CURRICULUM HANDBOOK

EDUCATION FOR SUSTAINABLE DEVELOPMENT IN EDUCATIONAL PROCESSES: APPROACHES AND METHODS

The international Erasmus+ project ”Methods for ESD – competencies and curricula” (MetESD), No.2015-1-DE-02-KA202-002346 lead by Vechta University

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CONTENT

INTRODUCTION

By implementing the project, the evaluation of participants' various experiences in the field of education for sustainable development, it was found that this is desirable to view education for sustainable development (ESD) in a wider context as a joint approach. This approach involves not only reorienation of the content and methods towards sustainability but also the whole infrastructure of the educational establishment as well as to develop a cooperation with all the stakeholders who are involved in implementing sustainability ideas in practice.

Within the framework of this project we have made the first steps into a direction of ESD, by developing a deeper understanding of sustainable education, education for sustainable development, and evaluation of educational programs in the context of sustainability in vocational education.

Active participation in the project helped the administration and the teachers to understand better a future vision, by learning that the school is a research laboratory for diverse actors in solving social, economic, political, cultural and environmental problems, that allows to think and to act as well as to change one's habits and a lifestyle. This handbook also contributes to the approach of integrating sustainable development into education and integrating education into sustainable development which is crucial for a successful implementation of the Global Action Programme (GAP) which has set two main objectives: (1) “to reorient education and learning so that everyone has the opportunity to acquire the knowledge, skills, values and attitudes that empower them to contribute to sustainable development” and (2) “to strengthen education and learning in all agendas, programmes and activities that promote sustainable development” (UNESCO, 2014).

In order to reach sustainable development goals (SDG), the use of recommended key methods for teaching and learning have been emphasized in current methodological and educational documents, and it is essential to use the principles of action-oriented transformative pedagogy (UNESCO, 2017) which requires the use of competences that align with the twenty-first century skills, non-cognitive skills, which include communication, digital literacy, problem solving, team work and entrepreneurship (UNESCO, 2015). Some examples of key methods for teaching sustainable development issues have been offered in the second and third part of the handbook, e.g., case studies, modelling, future workshop, systems games, etc.

The handbook **“Education for Sustainable Development in Educational Processes: Approaches and Methods”** offers to develop a deeper understanding of ESD approaches, competencies and activities that are developed and described in the cases of good practice.

References

UNESCO (2017). Education for sustainable development goals. Learning objectives. Paris: UNESCO Publication. Retrieved from http://unesdoc.unesco.org/images/0024/002474/247444e.pdf

UNESCO. (2015). Rethining education. Towards a global common goal ? Paris: UNESCO Publishing. Retrieved from http://unesdoc.unesco.org/images/0023/002325/232555e.pdf

UNESCO. (2014). UNESCO Roadmap for implementing the Global Action programme on Education for Sustainable Development. Paris: UNESCO. Retrieved from http://unesdoc.unesco.org/images/0023/002305/230514e.pdf

PART I

DEFINING SUSTAINABILITY AND SUSTAINABILITY COMPETENCES

The authors of the MetESD project, as well as all involved stakeholders emphasize that ESD needs to be seen in wider contexts. The whole school approach or the whole institution approach is one of the ways to integrate the issues of sustainability and sustainable development in all areas of the school life, including management, teaching and learning process, curriculum development, staff capacity building, day-to-day activities, etc. The whole institution approach is also set as a priority action area for a successful implementation of the Global Action Programme (UNESCO, 2014).

Research by Swayze, Buckler & MacDiamid (2016) indicates to five main approaches towards ESD.

Sustainability and Education Academy (SedA) identifies the following five key domains as part of the whole division approach to ESD:

1. Governance. Divisions govern taking a systemic approach to implementing sustainable development, focusing on the following:

- priority in division strategic plan
- board and policy development
- committees
- budget
- community partnerships
- evaluation and monitoring.

2. Curriculum, teaching, and learning. Students acquire and demonstrate the knowledge, skills, attitudes, and life practices that contribute to a sustainable future:

All subject areas include a cross-curricular focus of ESD. Project-based learning focuses on ESD. Pedagogy focuses on systems thinking, inquiry, active learning, futures thinking, and problem solving from a local and global perspective. Connections to student engagement, citizenship, and relevance are made. Opportunities exist to engage parents and the community in the practice of ESD principles.

3.Human capacity building. Human resources policies, practices, and development plans are aligned with sustainable development principles.

- Professional development is provided for professional and support staff.
- ESD resources are provided for teachers.
- ESD practices are profiled and recognized.
- Succession planning (e.g., leadership development) is undertaken.
- A staff wellness plan is developed and implemented.

4. Facilities and operations. Sustainability principles are adopted and demonstrated. Facilities:

- Sustainability principles are applied to the design, construction, and renewal of school buildings, including innovative financial models.
- Schools structures and outdoor spaces are “facilities that teach” sustainability practices.

Operations:

- Sustainability principles apply to all aspects of school management, procurement, and resource use.
- Sustainability principles apply to transportation decisions.
- Audit tools are used to assess impacts and improve efficiencies.

5. Partnerships. Schools involve parents and community with ESD initiatives.
Parent and Community Partnerships:

- Parents and community are actively engaged to address local sustainability issues through community projects and partnerships.

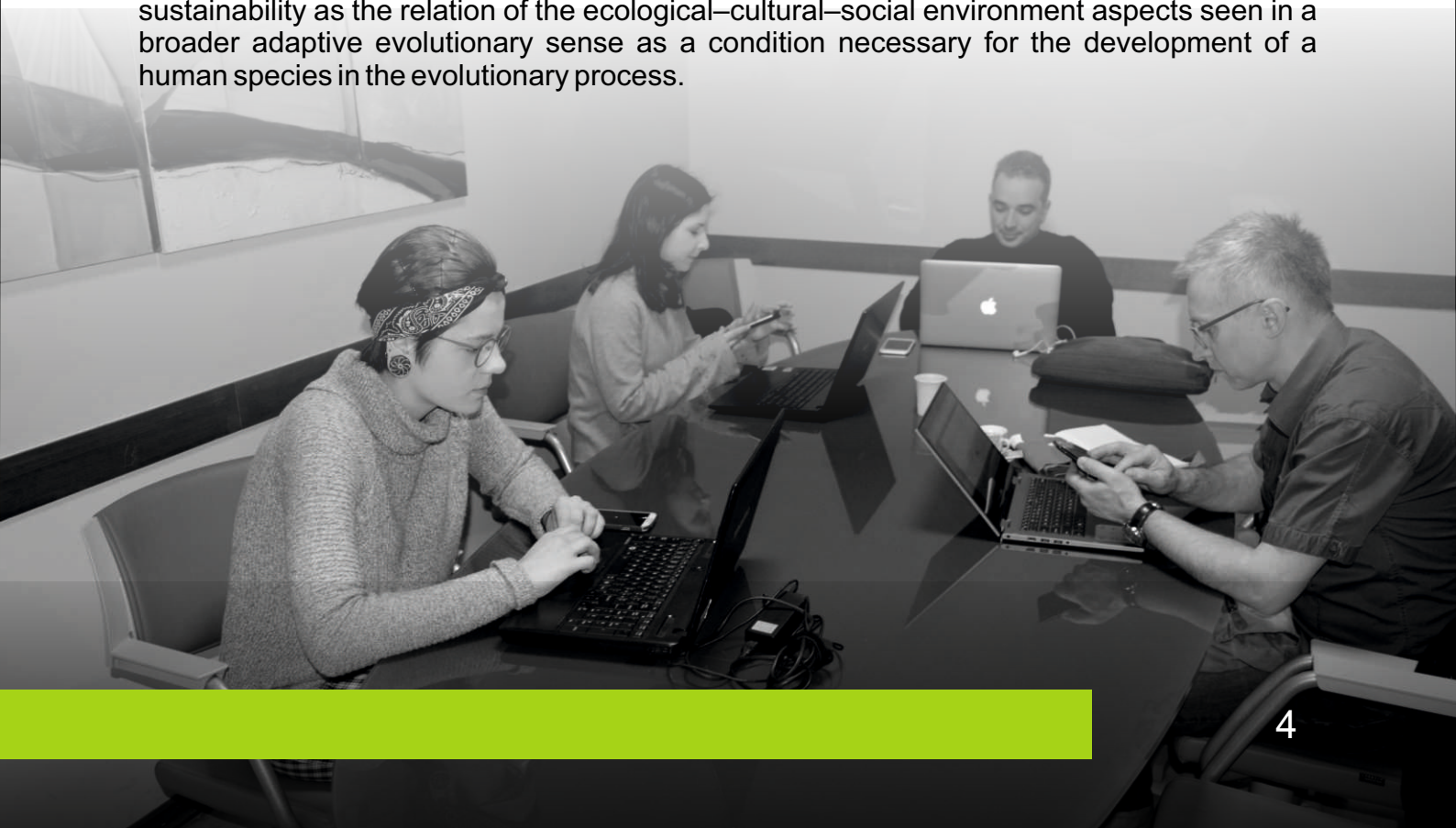
Learning:

- Cooperative education supports ESD partnerships with the community.
- Opportunities exist to engage parents and the community in the practice of ESD principles.

Implementation of the project has been based on the second aspect of sustainability, enrichment of educational programs, still the mission of ESD is a well being in the future.

