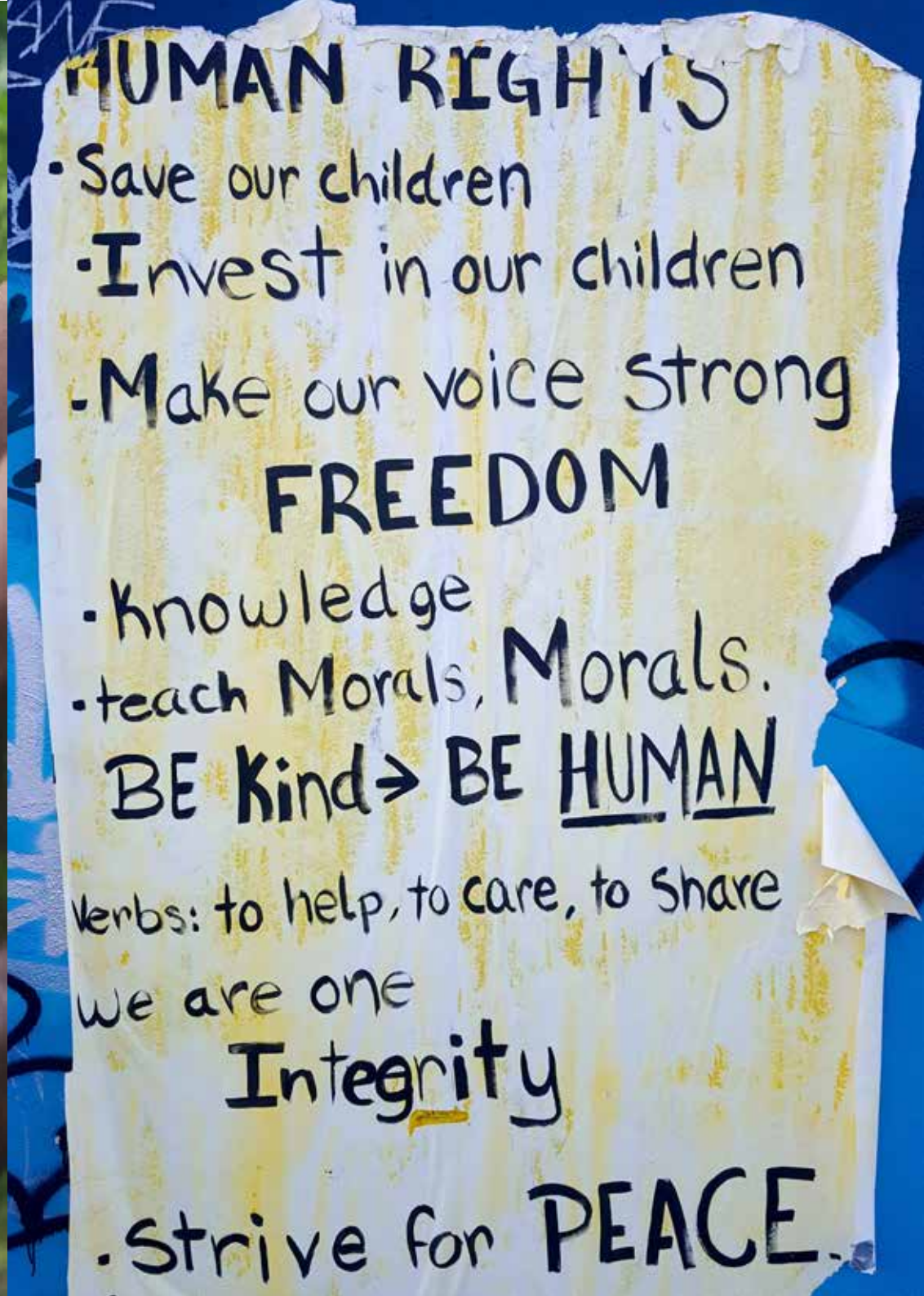
HUMAN RIGHTS
· Save our children
· Invest in our children
· Make our voice strong
FREEDOM
· knowledge
· teach Morals, Morals.
BE Kind → BE HUMAN
Verbs: to help, to care, to share
we are one
Integrity
· Strive for PEACE.

IMAGES AND OBJECTS

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IMAGES AND OBJECTS

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FREEDOM
WE DEMAND
EQUAL RIGHTS NOW!
WE MARCH FOR
INTEGRATED SCHOOLS NOW!
WE DEMAND
DECENT HOUSING NOW!
WE DEMAND
AN END TO BIAS NOW!

