IMAGES AND OBJECTS - Active Methodology Toolkit 11
Education for responsible and sustainable lifestyles

Playing for the Future
Sustainable Development Games

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CONTENT

Structure of this toolkit

This toolkit is structured in five main parts.

1. INTRODUCTION	The first section presents an introduction, and it explains the structure, target audience, and learning objectives of the toolkit. It also provides an overview of the Images and Objects Active Methodology Toolkit Series.
2. BACKGROUND	The second section provides a background on the key concepts that frame the issues covered in this toolkit and how these may be addressed through education for responsible living.
3. USING THE TOOLKIT	The third section 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.
4. LEARNING ACTIVITIES	The fourth section presents ten different learning activities. Each activity utilises a different approach to learning through play to facilitate the exploration of the linkage between personal actions and the Sustainable Development Goals.
5. RESOURCES	The fifth section contains resourses to support the learning activities. The main materials needed for the SDGs Roulette game and Roll the Dice game are provided, and a set of images as well as SDG description cards are prepared. In addition, links to digital resources that will aid learners to further explore the linkages between personal actions and the Sustainable Development Goals are given.

Age and Grade Relevance

The activities in this toolkit are designed with a progressive level of difficulty. For both the roulette and dice games, the corresponding activities are designed at three different levels. At the first level, the activities offer exploration of the SDGs and aim to establish a basic understanding of the sustainable development agenda. At the second level, the activities offer a deeper engagement with the learners and aim to develop stronger links between personal actions and the SDGs. At the third level, the activities encourage learners to think both creatively and strategically in search of new sustainability solutions and innovations.

This toolkit has been designed for use in secondary schools (both lower and upper secondary schools). The content and activities of this toolkit are targeted for learners from age 10 and up. By having activities categorised by level of difficulty, the toolkit will be able to cover a wide age relevance. Primary school teachers, as well as teachers in further and higher education, will be able to adapt activities and content for use with their learners.

Learning Objectives

This toolkit is focussed on engaging learners in active and creative exploration of the Sustainable Development Goals (SDGs). The activities in this toolkit promote creative thinking, deliberative and communicative skills, scenario thinking and problem-solving skills, as well as enhancing the learners' motivation, engagement and ability to approach the topic from different approaches (Singer, Golinkoff, and Hirsh-Pasek, 2006). Four main learning objectives are addressed by the toolkit towards an overall increase in competencies for sustainable development (Wiek, Withycombe, and Redman, 2011; Rieckman, 2018).

- **Playful learning and creative investigation:** To engage learners together in imaginative and creative exploration of sustainable development (and the SDGs) through playful learning activities in order to create deeper associations and new relationships with the material.

- **Exploring interlinkages and systems thinking:** To enhance holistic forms of analysis and interpretation through encouraging whole systems perspectives in order to develop abilities to work with intervention points and levers of change and to work towards positive synergies.

- **Linking personal actions to SDGs:** To explore the relationships between personal actions and sustainable development in order to gain an appreciation of the influence, both positive and negative, that our actions – individually and collectively – have on the world around us.

- **Future thinking and finding new solutions:** To enrich evaluative and strategic competencies through considering scenarios and anticipating change in order to foster abilities for creative problem solving and an orientation towards innovative solutions.

Images and Objects Active Learning Methodology

The Images and Objects toolkits are a series of learning resources focused on developing active learning methodologies to promote learner-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 the process by offering opportunities for interaction between educators and learners, learners themselves, and with direct connection to real-world challenges and every day issues.

These toolkits use images and objects to help teach responsible and sustainable ways of living in an active, experiential, practical and holistic way. Each toolkit tackles a different topic related to sustainable lifestyles, and they each utilise a different active learning theory or approach. The work on this series began over ten 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 for Education and Research about Responsible Living (PERL) provided the foundation for this collaboration, and now this continues through the International Partner Network of the UNESCO Chair on Education for Sustainable Lifestyles coordinated by the Centre for Collaborative Learning for Sustainable Development (CCL) based at Inland Norway University of Applied Sciences.

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 realise that globally we are interdependent, that our actions have an impact on other people's lives and on the health and prosperity of the planet.

Five overarching themes (5Ps) frame the 17 Global Goals for Sustainable Development. These are *Planet, People,* and *Prosperity* achieved through *Peace* and *Partnership.*

PLANET
"We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations."
- from the 2030 Agenda for Sustainable Development

PEOPLE
"We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment."
- from the 2030 Agenda for Sustainable Development

PROSPERITY
"We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature."
- from the 2030 Agenda for Sustainable Development

PEACE
"We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development."
- from the 2030 Agenda for Sustainable Development

PARTNERSHIP
"We are determined to mobilize the means required to implement this Agenda through a revitalised Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focussed in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people."
- from the 2030 Agenda for Sustainable Development

Learning for the SDGs and taking action

The 5Ps provide a framework in how we consider Education for Sustainable Development (ESD) and the types of learning objectives and competencies that are desired. For **PLANET**, this means education that promotes holistic, integrated interpretations of knowledge and whole-systems thinking. For **PEOPLE**, this means developing learners' critical awareness and reflexivity to create personal knowledge constructs. For **PROSPERITY**, this means learning that is orientated towards problem solving, practical experience, and the search for new knowledge and innovations. For **PEACE**, it is about empowering socially aware, ethical and responsible citizens who appreciate interdependent relationships between themselves, society and ecosystems. For **PARTNERSHIP**, it is about developing cooperative learning relationships through deliberation, democratic dialogue, group meaning making, values-based learning and social learning.

Incorporating these 5 aspects may help acquire the Life-long Learning Skills promoted by ESD which support learners in gaining critical life skills and the adaptive capacity to be active in the pursuit of sustainable development. Current and future generations are forced to deal with complex societal, economic and environmental issues that are rapidly changing. It is clear that passively acquiring knowledge and information on sustainable development issues and challenges does not develop autonomous thinking, nor does it foster ownership in the learner leading to change. What is needed is a different approach towards learning and applying knowledge for developing the practical capacities of the learner. Transformative learning is one such approach and is described as a process of effecting change in a *frame of reference*. Frames of reference are the structures of assumptions through which we understand our experiences (Mezirow, 1997). Mezirow believed that frames of references could be changed by providing learners with a "disorienting dilemma" to challenge their thinking. By helping learners become critically reflective of their own assumptions, they are able to actively change their frame of reference, which in turn makes it easier to learn for adapting to change.

Introduction to learning theories

"The entire object of TRUE EDUCATION is to make people not merely to do the right things, but enjoy them; not merely industrious, but to love industry; not merely learned, but to love knowledge; not merely pure, but to love purity; not merely just, but to hunger and thirst after justice".

(John Ruskin, Unto This Last and Other Writings, 1860)

• Playful Learning

Playful learning provides significant opportunities for growth whether one looks through the lens of behavioristic, psychoanalytical or cognitive development theories or from a cultural-historical perspective. Both free play and gaming stimulate the acquisition of knowledge, the increase in understanding, the ability to apply knowledge and analyze it. Both can also contribute to the process of learning how to synthesize and assess knowledge (i.e., Bloom's taxonomy). Depending on the form and facilitation of the games, they can:

- Stimulate critical thinking;
- Help the learner create associations and see relationships;
- Assist in recognizing alternative solutions and creating new solutions;
- Allow the learner to make choices and deal with the consequences of their choices.