The whole school approach requires a strategic and united vision which provides an involvement of all available resources at a particular setting. There is also an urgent need to think about the role of education towards developing sustainable thinking skills and other human qualities to achieve sustainable development goals. As it is declared in one of the recent UNESCO publications: “ESD is holistic and transformational education that addresses learning content and outcomes, pedagogy and the learning environment. Thus, ESD does not only integrate contents such as climate change, poverty and sustainable consumption into the curriculum; it also creates interactive, learner-centred teaching and learning settings. What ESD requires is a shift from teaching to learning. It asks for an action-oriented, transformative pedagogy, which supports self-directed learning, participation and collaboration, problem-orientation, inter- and transdisciplinarity and the linking of formal and informal learning. Only such pedagogical approaches make possible the development of the key competencies needed for promoting sustainable development”.(UNESCO, 2017, 7)

We would like to invite educators to challenge themselves and look at some current theories which include theories of generations, methods and approaches towards ESD. The offered article is a result of the researchers' team work which was developed in Latvia. The article “Education for Sustainable Development: The choice of pedagogical approaches and methods for the implementation of pedagogical tasks in the Anthropocene age” (Fedosejeva et al., 2018) offers a broader and a more comprehensive and a holistic framework how to view sustainability as the relation of the ecological–cultural–social environment aspects seen in a broader adaptive evolutionary sense as a condition necessary for the development of a human species in the evolutionary process.



ABSTRACT

Sustainable education and education for sustainable development (ESD) have witnessed a deserved number of research studies in the recent years. The present article proposes a holistic research framework for the research on sustainable education and education for sustainable development in the 21st century. The article aims to choose a more holistic research perspective by avoiding a piecemeal approach in education research. Moreover, it proposes some strategically important ideas about the use of approaches and methods for sustaining the generational readiness for sustainable development. The paper proposes a general framework for pedagogy and practice for ESD research which is open, holistic, strategic, sustainable, and integrated. A broader perspective has been developed as the relation of the ecological–cultural–social environment aspects seen in a broader adaptive evolutionary sense as a condition necessary for the development of a human species and the development of these conditions in the evolutionary process. The choice of a broader perspective is proposed by relating it to an observational study on Generation Z that many educators, social scientists and the populations have already started recognising as one of the participants in the intergenerational process. The phenomenon of Generation Z is new; its features have not fully revealed in their apparent form, yet. Furthermore, the generation has not reached its maturity yet, but the development of this phenomenon is inextricably related to the issue of generational commitment, which is also related to the evolutionary development. The observational study has been carried out by involving participants from VECC Daugavpils Vocational School. The evaluation of the participants' real experience in a wider and broader framework has been used to draw strategic conclusions, which will help keep focus on the need to sustain generational readiness for sustainable development in the harmonisation of the choice of pedagogical approaches and methods.

For a more detailed overview we offer an original abstract here in the handbook, but the whole text of the article can be accessed here:
https://www.degruyter.com/downloadpdf/j/jtes.2018.20.issue-1/jtes-2018-0010/jtes-2018-0010.pdf

Table 1. Key competences for ESD

Dimensions / Competence	Knowledge	Skills	Attitude
Issues competence	About vocational fields related to ESD	Working with methods and instruments	Global learning Green economy saving environment
Social competence	Communication, teamwork	Solving conflicts Steering dialogues	Open-mindness Empathy Solidarity
Self competence	Personality, emotion behavior	Designing own life- and carreer curriculum	Courage and heart authenticity
Design competence	About process designing structure building	Designing processes and products	Dealing with variety and difference entrepreneurship

We have developed a framework of the competences which include description of particular knowledge, skills and attitude. This framework can be used by educators while planning ESD activities which include aspects of issue competence, social competence, self competence and design competence.

References

Fedosejeva, J., Boče, A., Romanova, M., Iliško, Dz., & Ivanova, O. (2018). Education for Sustainable Development: The choice of pedagogical approaches and methods for the implementation of pedagogical tasks in the Anthropocene age. Journal of Teacher Education for Sustainability, 20(1), pp. 157-179. Retrieved from doi:10.2478/jtes-2018-0010

Swayze, N., Buckler, C., & MacDiarmid, A. (2016). Guide for sustainable schools in Manitoba. 2nd edition. IISD Publications. Retrieved from http://www.edu.gov.mb.ca/k12/esd/pdfs/sustainable_guide.pdf

UNESCO (2017). Education for sustainable development goals. Learning objectives. Paris: UNESCO Publication. Retrieved from http://unesdoc.unesco.org/images/0024/002474/247444e.pdf

UNESCO. (2014). UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development. Paris: UNESCO. Retrieved from http://unesdoc.unesco.org/images/0023/002305/230514e.pdf

PART II

GOOD PRACTICE EXAMPLES IN IMPLEMENTING ESD: SUMMARY OF THE METHODS/ GUIDELINES

By describing the cases of good practice, the participants of the project have discovered that implementation of ESD in educational processes is not as simple as it seems. Many teachers are excellent implementers of ESD ideas therefore they are the best experts how to teach sustainability issues to their students not only to reflect theoretically.

In this part of the book there are offered methods that can be an inspiration and guidelines how those methods can be used in different contexts. This is essential to understand the aims of ESD which they are trying to reach.

In implementing ESD the most essential is the aim and a holistic understanding of perceiving a person as a holistic being in the process of evolutionary changes. Therefore, implementation of ESD in educational programs is a creative process where all components: knowledge, emotions, and action are equally important.

The 2030 Agenda for Sustainable Development sets an imperative of paradigm shift towards a more sustainable way of development. Education is the key to the achievement of 17 Sustainable goals, at particularly the 4th aim that relates to education directly. New curriculum framework requires system thinking, new ways of delivery of curriculum, integration of diverse forms of knowledge, learning core sustainability competencies, enhancing individual and collective competency, developing values of inclusion and tolerance.

Designing a sustainable curriculum requires system thinking, identification of interdependencies. According to a sustainability curriculum framework the learning process at school need to be aimed at developing sustainability competencies for shaping one's personal and professional life, active involvement in a transformation of the society towards a sustainable development. Sustainable curriculum framework is based on integrative understanding of competency. Curriculum should explicitly focus on sustainable development. Sustainable curriculum offers transformative education that is learner centered with a strong focus on developing critical thinking skills, that prepares students to deal with complex issues and to develop competencies that help them to make decisions, to envision a better future, to develop system thinking (understand the connection between political, economic, ecological, social and culture systems), and develop partnerships for making a sustainable change. Curriculum need to help learners to become responsible and caring citizens capable of building just society.

Curriculum involves sustainable strategies, the use of active, reflective, and participative learning strategies, equip with decision making strategies. Sustainable curriculum design is based on values of sustainability that are embedded through a whole school approach, in its holistic and integrated design. In a sustainable curriculum design connection among local, regional and global aspects is essential to understand the relevance of the issues that are being investigated. Curriculum changes, changes of methods and strategies has received much of attention both at the international and a local scale of project partner institution countries.

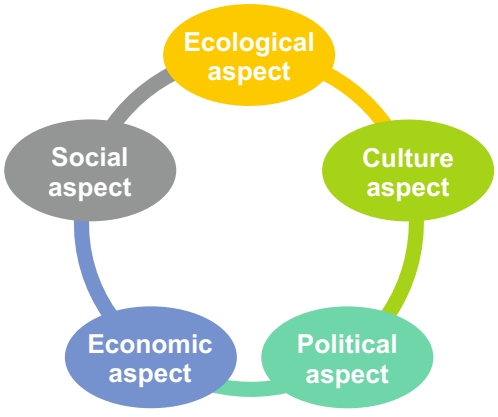
WALKING TOUR IN THE CITY CENTRE

Vocational Education Competence Centre "Daugavpils Technical School", Latvia

Key ESD competencies:
Design competency;
Social competency;
Issue compenency;
Self competency

INTEGRATION INTO STUDY PROGRAMS:
1. Automechanics (AM)
2. Automechanics(AME)
3. Dressmaker (DR)
4. Technician of programming (PR)
5. Technician of computer systems (DT)
6. Track technician (SC)
7. Electrician (EM)
8. Locomotive technician (L)
9. Locomotive technician (LE)
10. Transport operator for commercial transport (TT)
11. Hairdresser (FR)
12. Vehicle wagon technician (V)
13. Customer service specialist (KS)
14. Metalworker (VA)
15. Rail traffic organization and traffic safety technician (KV)

Integration in subjects:
Class hours; History



Aims: to introduce students to the city and its history; to create understanding about the ways of spending time actively and possibilities to do sport in the city.

The tour is designed for students who have just started studying at the technical school, come from other towns and live in the students' dormitory.

DESCRIPTION:

Version 1: Tours are often used in the lessons of history, however the teacher links lessons of history to the opportunity to learn more about the possibilities to rest in the city. The teacher wants students to use the obtained information in planning their own rest.