IMAGES AND OBJECTS

Source: unsplash.com

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IMAGES AND OBJECTS

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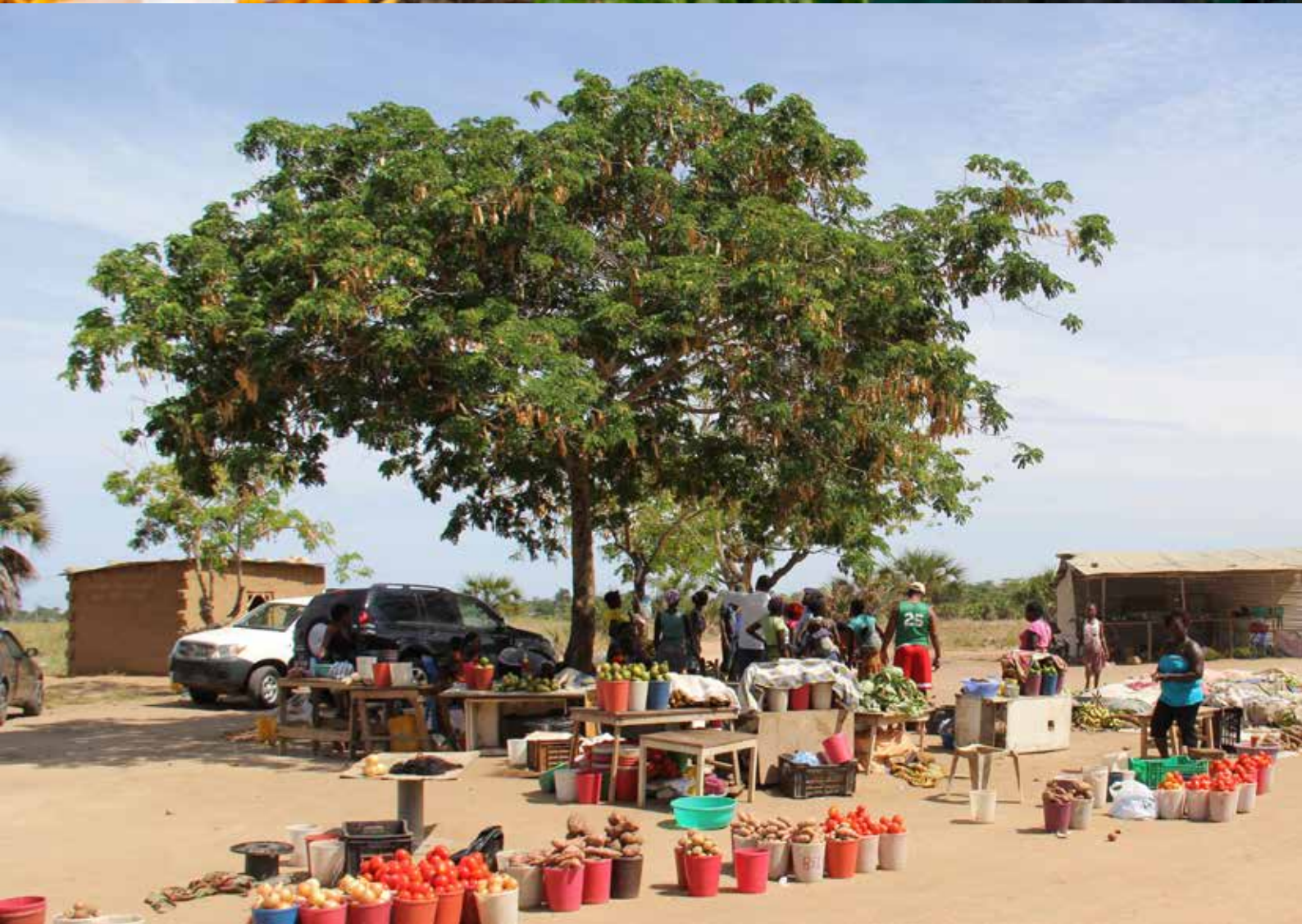
GRANNY
COMICE



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FIRST

IMAGES AND OBJECTS

Source: colourbox.com

IMAGES AND OBJECTS

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1 2 3 4

1

Images of toilets from around the world

Source: Dollar Street | Source: Dollar Street | Source: Dollar Street | Source: Colourbox.com | Source: Dollar Street

2

Images of water sources from around the world

Source: Dollar Street | Source: Dollar Street | Source: Dollar Street | Source: Dollar Street | Source: Dollar Street