Birgitta Knutsdotter Olofsson (1992) explains that playful learning is both real and imaginary, near and distant. It allows one to try out things from real life without many of the barriers and dangers one might normally encounter. Most importantly, playful learning allows one to intermingle what one knows with what is unknown. It can be both fun and serious at the same time.

"Through play the individual comes to learn about him or herself and about others… When we (play) we undertake an apprenticeship which uses our creative skills to the full…. Games reflect the spirit of mutual respect and interdependence, which inevitably leads to solidarity" (Eduard Spescha, Swiss Committee for UNICEF, 1982).

Photo: colourbox.com

• Scenario Thinking

Scenarios have traditionally been used to describe and anticipate unknown situations, be they in the form of theatrical performances, military undertakings or scientific assumptions. They are narratives that analyze historical developments and depict plausible alternatives. Scenarios illuminate interdependencies and highlight potential consequences. With the emergence of systematic planning for social change, scenario thinking gained increased prominence. By identifying shared visions and possible trends, individuals have looked at the implications of their hopes, fears, knowledge and aspirations for the future.

The Club of Rome's *The Limits to Growth* (1972) provided a series of computer simulations based on available information related to trends in connection with exponential economic and population growth on a planet with a finite supply of resources. The report forecasted scenarios in which the earth would be unable to support the current rates of growth. *The Limits to Growth* was a major warning predicting man's impact on the environment. It spurned the debates that led to the establishment of the World Commission on Environment and Development, the subsequent publication of *Our Common Future* (1987) and in doing so contributed to the emergence of sustainability science.

Scenario thinking and social innovation have evolved as ways in which creative communities can delineate possible futures "*using the capacity many people have to think and act inventively in their own everyday - imagining something that is not there, and finding a way to make it materialize*" (Manzini, 2003).

Constructive energy and positive intelligence are the tools employed to identify possible alternative living strategies. By thinking "out of the box" and finding unconventional approaches, individuals and communities can converge individual interests with those of society and the environment, bestowing meaning and value to everyday activities, leading to sustainability. Anna Meroni (2007) calls such people "*enthusiastic dreamers - ordinary people who make the extraordinary possible.*"

Numerous scenario methodologies have been developed (e.g., Delphi method, forecasting, strategic planning, backcasting, etc.). When scenario planning is linked with systems thinking, this is often referred to as crafting "dynamic scenarios". The process of scenario thinking related to gaming, while often less scientifically sound compared to other methods, provides opportunity for increased understanding of the dynamics and interrelationships of existing phenomena. The process in itself stimulates reflection and imagination.

• Systems Thinking

Moving people from thinking to acting sustainably is not a simple task. Educational programmes that simply provide information often may not achieve desired behavioural change. Education needs to find ways of communicating the significance of various ecosystems and our collective dependence on ecological life-support systems. In this way learners can learn about and value ecosystems, as well as better evaluate human interactions with them. The good news is that there are examples of educational programs showing progress in developing learners' values and skills, while also offering them opportunities to practice new and more sustainable behaviours. These programs can empower learners to take individual and collective actions.

A very promising approach to developing education for sustainable development and encouraging responsible behaviour comes from work on systems thinking (Capra and Luisi, 2014). This is accomplished by understanding how communities and ecosystems are organized and function. Capra and Luisi (2014) emphasize how important and essential a systemic conception of life is. They note that studying ecosystems and people's interactions with them is crucial for the survival and well-being of humanity. It is also paramount that learners make clear links between social, ecological, economic, political, technological, and other practical aspects of life. Education for sustainable development must help learners understand how numerous and complex our impacts are on the planet. "*Systems thinking will become a necessity if citizens are to make wise decisions about sustaining life on this planet*" (Jacobson et al., 2015: 70).

• Behaviour Change Theories

Playful learning, scenario thinking and systems thinking all provide useful approaches in learning for sustainable development by stimulating opportunities to imagine alternative futures and solutions and to reflect on and understand the complexity of the challenges we face on our planet today. It is these types of skills that need to be cultivated if we are to become actors for sustainability transitions. However, traditional environmental education approaches have too often concentrated on raising awareness for environmental problems and lacked the approaches to empower individuals to actively and consciously pursue sustainable development efforts (Choi and Didham, 2010). Further, these approaches fall short in explaining variances of behaviour among differing consumers and the cultural value orientation of the society to which the individual belongs.

Many available models of behaviour change have provided theoretical insight into how and why individuals change their behaviour. Amongst the strongest theories of pro-environmental behaviour, we find the Value-Belief-Norm theory (Stern, et.al., 1999). This work builds off of Schwartz's Norm Activation Model (1977), and links it to environmental value theory. The theory explains that socially standardized values and norms that promote pro-environmental behaviour can be incorporated and perceived by the individual as his or hers own reference point of acceptable and non-acceptable behaviour (Sherif, 2006). The extent to which people choose to incorporate the socially standardized values and norms, depends on their level of motivation and whether this motivation is internal or external. Over time, these socially standardized values have the power to create lasting social attitudes. Even though this model is considered the strongest for explaining pro-environmental behaviour, it can still only account for 35% of the variances between personal norms and indicators of pro-environmental behaviour (Jackson, 2005).

Social marketing theories provides additional insight into which factors drive behavioural change. They present an understanding of the stages of behavioural change a decision maker experiences when changing behavioural practices. During the initial stage – pre-contemplation, the decision maker is unaware of subject and information. Education and awareness raising are necessary to initialise contemplation. In stage two – contemplation, the decision maker begins to consider the subject, but does not link the subject at hand to his or her action. At this point, clear linkages must be drawn between the issue at hand and the individual's daily practices in order to advance to the next step. Stage three – decision and determination leads to a point where a conscious choice is made to take action. To advance this stage, practical examples to support action must be demonstrated. In stage four – action, the decision maker tests and experiences ways to incorporate his or her new beliefs into practical behaviour. Efforts should be made at this point to support the new behaviour and reward the action taken. The final stage – maintenance sees the decision maker continue with regular practice of this new behaviour. To aid the internalisation of this new behaviour, links should be drawn between the new behaviour and wider socio-cultural changes (Andreasen, 2002).

The theories described in this section provide an insight into explaining human behaviour and what factors drive our decision-making processes. Unfortunately, there is no clear answer or solution, this is clearly evident in the value-action gap that still exists in society (Jackson, 2005). To close the value-action gap, a partnership between all of the various actors involved is required. This whole systems approach considers personal and individual practice in conjunction with economic, social and political systems. Education plays a key role in that it informs the individual, and it empowers and encourages them to participate in the decision-making process. An overall strategic procedure needs to be considered also to support the connection of these mechanisms and systems in order to catalyze the practice of pro-environmental or pro-sustainability behaviours.

How to use this toolkit?