The tour starts at St. Peter's Church and continues in the centre of the city. The focus is on the city's history during 19th and 20th century. Students have the possibility to learn about the churches (St. Peter's Church, St. Alexander Nevsky Church), history of the Unity Square during the Russian Empire, during the times of the Republic of Latvia and during the existence of the Soviet Union. The tour continues with learning about the history of the city tram. Students visit two parks: the Dubrovin Park and Andrejs Pumpurs Public Garden. It is important to show students where they can spend their free time, thus they visit Daugavpils Regional and Art Museum, the theatre and the cinema. Leisure activities are important for teenagers, thus during the tour they can learn about Daugavpils Ice Hall, Daugavpils Olympic Centre, Bowling and the areas for leisure activities in the Esplanade Rest Park. Similar tours can be applied at any educational establishment, in order to not only attract students' attention to knowing the history, but also in order to contribute to their spiritual and leisure activities.

Version 2: Another version of the method that can be implemented at a later stage of the studies. Students can be asked to explore all or at least some organizations that are located on the main street and find out what is their contribution for a sustainable development of the city including social, ecological, economic, political and culture aspects.

MODEL METHOD

Vocational Education Competence Centre "Daugavpils Technical School", Latvia

Key ESD competencies:
Design competency;
Social competency;
Issue compenency;
Self competency

INTEGRATION INTO STUDY PROGRAMS:
1. Automechanics (AM)
2. Automechanics (AME)
3. Rail traffic organization and traffic safety technician (KV)
4. Track technician (SC)
5. Locomotive technician (L)
6. Locomotive technician (LE)
7. Vehicle wagon technician (V)
8. Electrician (EM)
9. Transport operator for commercial transport (TT)
10. Metalworker (VA)

Integration in subjects:
Class hours; Safety-at-work and environmental protection

The aims of the method are: to assist students in creation of ESD value base; to develop students' creativity, system thinking, green thinking, activity in open system conditions, communication/cooperation, self-evaluation and future planning skills.

DESCRIPTION:

The main expected result is not connected with the exact key competences directly; it should be indirect. It helps to prepare the base for Education for Sustainable Development (ESD). Using this method, we expect increasing of students' learning and self-development motivation, by means of ESD values incorporation into their minds. This process is followed by the obtained skills and competences.

1. Students choose a segment (A4) of the map with some landscape including some topographical and structural key points like rivers, some roads, ancient buildings, etc.

2. The first task is to create (to draw) and to present their own city.

3. Next step – city evaluation. Students with their teacher formulate the criteria of city evaluation (the following issues can be considered – safety, energy sources and environment, city income and job opportunities, social health and health care availability). After group discussions the students choose the most attractive city. According to this new information student can restructure their cities.

4. Problem solving. Students should solve some extra problems: forest fires, floods, epidemics, economic crisis, criminal conflicts, refugee problems, lack of money in a city budget, etc. At this stage students are pushed to find the necessity of cooperation with neighbours.

5. Regional cooperation, specialization and development. Students use the advantages of regional cooperation.

6. Regional presentation, joint map creation.

7. Definition of the effective city key-points/features.

8. Transfer Macro-attitudes to micro – i.e. , personal level: analysis of self-development resources, methods and directions.

9. Personal "road map", self-development plan creation.

During all these stages a teacher monitors the process and plays the role of an assistant giving some prompts or additional information.

MAKING A PROJECT

Vocational Education Competence Centre "Daugavpils Technical School", Latvia

Key ESD competencies:
Design competency;
Social competency;
Issue compenency;
Self competency

INTEGRATION INTO STUDY PROGRAMS:

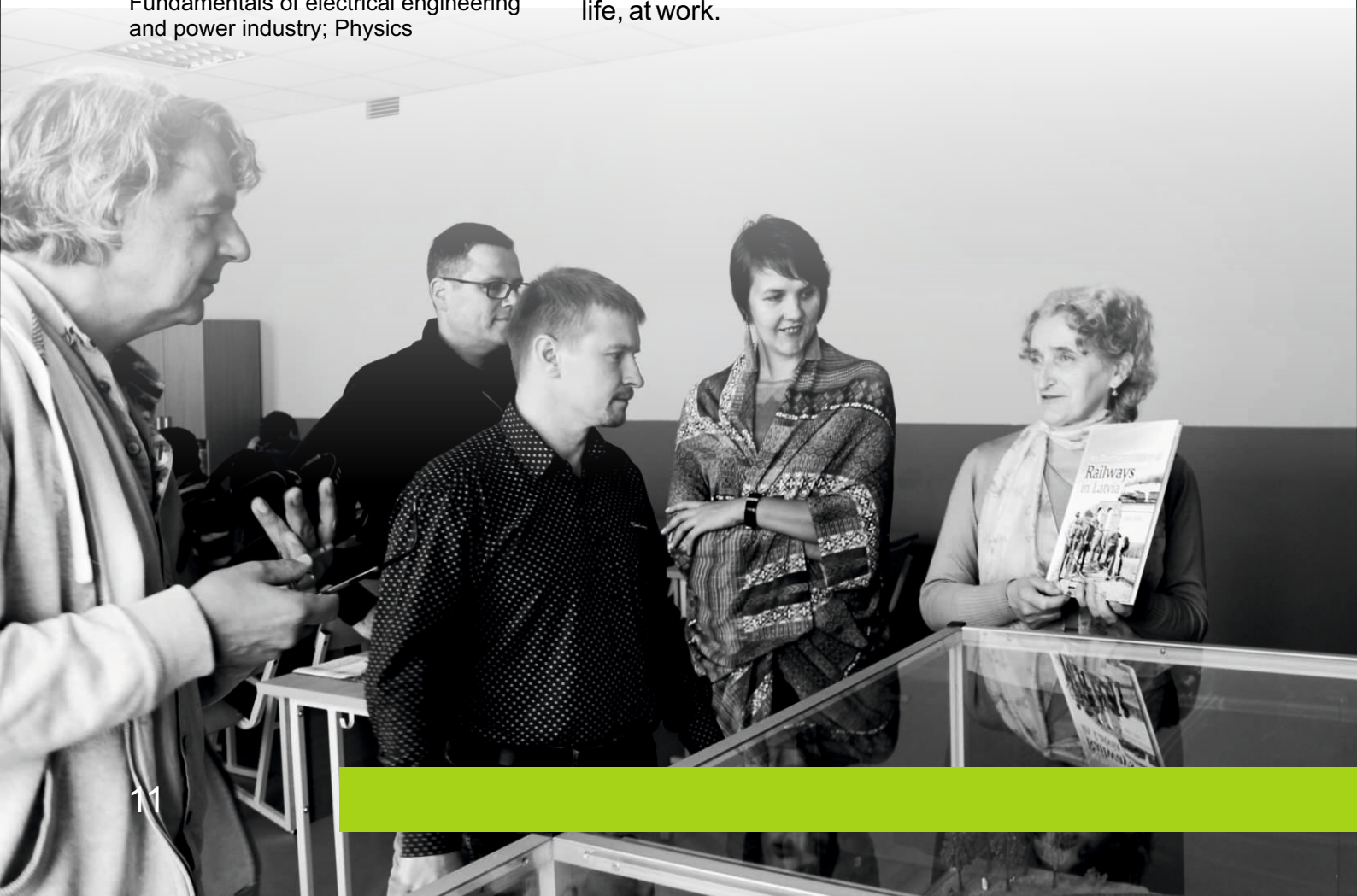
1. Automechanics (AM)
2. Automechanics (AME)
3. Rail traffic organization and traffic safety technician (KV)
4. Track technician (SC)
5. Locomotive technician (L)
6. Locomotive technician (LE)
7. Vehicle wagon technician (V)
8. Electrician (EM)
9. Transport operator for commercial transport (TT)
10. Metalworker (VA)

Integration in subjects:
Fundamentals of electrical engineering and power industry; Physics

Aims: develop thinking approach and ability to make decisions and solve problems; improve flexibility and ability to work in a team; and use theoretical knowledge in practical skills.

DESCRIPTION:

Theoretical lesson in Energetics' bases.
Topic "Power stations":
1. The teacher divides the students into four groups.
2. Each group has general rules of the game and special conditions.
3. They must make decision within their group, which power station can be built in their town according to all special conditions.
4. They must make one right decision within their group
5. Then they do report about decision making process: how they reached it, what difficulties they had.
6. Students make town's plan with the power station and other equipment (1 hour).
7. Students present their work (5 min).
This metdod ensures development of such personal skills as responsibility, communication skills, flexibility, leadership, and analytical skills which results in opportunity to use competences/skills in their future life, at work.



SUSTAINABLE LIFE STYLE AND WORKING LIFE – NOW AND INTO THE FUTURE: A FUTURE WORKSHOP

What are the aims of the method?

The future workshop is a method developed by Robert Jungk and Norbert R. Muellert in the 1970s. It enables a group of people to develop new ideas or solutions of social problems. A future workshop is particularly suitable for participants who have little experience with processes of creative decision making, for example, children or youth.

The goal of these workshops is to introduce into the challenges of sustainable development and designing a sustainable life style and to figure out activities, initiatives to change the school life and future everyday working life toward the principles of sustainable development.
Future workshop may also be used as a kind of action research method.

Please describe how far the method/approach supports the development of the following personal skills and key competencies.
What kind of results are expected by using the method/approach?

The students who participated in the workshop were very engaged in the activity and many of them had pertinent questions about sustainable development and how they could get a reasonable chance of success in implementing their future ideas in their everyday life. The future workshop is a great break from the routine.
This future workshop focuses on the development of design competence and social competencies.