3

Images of vegetable produce from around the world

Source: Dollar Street | Source: Dollar Street | Source: Dollar Street | Source: Nuno Melo | Source: Dollar Street

4

Images of cooking sources from around the world

Source: Dollar Street | Source: Dollar Street | Source: Dollar Street | Source: Dollar Street | Source: Hugo Agostinho

1 2 3 4

1	Images of transport from around the world				
	Source: Dollar Street	Source: Colourbox.com	Source: Colourbox.com	Source: Hugo Agostinho	Source: Colourbox.com
2	Images of light sources from around the world				
	Source: Colourbox.com	Source: Dollar Street	Source: Dollar Street	Source: Dollar Street	Source: Dollar Street
3	Images of housing from around the world				
	Source: Ely Pinto	Source: Dollar Street	Source: Dollar Street	Source: Dollar Street	Source: Dollar Street
4	Images of classroom from around the world				
	Source: Pixabay	Source: Pixabay	Source: Colourbox.com	Source: Pixabay	Source: Colourbox.com

Cards with short descriptions of the SDGs

1 NO POVERTY	End poverty in all its forms everywhere.
2 ZERO HUNGER	End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
3 GOOD HEALTH AND WELL-BEING	Ensure healthy lives and promote well-being for all at all ages.
4 QUALITY EDUCATION	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5 GENDER EQUALITY	Achieve gender equality and empower all women and girls.
6 CLEAN WATER AND SANITATION	Ensure availability and sustainable management of water and sanitation for all.
7 AFFORDABLE AND CLEAN ENERGY	Ensure access to affordable, reliable, sustainable and modern energy for all.
8 DECENT WORK AND ECONOMIC GROWTH	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
10 REDUCED INEQUALITIES	Reduce inequality within and among countries.
11 SUSTAINABLE CITIES AND COMMUNITIES	Make cities and human settlements inclusive, safe, resilient and sustainable.
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Ensure sustainable consumption and production patterns.
13 CLIMATE ACTION	Take urgent action to combat climate change and its impacts.
14 LIFE BELOW WATER	Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
15 LIFE ON LAND	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
17 PARTNERSHIPS FOR THE GOALS	Strengthen the means of implementation and revitalize the global partnership for sustainable development.
	LEAVE NO ONE BEHIND

Images and Objects

Images and Objects

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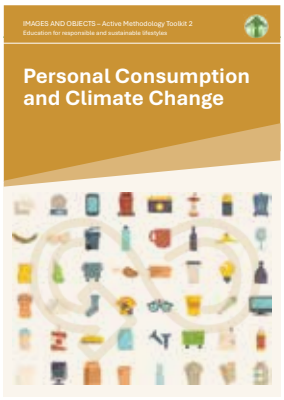

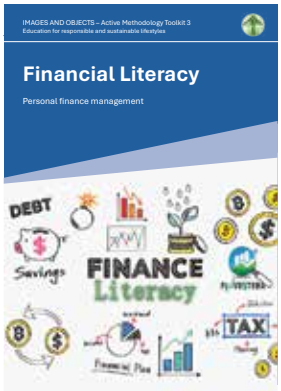

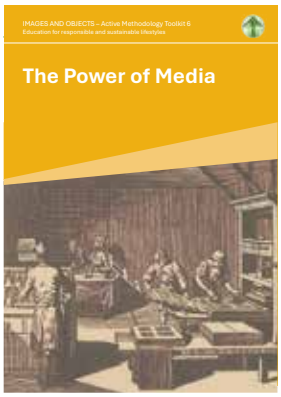

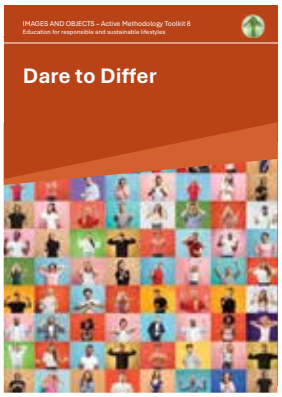

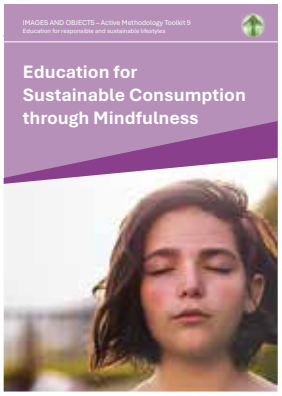

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"For our very own survival, we must learn to live together sustainably on this planet. We must change the way we think and act as individuals and societies."

Stefania Giannini

Photo: Ely Pinto

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