This toolkit focuses on how the Sustainable Development Goals (SDGs) can be explored in a creative manner and engages learners to actively participate in the achievement of the SDGs. The learning activities support this exploration by stimulating inquiry, investigation and systemic thinking. The activities will develop learners' understanding of the SDGs, increase their reflection surrounding individual and collective responsibilities towards a more sustainable society, and stimulate engagement with their roles as key actors in searching for sustainable solutions and innovations. The activities are set up in a way that provides the teacher with separate teaching activities that can be used at different times and offers the option to adjust them to the level of the learners and desired depth of exploration.

The toolkit provides a theoretical basis towards the objective of fostering creative exploration of the SDGs and supporting the acquisition of important skills in order to empower learners to actively take part in the change they want to see. Each activity has its own set of instructions, and the required materials are identified and partly provided. The objectives for each activity are linked to the presented theories in this section of the toolkit.

The activities are designed in a flexible manner so more or less time could be spent on individual activities to meet the needs and interests of the learners and the lessons. As a teacher, you may also choose to adapt and use the suggested activities with other themes or topics. Teachers are encouraged to use the activities that suit their learners best, stimulate their interests and relate to local contexts. Where possible, the teacher (or learners) is encouraged to add additional resources, materials, or images to provide greater connection and relevance to local contexts, challenges, and lifestyles.

Photo: colourbox.com

Opening – Engaging learners to explore existing knowledge

An opening activity is provided that aims to engage learners in the topic and to stimulate their interest in the subject. It also provides an opportunity for learners to activate their prior knowledge about the topic, and through this they can make better connections between past and present learning experiences. In addition, this activity can help learners develop their own questions in order to promote more active inquiry and investigation during later activities.

Activity 1 - Focused Conversation

The focused conversation method, developed by the Institute of Cultural Affairs (ICA) is a framework involving a four level process for structuring a conversation and helping individuals or groups to journey through a discussion on a topic or issue (Stanfield, 2000).

The four levels of a focused conversation, *Objective, Reflective, Interpretive* and *Decisional*, are also known by the acronym 'ORID'. The ORID framework can be used in different ways. Some examples include using it to support:

- A stand alone discussion activity;
- A precursor discussion activity before undertaking other related work/activities;
- At the end of a process or activity to support evaluation and reflection.

The focused conversation method provides an ideal framework and methodology for supporting discussion about Sustainable Development and related areas covered in this toolkit.

Objectives

- Using the focused conversation framework and methodology, learners will be supported to discuss sustainable development and the SDGs.

- By being asked appropriate questions at each level of the ORID framework, participants will be able to discuss what they already know about sustainable development and the SDGs; share their feelings and perceptions; interpret meanings and values; and make decisions and agree to actions.

Preparation

- Decide at which stage a focused conversation will be carried out.
- Design and select the questions to be used at each level of the ORID framework.
- Samples of questions for each of the four levels are included in the template table on page 14.

Resources Required

- Set of sample questions to be used during the focused conversation.
  **See table on page 14 for examples of questions.*
- Note taking materials for learners.
- Flip chart and markers for facilitator.

How the activity works

1. A focused conversation is led by a facilitator who asks a set of questions covering all levels of the ORID framework and records key points of the discussion as appropriate, e.g. on a flip chart.

2. The conversation starts with the objective level to elicit the external reality. Questions at this level are designed to draw out observable data such as facts about the topic. These questions are usually simple, but they are designed to ensure that learners are talking about the same issues and topics.

3. The second level, the reflective level, is designed around questions that elicit feelings about the topic and internal relationships to the data. This step helps to draw out reactions and responses such as participants' emotions, opinions and perceptions of the subject.

4. The third level, the interpretive level, is about giving meaning to the topic with questions that support delving deeper into the subject.

5. The fourth and last level supports learners to decide on resolutions, actions and conclusions.

Photo: colourbox.com

Focused Conversation Framework Structure & Sample Questions			
Steps	**Overview**	**Option 1 Activity** Use as an introductory activity. Select sample questions from each level.	**Option 2 Activity** Use as an evaluation/reflection activity following the activities in this toolkit. Select sample questions from each level.
Step 1 **Objective level** WHAT?	This step involves asking questions that help to set the scene and provide some context. Questions help to identify facts, knowledge and understanding by drawing out observable data, e.g. images, words, ideas that have caught your attention, etc.	Ask questions that provide an opportunity to open the conversation for the learners and help them to identify what they know. • What words or images come to mind when you hear the terms/words: - Sustainable Development? Sustainable Development Goals (SDGs)? - Values? Responsibility? • What facts are you aware of/confused about in relation to Sustainable Development and the SDGs?	• What are some of the things we did in this activity/session? • What caught your attention? • What did we see/hear? What words, phrases or images stood out? • What facts are we now aware of?
Step 2 **Reflective level** GUT?	This step helps to draw out reactions and responses such as emotions/feelings, and perceptions of the subject.	Ask questions that help learners to talk about how they feel about Sustainable Development and the SDGs. • What excites, inspires you, intrigues you? • What gives you hope? • What challenges you or concerns you? • What confuses you? Annoys you? Bores you?	• How do you feel about the activity you participated in? • What surprised you? • When were you most excited/inspired? • When were you most challenged, confused, annoyed? struggling? bored?
Step 3 **Interpretive level** SO WHAT?	This level deals with meaning, values, understanding, significance and implications and provides an opportunity to delve deeper.	Ask questions that help to draw learners out further on aspects of Sustainable Development and the SDGs. • What are the key issues, problem areas or related challenges? • Are you aware of other groups/individuals tackling challenges in relation to Sustainable Development and the SDGs? - What questions are they raising? What are we learning from them? - Are they saying anything to us about where we are now, where we need to be in the future, implications? • What elements of Sustainable Development and the Sustainable Development Goals (SDGs) have meaning for you? Why? - Has your thinking/values changed at all? How? - What lessons have you learnt/are learning? - How are you, your family, community, etc. impacted?	• What were the central issues, key points, key challenges? • What insights emerged/are emerging? • Is your thinking changing? Becoming clearer? How? • What was the most meaningful aspect / significance of this activity and the learning for your studies, life, etc.? • What do you conclude from this activity? • What questions should we be asking ourselves? Others? • What would you say about the experience to learners who were not present?
Step 4 **Decisional level** NOW WHAT?	This last stage helps to draw the conversation to a conclusion and decide on any actions that individuals or groups can take.	Ask questions that help to draw the conversation to a conclusion or prepare learners for an action such as a classroom activity, project or game periode. Invite learners to answer questions. • Where should we go from here? • What action(s) can we take? • How can we apply this conversation and some of the ideas shared to our next activity?	• What could you do differently as a result of participating in this activity /experience? • What would it take to help you to apply what you have learnt? • What would you be prepared to commit to? • What first steps can you/we take? What's the next step?

Our Common Responsibility – SDGs Roulette

Credit: CCL

Our Common Responsibility is an interactive board game where learners focus on how sustainable lifestyles can be made more accessible, attractive and socially acceptable. Three different roulette wheels allow learners to explore the relationships among the SDGs, lifestyles themes and responsible actors.