On a knowledge level:
· Broaden the understanding of sustainable development, not only as a matter of environmental awareness towards the 17 SDG´s.
· Understanding of the connection between consumption and production.
· Understanding the transformation process as a worldwide agenda, which concerns us all.

On a skill level:
· Designing future scenarios for their school.
· Creating concrete activities to change the everyday life.
· Getting started in a group.

On an attitude level:
· Awareness of the consequences that present life has on future generations.
· The students experience themselves as knowledgeable change agents.
SD available to serve as mentors during the process.

Please describe how far the method/approach has a theoretical and/or legal base.

· Students as members of the school should be proud to be a part of the solution.

Depending on on ESD available to serve as mentors during the process. The number of participants, it is helpful to have some external experts on E

The concept of future workshops has been inspired from three main sources.
First, future workshops refer back on discourses and theories related to democratic, participative, and collective decision making by critical citizens,who would become emancipated individuals, becoming their own attorneys.
Second, future workshops are inspired by theories and learning methods on creative problem solving.
Third, future workshops follow the idea of action-oriented learning. The method is based on the activation of the intuition of individuals, synergy effects in groups and critical potentials that can contribute to the creation of an alternative.

References

Jungk, R., & Müllert, N. (1987). Future workshops: How to create desirable futures. London: Institute for Social Inventions.
Jungk, R., & Müllert, N. (1989). Zukunftswerkstätten. Mit Phantasie gegen Routine und Resignation [Future workshops. With imagination against routine and resignation]. München.
Burow, O.A., & Neumann-Schönwetter, M. (1997). (Hrsg.). Zukunftswerkstatt in Schule und Unterricht [Future workshop in school and lessons]. Hamburg: Bergmann & Helbig.

Please give a short description of the method/approach. Please include a typical course of action.

A future-workshop is a method for planning and forming future: it helps to create a vision and to define aims for further action.

Preparations:

It requires two 90 minutes school periods minimum or 3 units of work. The future workshop can be extended up to three days.
The results are reported in between the sessions and the final outcome is discussed in reflection session with the participation of all participants.

The method, its rules and the scheduled course of the workshop (in accordance with the participants) is introduced and should be visible on several charts in the classroom.

We start with an introduction by a brief video about “Drinking water in plastic bottles” or “17 Sustainable Development Goals”.

The future workshop method consists of three phases:

1. Critique phase: What are the weaknesses and threats in our school (future work; my own life …) concerning sustainability?
The problem is investigated critically and thoroughly. First of all, a visualised brainstorming is performed and a general and critical question concerning the problem is framed. This phase is designed to draw out specific issues and problems in question, producing a critical understanding of the problem.

Concrete Steps:
a. Collection of critique points: What are the weaknesses in our school (future work; my own life …) concerning sustainability? (by written cards/brainstorming);
b. Systematisation (clustering) on a pin board;
c. Evaluation, condensation, intensification, priorities.

2. Fantasy or visionary phase: How should a sustainable school life look like in 200 years?
All students try to work out a utopia, to draw an exaggerated picture of future possibilities.

Concrete Steps:
a. Imaginative introduction (meditation, work, walks ...)
We choose a slide show, which shows the world 200 years ago to show what positive developments and which extended risks for the future the humanity has created;
b. Turn critique points into the opposite (bad to good) as starting points;
c. Collect ideas (brain writing);
d. Preparing and performing a role play, fable, report, painting, fairytale into a fantastic story (as group work);
e. Common analysis of these performances with regard to good solutions/ideas;
f. Extract, write down an “idea store” on a pin board.

3. Implementation or realization phase: What can we change this school year?
The ideas found are checked and evaluated in regard to their practicability. Structuring the suggestions, investigating how realistic they are, reaching agreement on what happens next.

	Steps: a. Evaluate the concepts of the “idea store” with regard to realistic conditions and the best fit b. Put in more concrete terms, the best-suited concepts (group work) Choose the best one c. Build an action plan: Who does what, where, when and how?
Please describe the concrete target group that benefits from the method/approach. Please include (if possible) aspects like age, gender, social background, school education etc.)	The target group is the class, training group as a team and as an organizational part of the school community. The future workshop on SD is related to a holistic approach, which takes in account that everything is interconnected. The students should perceive themselves as active designers of the school life after the future workshop. Students in vocational trainings should experience themselves as competent change agent for a future everyday working life.
Please explain your opinion/idea, if the method/idea could be transferred to/used in other European countries.	Future workshops are internationally well known and approved. The transfer challenge is only to make it real.

SUSTAINABLE DEVELOPMENT WITHIN THE SUBJECT/CURRICULUM OF POLITICS

What are the aims of the method?

The aims of the method/approach are:
· to introduce students to the concept of sustainable development and the Sustainable Development Goals (SDGs).
· to encourage creative processes (explanatory videos) and to create a personal/reflective basis with the topic.

Please describe in how far the method/approach supports the development of the following personal skills and key competencies.
What kind of results are expected by using the method/approach?

The method aims at improving communicative and team-working competences and introducing basics of video-creation and presentation skills. The expected results are:
· that students know what sustainable development is,
· analysis of different SDGs,
· to create explanatory videos that relates to a certain SDG,
· knowing your place in a group – working together with different peers and getting to know different group process roles.

Please describe in how far the method/approach has a theoretical and/or legal base.

There is a lot of theoretical literature on the concept of sustainable development and didactical material to cover the SDGs in a classroom setting.

Please give a short description of the method/approach. Please include a typical course of action.

Entry phase (approx. 6 lessons)
Use of the textbook "Demokratie gestalten" - Politik für berufsbildende Schulen in Niedersachsen, "Mitgestalten Welt im Wandel; Politische und persönliche Lösungsanstätze; Globale Umweltschutzmaßnahmen", Europa Verlag, p. 208 ff
Introduction to the topic of "Global environmental protection measures" through the presentation of international efforts since 1972 by the first United Nations Conference on the environment in Stockholm.
With the help of the textbook and the class discussions, students obtain information about the following conferences and their most important results:
Rio de Janeiro 1992: (inter alia) presentation of the idea of sustainable development.
Kyoto 1997: (inter alia) setting mandatory international targets for greenhouse gas emissions in industrialised countries.
UN Climate Conference in Paris 2015: (inter alia) resolution of the climate agreement, which is obligatory under international law.

Pros and cons discussion on the effectiveness of the climate agreement, in view of the fact that no contractual penalties have been agreed.
The students research current reports on the current Climate Conference in Bonn 2017 and report on the current results of the Climate Conference. (Internet, daily press, class meeting)
The students independently research and present definitions of the concept of "sustainable development". (Internet research, lectures, educational discussion)

Deepening phase - Theoretical focus - 17 Sustainable Development Goals (approx. 6 lessons)
Presentation and explanation of the 17 targets for sustainable development. (class conversation)
Teamwork - The students select one of the 17 targets, to work on more intensively.
Work assignment: Presentation of the problem, its actual and potential consequences. Development of proposed solutions.
Groups present their results (no poverty, no hunger, clean water and sanitary facilities, affordable and clean energy). (posters - discussion in plenary)

Deepening phase - Practical focus - What can we contribute to sustainable development ourselves? (approx. 8 lessons)
Team work: Students create explanatory videos with topics from their own environment that relate to sustainable development. Progress logs are made throughout the process. The groups prepare a script before the shooting. Forms are provided.
Corresponding introduction to the creation of explanatory videos and their meaningful use (class discussion, viewing explanatory videos on youtube)
Teacher information on data protection, respect for personal rights, indication of sources, etc.
At the same time, three elaborations are made by students as individual work:
Contents: Presentation of the main topic and the project idea; theoretical elaboration with regard to the creation possibilities of explanatory videos. Survey of students with questions concerning the group work process.
(Project day for the production of the explanatory videos)

Presentation and evaluation of the results (approx. 4 lessons):

· 1 presentation on the theoretical deepening phase with documentation of the posters produced, definition of "sustainability", overview of central problem areas worldwide.

· 4 explanatory videos, length per video approx. 2-4 minutes,

· Topics: "Footprint on Google search"; "Meat"; "Electric cars"; "No Energy - Energy drinks"

· 2 presentations on the project topic and project process. These presentations also included definitions of "sustainability", description of the meaningful use of explanatory videos and their production methods. The description of the project process also included the evaluation of the student surveys.

The evaluation criteria have been developed together with the students.The presentation and reflection phase was again part of a project day.

Please describe the concrete target group that benefits from the method/approach. Please include (if possible) aspects like age, gender, social background, school education etc.)

The target group that benefits from this approach are students in vocational or secondary schools, that shall be introduced to sustainable development through a self-reflective process by getting to know and learning about the SDGs on a deeper level.

Please explain your opinion/idea, if the method/idea could be transferred to/used in other European countries.

This method could be transferred to any European country. Necessary requirements is a computer or laptop room where students have access to a computer and possibly video editing software.

SCHOOL-INTERNAL COMPANY – "ECONOMY-LIVE-PROJECT" SUSTAINABILITY CERTIFICATION

What are the aims of the method?	The aims of the method are: · to gain an insight in the different departments of a retail company (e.g. personnel, purchasing and warehouse, marketing and sales and accounting). · to certify that the student-run company complies with a certain set of sustainability standards (bronze-silver-gold certification)
Please describe in how far the method/approach supports the development of the following personal skills and key competencies. **What kind of results are expected by using the method/approach?**	The method aims at improving different skills needed to work within the retail sector. These skills can be: · Questioning the employees · Trainings, coaching and staff supervision · Choice of suppliers and selection of products · Trade in goods with the minimum of packaging · Separation of waste · Punctual invoicing · Discount deduction · Appropriate expenditure of profit This method also aims at improving the sustainability of student-run companies. These goals are for example: 1. To create organization structures like a company (business plan, organisation chart etc.) 2. Being part of the professional orientation 3. To establish external cooperations and evaluation 4. Anchoring as a role model within the school 5. To implement Sustainable quality development 6. Transfer of results 7. Business/company organisation (e.g. registered cooperative society)
Please describe in how far the method/approach has a theoretical and/or legal base.	There is a lot of theoretical literature on student-run companies. This method adds the aspect of sustainability to it.
Please give a short description of the method/approach. Please include a typical course of action.	The students run the school cafeteria and the school kiosk; catering, selling meals and drinks during the breaks and for lunch. 20 – 25 students work in 6 different departments running two companies with a similar focus.
Please describe the concrete target group that benefits from the method/approach. Please include (if possible) aspects like age, gender, social background, school education etc.)	The target group that benefits from this approach are students in vocational or secondary schools that are going through training to become either a training shop assistant and or a retail sales management assistant.

Please explain your opinion/idea, if the method/idea could be transferred to/used in other European countries.

This method could be transferred to any European country. Necessary requirements are student run companies that are part of the schools' infrastructure and are also imbedded in the schools' curriculum.

THE ESD LEARNING OFFICE

What are the aims of the method?

The aims of the method are:
1. to introduce students to real life sustainable business scenarios.
2. to rethink the work space and the operational procedures in an office.

Please describe how far the method/approach supports the development of the following personal skills and key competencies.
What kind of results are expected by using the method/approach?

The method aims at improving communicative competences and introducing basics of presentation skills. The expected results are:
· higher requirements on the workplace configuration,
· organisation of office-oriented procedures,
· progress control,
· planning, performing and reinforcing meetings,
· to make use of the ways of information and communication,
· faster reaction on situative business related situations.

Please describe how far the method/approach has a theoretical and/or legal base.

There is a lot of theoretical literature on real-life scenario methods. This method adds the aspect of sustainability to it.

Please give a short description of the method/approach. Please include a typical course of action.

These are exemplary learning situations for the sustainable learning office:

LEARNING SITUATION 1:
UNDERSTAND THE MODEL COMPANY IN THE MACROECONOMIC CONTEXT

Time guideline 5 hours

Skills Exploring relationships between the model company and the economy as a whole by presenting business types, exploring business partners, and developing features of an industrial and commercial park.

Links to the 17 Sustainable Development Goals

LEARNING SITUATION 3:

CORPORATE CULTURE AND THE FUNDAMENTAL EFFECTS OF COMPANY ACTION

Time guideline 6 hours

Skills The significance of the corporate culture in terms of internal processes and the external impact. Integrate sustainability aspects and responsible corporate actions (also with regard to globallization) into the creation of the corporate model of the model company.

Links to the 17 Sustainable Development Goals

LEARNING SITUATION 5:

WORKSPACE AND WORKPLACE DESIGN WITH INCLUSION OF LEGAL PROVISIONS, ERGONOMIC ASPECTS AS WELL AS OTHER ENVIRONMENTAL AND HEALTH FACTORS

Time guideline 5 hours

Skills The enlargement of new office space incorporating the aspects of room climate, light, acoustics, color design, ergonomic workplace design and employee health plan (presentation at a company-internal meeting).

Links to the 17 Sustainable Development Goals

LEARNING SITUATION 15:
QUANTITATIVE AND QUALITATIVE COMPARISON OF SUPPLIERS

Time guideline	3 hours
Skills	Compare manufactured goods and merchandise for a quantitative comparison of offers. In addition, qualitative aspects of decision-making in the procurement process (especially the focus on sustainability aspects) are reflected and considered
Links to the 17 Sustainable Development Goals	 
Please describe the concrete target group that benefits from the method/approach. Please include (if possible) aspects like age, gender, social background, school education etc.)	The target group that benefits from this approach are students in vocational or secondary schools, that shall be introduced to sustainable business models in a real-life scenario.
Please explain your opinion/idea, if the method/idea could be transferred to/used in other European countries.	This method could be transferred to any European country. Necessary requirements is a computer or laptop room where this setting of a learning office can be displayed.

PART III

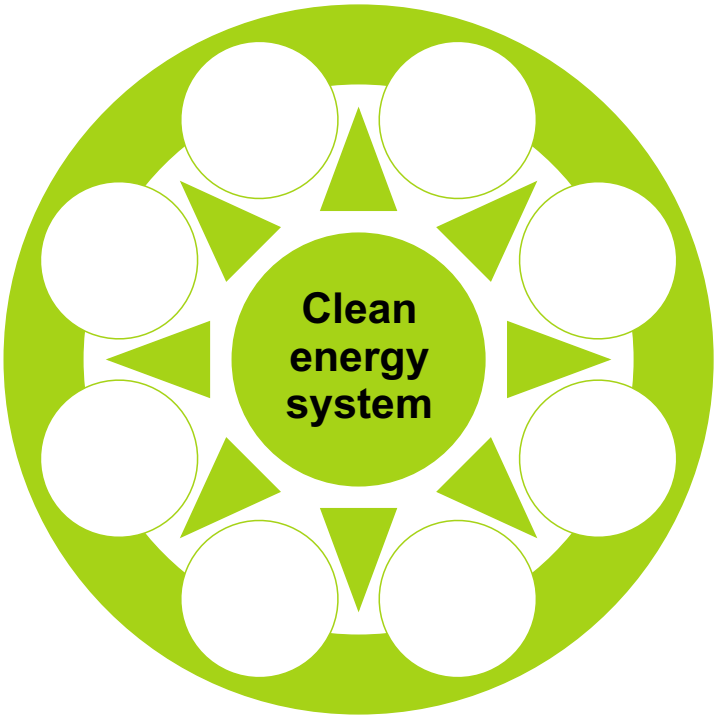
ACTIVITIES FOR TEACHING SUSTAINABILITY

What job to choose to help the planet?

Age: 16+
Aim: understand the classification of green occupations; consider the skills and talents suitable for this job.
Recources: photocopies of exercises, writing implement, access to the website <https://www.onetcenter.org/green.html?p=4>
Process: form groups of three people. Get acquainted with the material and start doing exercises.

Exercise 1

(I) In the scientific paper by Ürge-Vorsatz, D. et al. (2016) the overlap between Green Economy and Multiple Impacts of Energy Efficiency is showed. Select the most important benefits from the list and fill up the scheme. During the discussion with other groups provide evidence for this choice.



Benefits:
Energy savings
GHG emission reduction
Ecosystems
Biodiversity
Health
Poverty alleviation
Employment
Resource management
Energy price reduction
Energy security
Macroeconomic impacts
Reduced pollution
Improved energy delivery

Reference
Ürge-Vorsatz, D. et al. (2016). Measuring multiple impacts of low-carbon energy options in a green economy context. Applied Energy, 179, 1409-1426.

(ii) Go on the O*NET Online <https://www.onetcenter.org/green.html?p=4> website and find some examples of the jobs and their description with necessary skills, knowledge etc.

Exercise 2

(i) Put the job titles below into the correct column of the table. Compare with other groups.

Green occupations:

Power Plant Operators, Energy Auditors, Financial Analysts, Environmental Economists, Architects, Hazardous Materials Removal Workers, Hydroelectric Production Managers, Nanosystems Engineers, Commercial and Industrial Designers, Logistics Analysts, Landscape Architects, Agricultural Inspectors, Bus Drivers, Compliance Managers, Biochemical Engineers, Solar Energy Systems Engineers, Water Resource Specialists, Sustainability Specialists, Electricians, Electrical Engineering Technologists, Recycling Coordinators

Sector	Example of Green occupations
Agriculture and Forestry	1. 2.
Energy and Carbon Capture and Storage	1. 2.
Energy Efficiency	1. 2.
Environment Protection	1. 2.
Governmental and Regulatory Administration	1. 2.
Green Construction	1. 2.
Manufacturing	1. 2.
Recycling and Waste Reduction	1. 2.
Renewable Energy Generation	1. 2.
Research, Design, and Consulting Services	1. 2.
Transportation	1. 2.

(ii) Each group selects one of the suggested Green occupations and writes down what skills might be needed for this job.

Green occupations:
Sector:
Skills:

(iii) Discuss and compare with skills from the website <https://www.onetcenter.org/green.html?p=4>

(iv) Summary. Answer the questions in groups.
Are you interested in the described job? Yes ◯ No ◯
Will Green occupations promote sustainability? Yes ◯ No ◯
In your opinion, which are the most important three Green occupations to save the Planet? Why?

Thank you!