Shifting towards more sustainable ways of living requires people individually and collectively to understand how their lifestyles and behaviours influence the global pursuit of sustainable development. Achieving this shift is a fundamental challenge for everyone whether we function in governments, business, advertising, civil society, education, or simply as individuals. This game encourages learners to explore what constitutes a happier, healthier and more sustainable lifestyle and to consider who has the responsibility for making sustainable lifestyles the norm and not the exception.

The game examines essential ingredients of living well: family, community, time as a resource, meeting basic needs, recreation, and balancing obligations and wishes. It can stimulate reflection on strategies for achieving sustainable lifestyles – such as deciphering the systemic nature of lifestyles, taking advantage of life stages and transitions, accommodating diversity in lifestyles, and engaging in collective action.

Three activities are presented for use with this game. **Activity 2** explores the concept of sustainable development and its framing within the SDGs. **Activity 3** investigates the responsibilities of different actors in relation to implementing the SDGs. **Activity 4** encourages the search for innovative solutions for achieving sustainable development transformations in our everyday lives.

Resources Required

- Three roulette wheels and a spinner attached to the center of each one.
  **A template of the game board is provided in the toolkit, or the roulette wheels can be downloaded from the resource materials and printed in larger sizes (see link on page 29).*

- Flip chart or board for writing down group responses.

- Optional: handout for each group of the Sustainable Development Goals.
  See: full list of SDGs and targets in *Transforming our World: The 2030 Agenda for Sustainable Development* (pages 18 to 32).

  https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

Activity 2 - Understanding the SDGs and Sustainable Development

Objectives

The activity uses the SDGs Roulette game to encourage learners to engage with the key concept of sustainable development and develop their understanding of the SDGs.

How the activity works

1. Divide the learners into 6 groups.

2. Each group is assigned a Responsible Actor and are asked to role-play this persona. They are allocated 5 minutes to consider what the specific values and objectives of this group of actors might be.
Groups should discuss: What is important to this actor? What type of achievements do they work towards? What role does this actor hold within wider society? How do they judge or measure the success of their actions?

3. To select the actor group that will speak first, the facilitator spins the Responsible Actors dial.

4. Next, the Lifestyle Themes dial is spun to identify the theme that the actor group will focus on.

5. All groups are allocated 5 minutes to confer and consider their viewpoint on the allocated theme. **Groups should discuss the connections and awareness they have in relation to the theme.**

6. The selected actor group then has 3 minutes to verbally present and comment.
The related items are recorded on a board or chart.

7. The SDGs dial is then spun to identify a sustainable development goal.

8. All groups are allocated 5 minutes to confer as a group and consider **their viewpoint on the allocated theme and how this links to this SDG.**

9. The selected actor group then has 5 minutes to verbally present and comment.

10. Other groups are asked to contribute from **their actor perspective on how they have an impact on the allocated Lifestyle Theme and identified SDG,** and a group discussion explores this further.

11. If time allows, the activity is repeated in multiple rounds with different actors, themes and SDGs.

Example

Responsible Actors	Lifestyle Themes	SDG	Viewpoint on theme and links to SDG
BUSINESS	CLOTHING	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	Consider the impact a fashion business has, from a clothing perspective, on sustainable and responsible clothing production and consumption.

The group presents on the demand for fast fashion and the impact this has on the production and disposal of clothing. They discuss the example of what are the "real-costs" of a cheap t-shirt, including social and environmental costs. They also consider why it is possible to sell a t-shirt at such a low price, and what impact this has on consumption practices.

Activity 3 - Linking personal actions with achieving the SDGs

Objectives

This activity uses the SDGs Roulette game to motivate learners to reflect on their roles as a key actor in addressing the themes raised from a sustainability perspective. In doing so, they will be encouraged to investigate and discuss personal actions that can be undertaken to achieve the SDGs.

How the activity works

Steps 1 to 4 of this activity are the same as those for Activity 2 *(i.e., follow instructions from the previous page).*

5. All groups are allocated 5 minutes to confer and consider their viewpoint on the allocated theme.
The difference in this activity is the topic of discussion.
Groups should discuss the role or influence that their actor has on the selected theme.

6. The selected actor group then has 3 minutes to verbally present and comment.
The related actions are recorded on a board or chart.

7. The SDGs dial is then spun to identify a sustainable development goal.

8. All groups are allocated 5 minutes to confer as a group and consider **their viewpoint on what actions they can undertake to address the selected theme within the context of this SDG.**

9. The selected actor group then has 5 minutes to verbally present and comment.

10. Other groups are asked to contribute from **their actor perspective on how they can take actions to support the allocated Lifestyle Theme and identified SDG,** and a group discussion explores this further.

11. If time allows, the activity is repeated in multiple rounds with different actors, themes and SDGs.

Example

Responsible Actors	Lifestyle Themes	SDG	Viewpoint on theme and links to SDG
INDIVIDUAL	FOOD	3 GOOD HEALTH AND WELL-BEING	Consider the specific actions that you can take as an individual, in relation to food, which will contribute towards achieving SDG 3: Good health and wellbeing.

The group presents on the role food consumption and nutrition play for one's health, but they also discuss how food production impacts on individuals' livelihoods and well-being. They discuss how a lot of processed foods and snacks do not really offer the most nutritious options and can be high in fats, salt and sugar. They also talk about how many food producers struggle to make a good living from their labour and only receive a small fraction of what consumers actually pay for their products.

Activity 4 - Searching for new sustainability solutions and innovations

Objectives

This activity uses the SDGs Roulette game to stimulate learners to engage as a key actor in searching for sustainable solutions and innovations in their everyday lives and society around them. Learners are triggered to investigate and devise innovative and sustainable solutions to resolve relevant issues in today's society.

How the activity works

Steps 1 to 4 of this activity are the same as those for Activity 2 *(i.e., follow instructions from the previous page).*

5. All groups are allocated 5 minutes to confer and consider their viewpoint on the allocated theme.
The difference in this activity is the topic of discussion.
Groups are asked to conduct "blue-sky thinking" and should discuss the innovative solutions their actor could contribute to the selected theme.

6. The selected actor group then has 3 minutes to verbally present and comment.
The related actions are recorded on a board or chart.

7. The SDGs dial is then spun to identify a sustainable development goal.

8. All groups are allocated 5 minutes to confer as a group and consider **their viewpoint on how their actor could implement an innovative (or radical) solution to address the selected theme with the context of this sustainable development goal.**

9. The selected actor group then has 5 minutes to verbally present and comment.

10. Other groups are asked to contribute from **their actor perspective on what innovative solutions they can devise to address the allocated Lifestyle Theme and identified SDG,** and a group discussion explores this further.

11. If time allows, the activity is repeated in multiple rounds with different actors, themes and SDGs.

Example

Responsible Actors	Lifestyle Themes	SDG	Viewpoint on theme and links to SDG
GOVERNMENT	ENERGY	7 AFFORDABLE AND CLEAN ENERGY	Consider how the government can play a leading role in the development and implementation of innovative solutions for achieving affordable and clean energy for all.

The group presents on the government's ability to incentivise and direct changes within the energy sector through policies, regulations and funding. They discuss the example of renewable energy production quotas for electricity producers, as well as tax incentives for home installation of solar panels. They also consider how government can provide substantial funding for research and development within this sector.