(http://www.medgreeneconomy.org)

For the teacher
Division of Green occupations

Exercise 2 (i)

Sector	Example of Green occupations
Agriculture and Forestry	1. Landscape Architects 2. Agricultural Inspectors
Energy and Carbon Capture and Storage	1. Power Plant Operators
Energy Efficiency	1. Energy Auditors 2. Financial Analysts
Environment Protection	1. Environmental Economists 2. Water Resource Specialists
Governmental and Regulatory Administration	1. Sustainability Specialists 2. Compliance Managers
Green Construction	1. Architects 2. Electricians
Manufacturing	1. Electrical Engineering Technologists 2. Biochemical Engineers
Recycling and Waste Reduction	1. Recycling Coordinators 2. Hazardous Materials Removal Workers
Renewable Energy Generation	1. Solar Energy Systems Engineers 2. Hydroelectric Production Managers
Research, Design, and Consulting Services	1. Nanosystems Engineers 2. Commercial and Industrial Designers
Transportation	1. Logistics Analysts 2. Bus Drivers

Exercise 2 (I) Green occupations for random selection

Agricultural Inspectors	Power Plant Operators	Zoologists and Wildlife Biologists	Forest and Conservation Technicians	Energy Auditors
Bus Drivers	Electricians	Urban and Regional Planners	Recycling Coordinators	Biofuels Production Managers

Green occupations for discussion

AGRICULTURAL INSPECTORS

Sector: Agriculture and Forestry

Skills:

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Speaking — Talking to others to convey information effectively.
Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.
Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Coordination — Adjusting actions in relation to others' actions.

http://www.careeraddict.com

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
Writing — Communicating effectively in writing as appropriate for the needs of the audience.
Instructing — Teaching others how to do something.

POWER PLANT OPERATORS

Sector: Energy and Carbon Capture and Storage

Skills:

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Operation and Control — Controlling operations of equipment or systems.
Speaking — Talking to others to convey information effectively.
Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
Troubleshooting — Determining causes of operating errors and deciding what to do about it.
Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Coordination — Adjusting actions in relation to others' actions.
Writing — Communicating effectively in writing as appropriate for the needs of the audience.

ZOOLOGISTS AND WILDLIFE BIOLOGISTS

Sector: Environment Protection

Skills:

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Science — Using scientific rules and methods to solve problems.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Writing — Communicating effectively in writing as appropriate for the needs of the audience.
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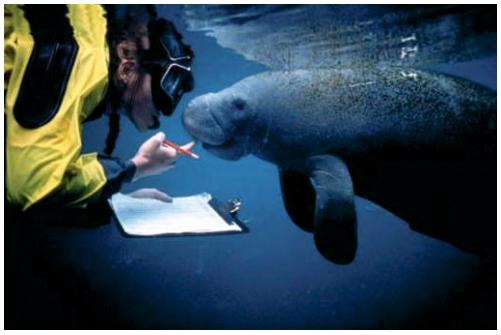
Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
Time Management — Managing one's own time and the time of others.
Instructing — Teaching others how to do something.
Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.
Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.



www.wildlife-sanctuary.info/zoologist-wildlife-biologist.html

FOREST AND CONSERVATION TECHNICIANS

Sector: Environment Protection

Skills:

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
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Time Management — Managing one's own time and the time of others.
Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.
Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.
Mathematics — Using mathematics to solve problems.
Writing — Communicating effectively in writing as appropriate for the needs of the audience.

http://www.rwm.org/articles/12-jobs-for-technophobes/

ENERGY AUDITORS

Sector: Energy Efficiency

Skills:

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Speaking — Talking to others to convey information effectively.
Writing — Communicating effectively in writing as appropriate for the needs of the audience.
Mathematics — Using mathematics to solve problems.
Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
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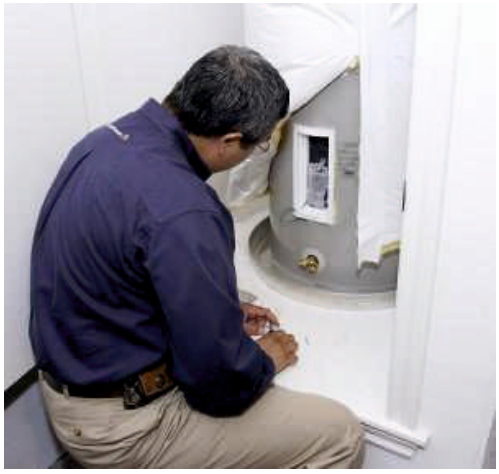
Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
Coordination — Adjusting actions in relation to others' actions.
Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
Negotiation — Bringing others together and trying to reconcile differences.
Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.



http://www.isustainableearth.com/green-jobs/energy-efficiency-job-profiles/energy-auditors-green-job-profile

Operations Analysis — Analyzing needs and product requirements to create a design.
Persuasion — Persuading others to change their minds or behavior.
Science — Using scientific rules and methods to solve problems.
Service Orientation — Actively looking for ways to help people.

BUS DRIVERS

Sector: Transportation

Skills:

Operation and Control — Controlling operations of equipment or systems.
Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Time Management — Managing one's own time and the time of others.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Service Orientation — Actively looking for ways to help people.
Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.
Speaking — Talking to others to convey information effectively.

https://www.springisd.org/site/default.aspx?PageType=3&DomainID=4&ModuleInstanceID=8&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=5896&PageID=1&GroupByField=DisplayDate&GroupYear=2017&GroupMonth=2&Tag=

ELECTRICIANS

Sector: Green Construction

Skills:

Troubleshooting — Determining causes of operating errors and deciding what to do about it.
Repairing — Repairing machines or systems using the needed tools.
Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Installation — Installing equipment, machines, wiring, or programs to meet specifications.
Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.
Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.
Instructing — Teaching others how to do something.
Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
Speaking — Talking to others to convey information effectively.
Coordination — Adjusting actions in relation to others' actions.
Equipment Selection — Determining the kind of tools and equipment needed to do a job.
Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
Mathematics — Using mathematics to solve problems.
Operation and Control — Controlling operations of equipment or systems.
Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.
Time Management — Managing one's own time and the time of others.

https://globalwarmingisreal.com/2012/07/26/in-the-green-economy-electricians-are-in-demand/

URBAN AND REGIONAL PLANNERS

Sector: Governmental and Regulatory Administration

Skills:

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Speaking — Talking to others to convey information effectively.
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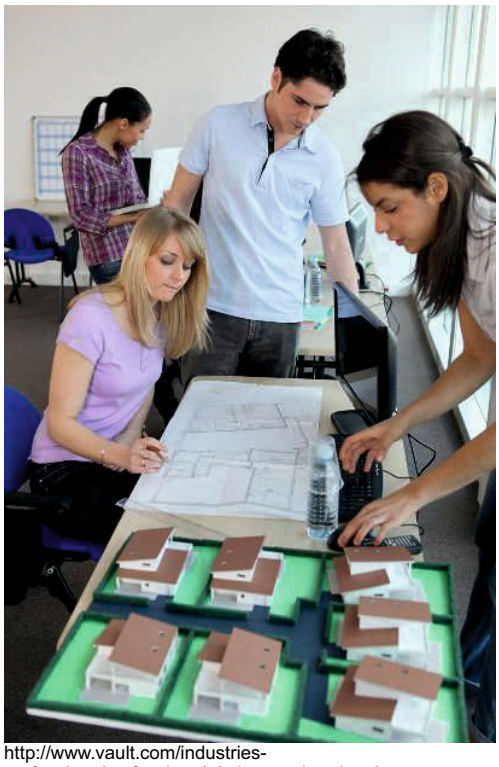
Coordination — Adjusting actions in relation to others' actions.
Negotiation — Bringing others together and trying to reconcile differences.
Operations Analysis — Analyzing needs and product requirements to create a design.
Persuasion — Persuading others to change their minds or behavior.
Time Management — Managing one's own time and the time of others.
Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.



http://www.vault.com/industries-professions/professions/u/urban-and-regional-planners.aspx

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
Service Orientation — Actively looking for ways to help people.
Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
Mathematics — Using mathematics to solve problems.

RECYCLING COORDINATORS

Sector: Recycling and Waste Reduction

Skills:

Speaking — Talking to others to convey information effectively.
Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.
Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Coordination — Adjusting actions in relation to others' actions.
Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Time Management — Managing one's own time and the time of others.
Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.
Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.
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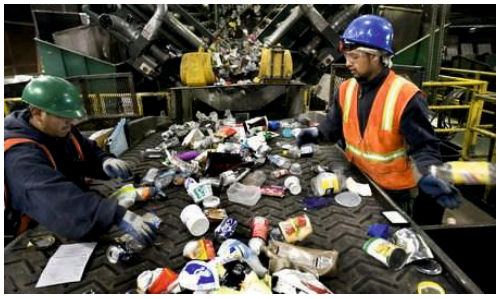

http://www.owlguru.com/career/recycling-coordinators/job-description/

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.
Service Orientation — Actively looking for ways to help people.

BIOFUELS PRODUCTION MANAGERS

Sector: Renewable Energy Generation

Skills:

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.
Reading Comprehension — Understanding written sentences and paragraphs in work related documents.
Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
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Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.
Instructing — Teaching others how to do something.
Service Orientation — Actively looking for ways to help people.
Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.
Operation and Control — Controlling operations of equipment or systems.
Persuasion — Persuading others to change their minds or behavior.
Management of Financial Resources — Determining how money will be spent to get the work done, and accounting for these expenditures.
Mathematics — Using mathematics to solve problems.
Negotiation — Bringing others together and trying to reconcile differences.
Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
Science — Using scientific rules and methods to solve problems.
Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.

https://www.texasgearup.com/discover/biofuels-production-manager

Sustainable Development Goals

Age: 16-17 years
Aim: get acquainted with the sustainable development goals.
Tasks:
1. To find a partner for the task;
2. To read and discuss with your partner what sustainability is;
3. To discuss and write down sustainable development goals (using pictures as hints). The pictures symbolize all of the 17 goals;
4. To pick descriptions from an envelope and match them with pictures;
5. To compare the given answers with yours. (Appendix 1)

"Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is comprised of five pillars: economic, cultural, political, environmental and social – also known informally as profits, planet and people. Sustainability emerged as part of corporate ethics in response to perceived public discontent over the long-term damage that a focus short-term profit can cause. For example, a factory pouring its waste into a nearby body of water to avoid the short-term costs of proper disposal can cause environmental damage that is much more expensive in the long term. Sustainability encourages business to frame decisions in terms of years and decades rather than on the next quarter's earnings report, and to consider more factors than simply the profit or loss involved".

Excerpt from https: //www.investopedia.com/terms/s/sustainability.asp

Picture: http://www.un.org/sustainabledevelopment/blog/2015/09/why-should-you-care-about-the-sustainable-development-goals/#prettyPhoto

Appendix 1. (For the teacher: cut pictures with the “Sustainable development goals” and put them in an envelope)

No poverty
Zero hunger
Good health and well-being
Quality education
Gender equality
Clean water and sanitation
Affordable and clean energy
Decent work and economic growth
Industry, innovation and infrastructure
Reduced inequalities
Sustainable cities and communities
Responsible consumption and production
Climate action
Life below water
Life on land
Peace, justice and strong institutions
Partnerships for the goals

See http://www.un.org/sustainabledevelopment/sustainable-development-goals/

Recycling game

Age: 15-16 years
Aim: introduce students to the basics of recycling and develop critical thinking skills.
Necessary items: Cards of different items to recycle and cards of recycling bins.
Process: This game can be used as an educational activity for students to raise the awareness that recycling is just one of the ways to minimise waste. Before this game, some guiding questions can be asked, e.g., what bin should you use when sorting plastic, paper, glass, environmentally hazardous materials, medical waste, etc.It is important to adapt this game to real neighbourhood that students live in because every country has different policy for recycling.

The rules of the recycling game:
- prepare a number of bins to match the amount of bins your neighborhood uses;
- put all the cards face down on the table;
- each player picks up one random card and decides which bin to place it into and comments his/her decision;
- correct answers get one point, and the person with the most points at the end of the game wins.

For more ideas, see https://www.adventure-in-a-box.com/printable-recycling-game/

Discovering the meaning of sustainability

Age: 15+
Aim: understand the diverse aspects of sustainability.
Necessary items: markers, pen.

Task 1
MIX OF LETTERS
Find 16 notions related to the long-term development (only horizontally and vertically)!

S	I	N	F	O	R	M	A	T	I	O	N	E	D	Z
E	D	F	G	E	O	P	K	N	C	Z	A	R	P	L
D	R	B	M	C	V	I	T	W	U	M	V	N	R	E
U	E	G	L	O	B	A	L	I	Z	A	T	I	O	N
C	S	Y	F	S	E	T	K	S	B	M	N	Q	C	Y
A	O	B	N	Y	H	R	T	H	G	B	T	V	E	Q
T	U	C	X	S	A	Y	O	E	T	I	G	D	S	H
I	R	U	Z	T	V	H	P	S	R	T	E	N	S	E
O	C	L	S	E	I	K	F	A	M	I	L	Y	E	A
N	E	T	R	M	O	N	J	W	S	O	W	V	D	L
J	S	U	T	S	R	E	Y	M	F	N	W	A	C	T
K	U	R	Y	M	E	W	B	G	T	S	B	L	N	H
F	R	E	E	D	O	M	K	N	C	M	G	U	W	T
E	Y	P	O	L	L	U	T	I	O	N	B	E	T	M
D	V	K	U	S	D	M	R	I	G	H	T	S	B	E

Task 2
Group all of the found notions accordingly:
Cultural aspect -
Social aspect -
Ecological aspect -
Economic aspect -
Reflexion
Key:

	I	N	F	O	R	M	A	T	I	O	N			
E				E									P	
D	R			C				W					R	
U	E	G	L	O	B	A	L	I	Z	A	T	I	O	N
C	S			S	E			S		M			C	
A	O			Y	H			H		B			E	
T	U	C		S	A			E		I			S	H
I	R	U		T	V			S		T			S	E
O	C	L		E	I		F	A	M	I	L	Y		A
N	E	T		M	O					O		V		L
	S	U		S	R					N		A		T
		R								S		L		H
F	R	E	E	D	O	M						U		
		P	O	L	L	U	T	I	O	N		E		
							R	I	G	H	T	S		

For a Greener Planet

Age: 16+
Aim: raise awareness of climate change as the result of global warming and promote green thinking among the students.
Necessary materials: assignment sheet, pen/pencil.
Instruction: students carry out the tasks in groups or independently after getting familiar with the assignment rules.

Task 1 In given word search puzzle find 15 things or living beings that are affected the most by the climate change!

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

O	F	F	S	P	R	I	N	G	S	X
N	I	A	I	O	W	E	K	G	O	O
L	S	R	E	N	Q	G	I	L	I	F
Y	H	M	Y	A	N	I	M	A	L	S
W	E	A	R	T	H	U	Z	C	S	A
O	S	K	H	U	M	A	N	I	F	Q
R	A	M	O	R	W	A	T	E	R	T
L	C	R	W	E	U	A	I	R	J	K
D	K	B	L	B	I	R	D	S	A	D
C	L	I	M	A	T	E	E	D	C	L

[Picture taken from:http://assignmenthelpexperts.blogspot.com/2011/09/business-its-environment-and-objectives.html]

Task 2 Choose 10 words from Task 1, and write down 10 rules that would help to maintain our planet greener (construct sentences from the given letters down below)!

TH _____
I _____
N _____
K _____

G _____
R _____
E _____
E _____
N _____

Task 1 answer key

Task 1 In given word search puzzle find 15 things or living beings that are affected the most by the climate change!

1. CLIMATE
2. SOIL
3. WATER
4. EARTH
5. FISHES
6. GLACIERS
7. NATURE
8. OFFSPRINGS
9. HUMAN
10. WE
11. ANIMALS
12. WORLD
13. BIRDS
14. AIR
15. FARM

O	F	F	S	P	R	I	N	G	S	X
N	I	A	I	O	W	E	K	G	O	O
L	S	R	E	N	Q	G	I	L	I	F
Y	H	M	Y	A	N	I	M	A	L	S
W	E	A	R	T	H	U	Z	C	S	A
O	S	K	H	U	M	A	N	I	F	Q
R	A	M	O	R	W	A	T	E	R	T
L	C	R	W	E	U	A	I	R	J	K
D	K	B	L	B	I	R	D	S	A	D
C	L	I	M	A	T	E	E	D	C	L

[Picture taken from:http://assignmenthelpexperts.blogspot.com/2011/09/business-its-environment-and-objectives.html]

Task 2 Choose 10 words from Task 1, and write down 10 rules that would help to maintain our planet greener (construct sentences from the given letters down below)!

TH _____
I _____
N _____
K _____

G _____
R _____
E _____
E _____
N _____

Role of the United Nations (UN) in the development of a sustainable world

Age: 16+
Aim: promote understanding of the reasons for the establishment of the UN, the directions of its activities and its role in the sustainable development of the contemporary world.

Task 1. The way to the UN (Table No 1).

No.	Year or century	Success
1.	1958-1961	Prevention of the Berlin crisis
2.	1973	Resolution of the Middle East conflict
3.	1990	Help 150 million Chinese people get out of poverty
4.	1992	Resolution of "the withdrawal of foreign troops from the Baltic States"
5.	20th century 90s	Several times Latvia has been accused of violating human rights - corruption and crime
6.	2010 - 2011	Help Haiti and Japan earthquake victims
7.	1990 - 2011	Reducing child mortality in the world under the age of 5, from 12 million in 1990 to 6.9 million in 2011

1.1. In what circumstances, who and why had ideas for the establishment of UN? (3 points)

.....
.....
.....
.....

1.2. Name 3 activities of the UN. Describe them (see table 1). (6 points)

.....
.....
.....
.....

Task 2. The UN flag was created on December 7, 1946. Describe every element of the UN flag. (3 points)

.....
.....
.....
.....

Task 3.
Latvia and the UN.

3.1. When did Latvia join UN? (1 point)

.....

3.2. What was the role of the UN in the first years after the restoration of independence? In your opinion, which of the above mentioned (task 1.2) UN activities were the most important in the 1990s? Substantiate your answer with facts? (4 points)

.....
.....
.....
.....

3.3. In your opinion, which activities of the UN are the most important nowadays in Latvia, have the priorities changed since the 90s? (2 points)

.....
.....
.....

Task 4.

All people in this world are longing for peace. A stable and secure environment is essential for people to realize their full potential. In too many places in the world, conflicts seem to never end. It violates the fundamental principles of international law, changes the borders of states by force, and loses lives. (From speech of President of Latvia - Raimonds Vejonis at the United Nations General Assembly, 72nd Session in New York, 20 September, 2017).