Roll the Dice – SDGs Cubes

Roll the Dice – SDGs Cubes is a fast-paced game for encouraging critical reflection about the inter-relationships between the 17 goals and how our lifestyle choices influence these goals. It promotes strategic thinking and scenario thinking by investigating solutions and innovations for achieving sustainable development in our daily lives and in the world around us.

An important challenge in education for sustainable development is to create personal links and relationships with the "abstract" concepts of sustainable development. The SDGs provide a clear set of goals and targets for transforming our world, but the success of these goals will depend on individuals and communities around the world incorporating these principles into their daily activities. Education is an important means of implementation for sustainable development. It provides a construct where the perceived tensions between economic, social and environmental development can be harmonised and integrated into a single concept and pursuit. Education for sustainable development has a primary focus on enabling learners with the capacities and competencies to relate learned knowledge, skills and values towards addressing and coping with real-world challenges. The SDGs Cubes aim to provide a simple set of bridging activities between classroom learning and real-world application, and through this begin to strengthen learners' capacities for taking action in their own lives and in their communities around them.

Three activities are provided to be used with the SDGs Cubes. **Activity 5** looks at the connected relationships among the SDGs and works with problem-solving skills. In **Activity 6**, learners develop stories about more sustainable living patterns and actions. **Activity 7** challenges learners to more critically reflect on the relationship between their own lifestyle practices and the SDGs.

Resources Required

• These activities use the four SDGs cubes that are included in the toolkit. Each group needs one set of 4 cubes.
- Additional sets of cubes can be printed from the downloadable template file (see link on page 29).

• SDGs resource document – Learners may benefit from having access to additional materials on the SDGs. The SDGs cards on page 33 provide a basic resource. More detailed materials are available online, and several are highlighted in the resources section on page 29.

Activity 5 - Exploring interlinkages across the SDGs

Objectives

This activity stimulates learners to investigate the details of specific goals and to think systematically to identify the interlinkages and relationships between different goals. By considering forces of influence and using problem-solving skills, learners consider how challenges can be turned into probable solutions.

How the activity works

1. This activity can be undertaken by individuals or in pairs.

2. Each individual (or pair) takes turns rolling the 3 SDGs cubes. They should state and note down the three goals they will be working with.
*If the SDG colour ring is shown, then this cube should be rolled again.

3. Learners review materials on these goals and identify the important interlinkages between these goals. They should note or map out these linkages; mind maps or spider diagrams may be suggested as effective ways to do this.
10 minutes are given for this step.

4. Learners are asked to identify a challenge or problem that has impacts related to each of the 3 SDGs.
5 minutes are given for this step.

5. Learners take turns briefly presenting their challenge or problem. They should also explain how the interlinkages across the 3 SDGs are related with this? Do they reinforce or influence each other?

6. Learners are now asked to think about a possible action or intervention that would have a positive impact across all 3 SDGs and address the identified challenge/problem.
5 minutes are given for this step.

7. In a group discussion, learners take turns presenting their solutions. The solution is discussed by the group and expanded upon. How relevant is the solution; will it address the problem, will it strengthen efforts to achieve the three SDGs? How practical is the solution; can it be achieved, who would have to take action on it?

Photo: colourbox.com

Activity 6 - Creating stories of more sustainable living

Objectives

Through this collaborative activity, learners are supported to work together in addressing interconnections between SDGs. They formulate a shared explanation about responsible and sustainable living that is prompted by the SDGs.

Variation and progression

Initially, the game may be played with only one cube, and gradually as learners progress in their understanding of SDGs, the second and third cubes may be added.

Additional materials

- Worksheet with a ring representing all 17 SDGs (available in downloadable file, see link on page 29)
- Short descriptions of all SDGs (available on page 33)
- A set of photographs (sample pictures are provided on page 31)

How the activity works

1. Learners are divided into groups of 4-5 students. (The ideal would be a maximum of 5 groups in total).

2. Place a set of pictures connected to responsible and sustainable living (e.g., nutrition, clothing, housing, transport, leisure activities, etc.) on the table so that all groups can see and examine them. *The selection and number of pictures depends on the theme and available time for the activity.

3. Invite groups to study what each of the SDGs on the six sides of each cube represent (using one, two, or three cubes at a time).
*Short descriptions of each SDG is available on page 33.

4. Next, the learners start playing the game by making stories about the pictures and inspired by the SDGs.
*Alternatively: the SDGs can also be presented by a teacher or facilitator.

5. In each group, one player rolls the three SDGs cubes. The group with the highest SDG number starts.

6. Then the first group rolls all three cubes. Based on the result on the three cubes, they freely choose one picture.

7. Invite them to explain to the other groups their understanding of the selected SDGs and how they are related to the picture. The group of learners is allowed maximum 3 minutes to explain (using one, two, or three cubes at a time) the SDGs and the picture. They can integrate SDGs into the story in different ways, e.g. sequentially or in an integrated way referring back and forth to the goals. If the group successfully explains the relation between the picture and all three SDGs, they get three points (with two SDGs gets two points and with one SDG gets one point).

8. After the group completes the explanation, the selected picture is removed from the set and the next group clockwise continues the game.

9. The game is played until all pictures have been used. The group with the highest number of collected points wins the game.

10. Invite each group to present and discuss further their most interesting story with the class.

Example

Learners explained that while driving a car we contribute to greenhouse gas emissions, so we need to find more sustainable solutions to combat climate change. Better urban infrastructure can contribute to this, which will increase the accessibility of public transport, more space for pedestrians and cyclists. Car sharing services are also being promoted in cities. Also important are new innovations in the automotive industry that will help reduce fossil fuel consumption.


Photo: colourbox.com

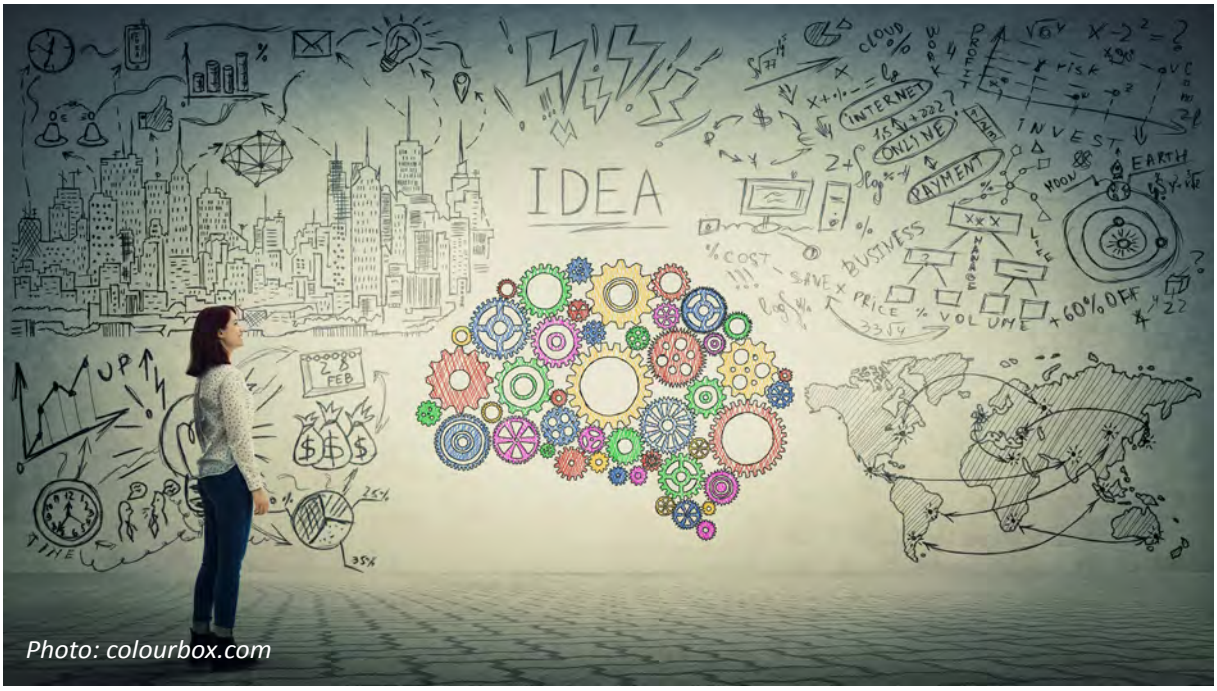

Photo: colourbox.com

Activity 7 - Linking lifestyles practices with the SDGs

Objectives

This activity aims to provide a quick-thinking exploration of the links between lifestyle practices and the SDGs so learners may gain a deeper understanding of what a sustainable lifestyle might constitute.

How the activity works

1. Learners are divided into groups of 4-5 students. One group round of the activity will take about 15-25 minutes; if more time is available the activity can include more than one round.

2. One learner begins by rolling the three cubes with the SDGs icons.
*If the SDG colour ring is shown, then this cube should be rolled again.

3. The learner then rolls the sustainable lifestyles cube and reads the category that is shown. *If the sustainable lifestyles wild card is rolled, then any of the lifestyle categories may be used.

4. The learner must think of an action that he/she could take in his/her daily life related to the lifestyle category shown and link that action to one of the shown SDGs. Learners are challenged to not only consider the impacts of their own lifestyles, but also to think about how actions taken can benefit the achievement of the SDG in the global context.

5. The learner introduces the personal action and explains how this would have a positive benefit for the selected SDG. The group discusses the proposal, and they may consider and debate the merits of different options.

6. The SDG selected in the previous step is now set aside. The learner then rolls the sustainable lifestyles cube again and links the lifestyle category shown to one of the two remaining SDGs in the same way as described previously. This is also presented and then discussed by the group.

7. The second SDG selected is now set aside, and the learner continues the process with the remaining SDG. Again, this is presented and then discussed by the group.

8. Pass the Dice: After the first learner has completed his/her round, the cubes are passed to the next learner who then carries out the same steps. This continues until all learners have received a turn.

** Bonus challenge: is it possible to link one action to all three goals?*

Example

- Start by rolling the three SDGs cubes.
- Next roll the Sustainable Lifestyles cube.

What we do for fun?

- Link the lifestyles cube with one SDG, and select an action you can take relevant to this goal.

"I can start a youth fitness club to promote good health practices."

What we buy and use?

- Set the previous SDG aside, and roll the lifestyles cube again.

"I will stop buying disposable products and reduce the items I throw away that are still usable."

Extension Activities

Activity 8 - Exploring the interconnectedness of people around the world in Social Science

Objectives

Through the World Café Method (Elvekrok & Haugland Smith, 2013), learners are encouraged to explore the interconnectedness between people across the world in the subject of Social Science. Different themes can be discussed, but they should all be themes that fit naturally within the subject of Social Science.

How the activity works

1. Create small tables within your classroom. Provide each table with coloured markers and a large white sheet of paper (2 x A3 sheets or a flip-over sheet).

2. Make the tables look like a real Café by providing something to drink for the learners.

3. Divide the class in groups of 5 and explain the activity thoroughly so the learners are aware of what is expected and what is to be achieved. All participating learners will discuss the same topic with different questions.

4. Each table should identify a "table host" that stays at the table throughout the entire exercise. The role of the table host is to make sure that everyone around the table gets a chance to speak and to sum up what was said at the end of the round. The table host also informs the new group of what the previous group discussed.

5. All points of view and other discussed areas and topics are written down on the sheet of paper that is on each table.

6. After 5 or 10 minutes of discussing, the learners rotate to the next table. This is done, until all groups have visited all the tables.

7. Once all learners have visited all the tables in the room, they return to their first table. Here the learners discuss with each other what they have learned at the other tables and if they have gained new insights into the theme under discussion.

8. The exercise ends with each table presenting their sheet of paper in plenary and what they have learned from the exercise.

Examples of critical questions:

- How can we end poverty and hunger?
- Why is indigenous knowledge so important for our planet? How can we protect indigenous knowledge?
- How can we foster children's rights?
- How do refugees fleeing from their countries due to war and environmental crisis affect the rest of the world?
- How can we foster tolerance for each other?
- Do you identify yourself as a global citizen? Why?

Activity 9 - Moving forward, backward or standing still? Exploring statistics in Mathematics

Objectives

Each nation has promised to provide regular reviews of the progress made towards the achievement of Agenda 2030. These reports are called "Voluntary National Reviews" (VNR's) and assess developments in relation to the SDG's and their targets.

How the activity works

1. Identify when your country has submitted their most recent VNR to the High-Level Political Forum (the U.N. General Assembly's coordinating body for Agenda 2030). Locate a copy of that report online, by selecting the specific country from the following list: https://sustainabledevelopment.un.org/vnrs/

2. According to the VNR, in relation to which SDG has your country made the greatest progress?

3. According to the VNR, in relation to which SDG has your country made the least progress?

4. Compare the statistics with information about progress made in connection with the same SDG's in a neighboring country by referring to their most recent VNR.

5. Discuss if and why there are differences? What might be the reason for the differences?

6. Make a list of suggestions as to how you think progress could be improved in your country in relation to the SDG which has had the least improvement.

Activity 10 - Exploring how and why oceans are running out of oxygen as temperatures rises in Geography and Biology

Objectives

Narratives is a method that can be used to start discussing and reflecting upon a topic. The chosen text on the following page relates closely to the subjects of Geography and Biology. It raises a number of critical reflections and different points of view to approach the topic of how we can protect our planet from degradation.

How the activity works

1. Print out the text excerpt "Oceans running out of oxygen" on the next page and share with the class. Each learner receives one copy.

2. Each learner reads the text individually. They should then explore the source of this information. Is it a reliable source? How can we know if a source of information is reliable?

3. Together with the teacher, the class can discuss in plenary if they think the source is reliable or not.

4. The learners now sit together in pairs. The teacher continues the activity by asking critical questions in relation to the text and how this connects to the five overarching themes of the SDGs which are the 5Ps described at the beginning of this toolkit (page 6). Learners discuss this in pairs.

5. The activity ends with each pair sharing their reflections in plenary.

Examples of critical questions:

- What will happen to our oceans if we are unable to curb greenhouse gas emissions and nutrient pollution from agriculture?
- How can sustainable production and consumption contribute to our oceans becoming less acidic?
- How can we sustainably manage our resources?

Photo: colourbox.com

Oceans running out of oxygen

While nutrient run-off has been known for decades, researchers say that climate change is making the lack of oxygen worse. Around 700 ocean sites are now suffering from low oxygen, compared with 45 in the 1960s. The threat to oceans from nutrient run-off of chemicals such as nitrogen and phosphorus from farms and industry has long been known to impact the levels of oxygen in the sea waters and still remains the primary factor, especially closer to coasts. However, in recent years the threat from climate change has increased. As more carbon dioxide is released enhancing the greenhouse effect, much of the heat is absorbed by the oceans. In turn, this warmer water can hold less oxygen. The scientists estimate that between 1960 and 2010, the amount of oxygen dissolved in the oceans declined by 2%. That may not seem like much as it is a global average, but in some tropical locations the loss can range up to 40%. Even small changes can impact marine life in a significant way. Therefore, waters with less oxygen favour species such as jellyfish, but is not so good for bigger, fast-swimming species like tuna. According to the authors of the research, these animals are starting to move to the shallow surface layers of the seas where there is more of oxygen dissolved. However, this makes the species much more vulnerable to overfishing.

“Not only has the decline of oxygen quadrupled in the past 50 years but even in the best case emissions scenario, oxygen is still going to decline in the oceans.” said Minna Epps from IUCN.

If countries continue with a business-as-usual approach to emissions, the world’s oceans are expected to lose 3-4% of their oxygen by the year 2100. This is likely to be worse in the tropical regions of the world. Much of the loss is expected in the top 1,000m of the water column, which is richest in biodiversity.

Low levels of oxygen are also bad for basic processes like the cycling of elements crucial for life on Earth, including nitrogen and phosphorous. “To stop the worrying expansion of oxygen-poor areas, we need to decisively curb greenhouse gas emissions as well as nutrient pollution from agriculture and other sources.”

INTERNATIONAL UNION FOR CONSERVATION OF NATURE, 2017.

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Digital Resource Materials

CCL supporting materials for the toolkit are available for download:
http://play4future.livingresponsibly.org/

Transforming our World: The 2030 Agenda for Sustainable Development
https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

About the Sustainable Development Goals
https://www.un.org/sustainabledevelopment/sustainable-development-goals/

Resources for communicating the SDGs (icons and logos)
https://www.globalgoals.org/resources

Sustainable Development Goals fact sheet
https://www.un.org/sustainabledevelopment/wp-content/uploads/2015/08/Factsheet_Summit.pdf

A guide to SDG interactions: From Science to Implementations
https://council.science/wp-content/uploads/2017/05/SDGs-Guide-to-Interactions.pdf

Student resources on the SDGs
https://www.un.org/sustainabledevelopment/student-resources/

Resources for educators on the SDGs
https://en.unesco.org/themes/education/sdgs/material

SDGs illustrated on the UN Headquarters building in New York City
Credit: UN Photo/Cia Pak

Sample pictures on responsible and sustainable living

Playing for the Future
Sustainable Development Games

Playing for the Future
Sustainable Development Games

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Sustainable Development Games

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Sustainable Development Games

Cards with short descriptions of the SDGs

	End poverty in all its forms everywhere.
	End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
	Ensure healthy lives and promote well-being for all at all ages.
	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
	Achieve gender equality and empower all women and girls.
	Ensure availability and sustainable management of water and sanitation for all.
	Ensure access to affordable, reliable, sustainable and modern energy for all.
	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
	Reduce inequality within and among countries.
	Make cities and human settlements inclusive, safe, resilient and sustainable.
	Ensure sustainable consumption and production patterns.
	Take urgent action to combat climate change and its impacts.
	Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
	Strengthen the means of implementation and revitalize the global partnership for sustainable development.
	


Playing for the Future
Sustainable Development Games

Centre for Collaborative Learning for Sustainable Development

The Centre for Collaborative Learning for Sustainable Development (CCL) is a research and learning centre based at Inland Norway University of Applied Sciences. The Centre holds the UNESCO Chair on Education for Sustainable Lifestyles and coordinates the associated International Partner Network. CCL aims to contribute to national and international projects on education for sustainable development and to strengthen partnerships on this topic. The University has over 20 years experience coordinating international research collaboration on consumer education and education for sustainable lifestyles.

The Centre works to advance knowledge at all levels of society, from the classroom to national and international levels. CCL promotes active learning approaches and produces educational toolkits on topics including consumer issues, sustainable lifestyles, and social learning. The Centre supports policy development and provides curriculum guidance. By participating in public debates, CCL aims to strengthen collective commitments and provide new knowledge for the identification of pathways to sustainable living. The Centre contributes to the implementation of the Sustainable Development Goals, and is an active partner in international programmes including the Global Action Programme on Education for Sustainable Development (led by UNESCO) and the 10 Year Framework of Programmes (10YFP) on Sustainable Consumption and Production (coordinated by UN Environment).

The Partnership for Education and Research about Responsible Living (PERL) is a network of educators and researchers developing methods and materials to encourage people to contribute to constructive change through the way they choose to live. PERL partners research social innovation and responsibility; give visibility to creative communities that collaboratively invent new ways of living; promote education for sustainable development, especially for sustainable lifestyles; develop teaching methods and materials; provide reference and guidance; develop values-based indicators; and produce policy recommendations on education for sustainable lifestyles. PERL is a network of universities from around the world.

More teaching materials and resources are available at:
http://pubs.livingresponsibly.org

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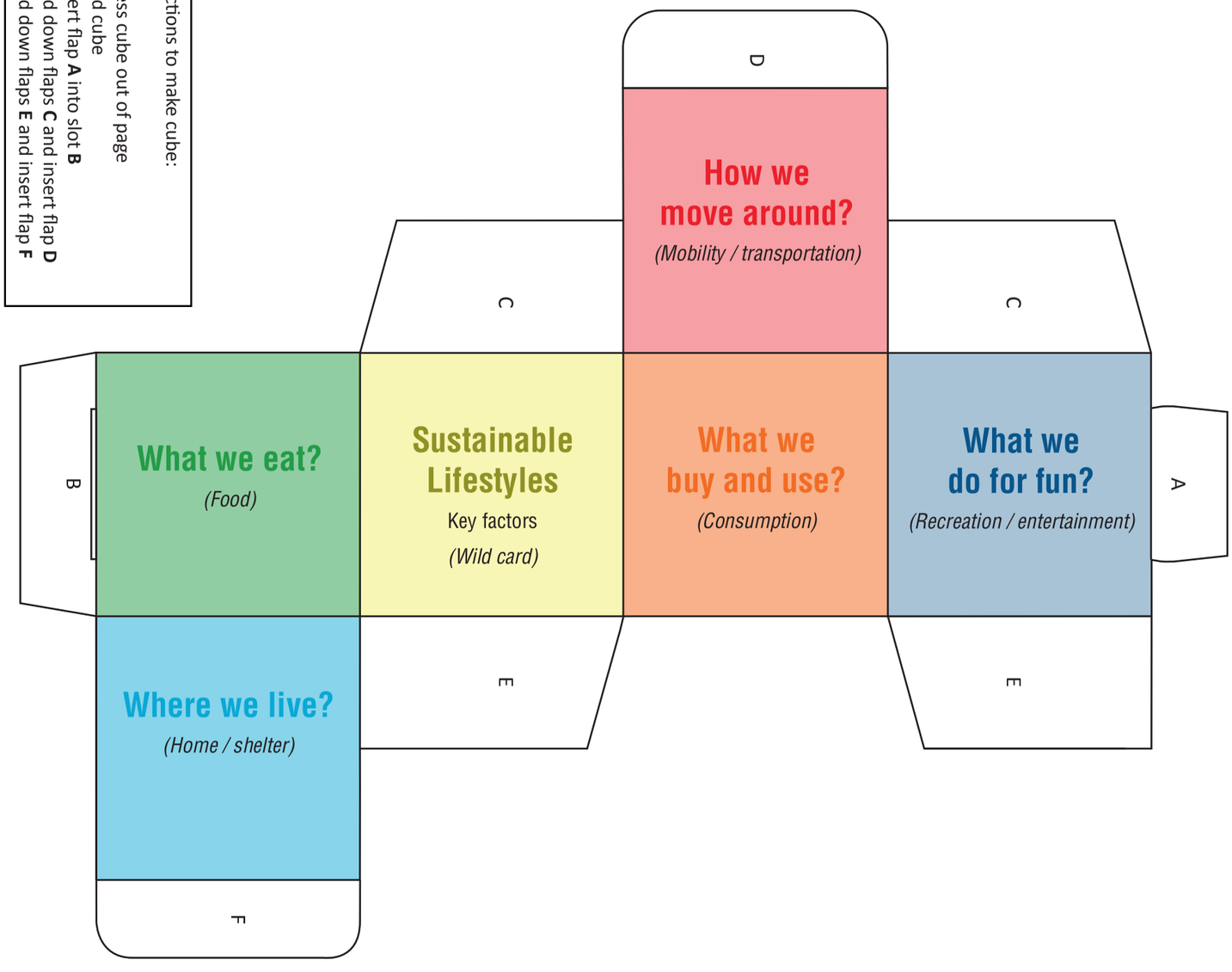
PERL

Intructions to make cube:

1. Press cube out of page
2. Fold cube
3. Insert flap **A** into slot **B**
4. Fold down flaps **C** and insert flap **D**
5. Fold down flaps **E** and insert flap **F**

Intructions to make cube:

1. Press cube out of page
2. Fold cube
3. Insert flap **A** into slot **B**
4. Fold down flaps **C** and insert flap **D**
5. Fold down flaps **E** and insert flap **F**



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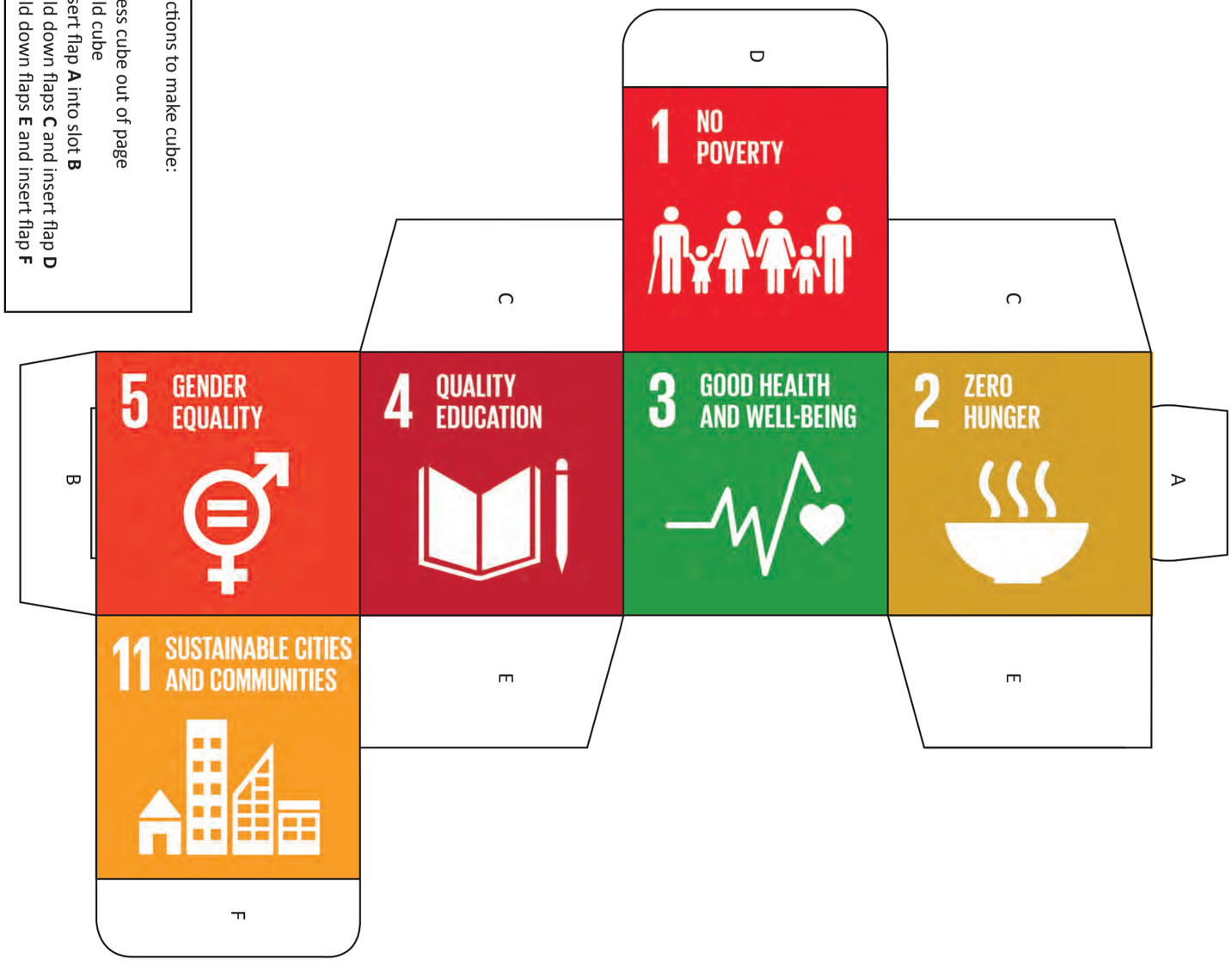

Intructions to make cube:

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SDGs Responsibility Roulette

LIFESTYLE THEMES

RESPONSIBLE ACTORS

SUSTAINABLE DEVELOPMENT GOALS

Instruction for use:
Start by removing the center three pages. Put aside the pages with the four SDG Cubes for later usage. Remove the lower section and press out the arrows. Follow the instruction to the right to attach the three spinner arrows each with a paper clip. The longer arrow is for the SDG wheel.
Tip: If you want to use the gameboard multiple times, you may prefer to laminate.

Instructions for attaching spinner arrows with paper clips.