What do you think has threatened peace and security in the modern world in recent history? Based on examples, name three threats. (6 points)

.....
.....
.....
.....
.....
.....

Task 5.
If you had the opportunity to work for the UN and influence the processes taking place in the world, what would your two priorities be? What are your proposals for implementing these priorities? Justify your opinion. (4 points)

.....
.....
.....
.....
.....
.....

References:

1. ANO karogs [UN flag]. Retrieved from https://lv.wikipedia.org/wiki/Apvienoto_N%C4%81ciju_Organiz%C4%81cija#/media/File:Flag_of_the_United_Nations.svg
2. Ignatāne, G., & Lulle, A. (2005). Rokasgrāmata par ANO [UN Handbook]. Rīga: SIA "Jelgavas tipogrāfija". Retrieved from http://www.mfa.gov.lv/data/file/l/p/anorokasgramata.pdf
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5. Valsts prezidenta Raimonda Vējoņa uzruna Apvienoto Nāciju Organizācijas Ģenerālās asamblejas 72. sesijā Ņujorkā 2017. gada 20. Septembrī [Statement by President Raimonds Vējonis at the 72nd session of the United Nations General Assembly in New York on 20 September, 2017]. Retrieved from http://www.president.lv/images/modules/items/PDF/2017/20092017-Runa_ANO_GA-Nujorka.pdf

Save The Nature – The Nature Will Save You

Age: 15-16 years
Aim: draw students' attention to the world's ecological problems and encourage students to take responsibility for the nature.
Problem: increase of garbage dumps in Latvia.
Necessary items: worksheets, pen, access to Internet.

Solution of the problem:

Worksheet 1
Teacher offers to come up with and write down inside the bucket, what there is in students' wastebins.

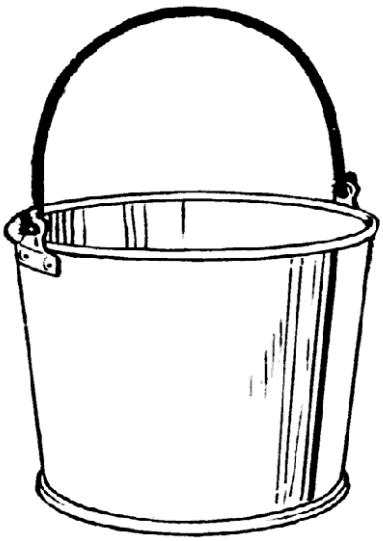
(Possible answers: food waste, newspaper, glass bottles, plastic bottles, paper, rags, CDs, footwear, cardboard, foam plastic, plastic bags, tins etc.)

Worksheet 2
Research:
1. Complete the table and write down the examples of litter you have in your wastebin;
2. How much time is needed to decay;
3. If it can be separated and recycled;
4. Give examples, how it can be used purposely in everyday life (if it can).

Teacher offers to conclude.

(Example: the majority of the litter that pollutes the nature can be recycled and used again. To save the nature not all the litter can be thrown away in common dumpster, but can be sorted and recycled or used purposely in everyday life).

Worksheet 1
What is there in your waste bin? Write inside the bucket:



Worksheet 2
Make a research and complete the table. Draw conclusion.

Litter	Necessary time for decay	Can it be recycled	Object's second life
			
food waste	some weeks	-	-
newspaper	1-3 months	+	summer cap

Conclusion:

_____

_____

_____

Worksheet 2 (Keys)
Make a research and complete the table. Drawa conclusion.

Litter	Necessary time for decay	Can it be recycled	Object's second life
			
food waste	some weeks	-	-
newspaper	1-3 months	+	summer cap
banana peel	to 6 months	-	-
cardboard	3- 4 months	+	cat's house
office paper	2 years	+	children's toys/ origami
cans	10 years	+	pencil box
footwear	10 years	+	flowerpot for the garden
clothes	2- 3 years	+	children's toys
woolen goods	1 year	+	children's toys
woodenware	to 10 years	+	birdhouse
rubber	50- 100 years	+	decorations for the garden
tinfoil	100 years	+	decorations
batteries	100 years	+	-
plastic bottles	180- 200 years	+	flowerpot/ birdhouse
aluminium cans	500 years	+	candlestick
glass	1000 years	+	vase

Conclusion: the majority of litter that pollutes the nature can be recycled and used again. To save the nature not all the litter can be thrown away in common dumpster, but can be sorted and recycled or used purposely in everyday life.

Biodegradable polymers

Age: 16+
Aim: draw students' attention to the world's ecological problems and develop critical thinking skills.

Worksheet No1

1.1. Read the text in the worksheet attachment No1 „Biodegradable polymers". Answer the questions!

1.2. What are the benefits of biodegradable polymers compared to synthetic polymers?

1.3. What could be the disadvantages of biodegradable polymers?

1.4. How do you think, in which industry sectors it would be most important to use biodegradable polymers instead of the polymers currently used?

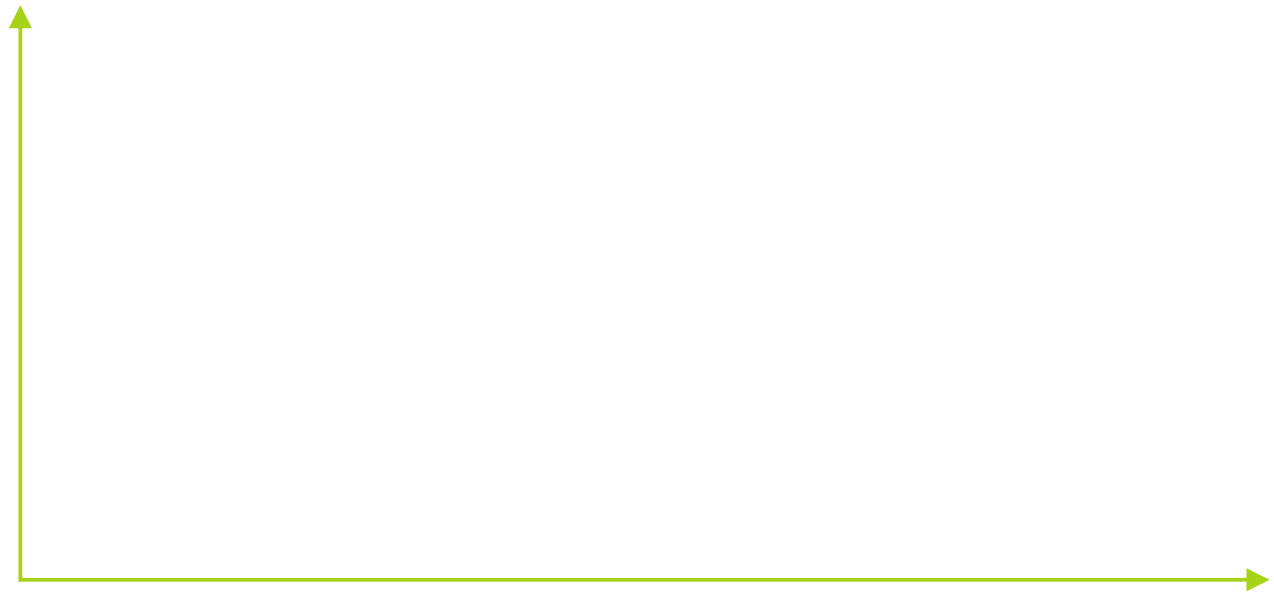
1.5. How could you promote the use of biodegradable polymers in different industries?

2. Using internet resources, try to find out, what kind of products made in Latvia can you find these logos printed on?

3. In 2005 the market for biodegradable polymers in Western Europe was the largest in the world - 59%. See the data in the table below on the consumption of biodegradable polymers over the years in Western Europe according to the polymer type (in tons)!

	2000	**2005**	**2010**
Starch based	10300	29900	50100
PLA	3700	19000	62100
Synthetic aliphatic and aromatic copolyester	1500	6700	15800
PHA	0	100	1000

3.1. According to the table data try to draw a graphic of the „Increase in the consumption of biodegradable polymers in Western Europe”!



Worksheet attachment No1

Biodegradable polymers

In the production of packaging materials mostly plastics are used, i.e. polymers are used in virtually all areas: food products, medical products, electronics, for dangerous solution packaging. However polymers despite all their benefits (universality, low costs, a wide range of physical properties) have also a number of drawbacks. Firstly raw fossil materials are used in the production of plastics, but their quantity on our planet is limited. Secondly the longetivity of plastics. Traditional plastic products, are predominantly made from ordinary polymers, they practically do not degrade in a natural environment.A possible solution for the aforementioned problem is biodegradable polymers. Those are polymers that naturally break down under aerobic or anaerobic conditions under the influence of microorganisms. This means that the waste from these materials under the influence of soil microorganisms, humidity and certain temperatures converts to the substances from which they originally derived - CO2, water and biomass. An essential advantage of biopolymers is their rapid compostability - part of these polymers in the result of industrial compostation, decomposes in about 6 months time. Biodegradability and compostability are the main qualities that define biodegradable polymers.

(Source: http://profizgl.lu.lv/mod/book/view.php?id=21806&chapterid=6488 , https://en.wikipedia.org/wiki/Biopolymer)

Climate change impact on people's health

Age: 15+
Aim: raise students' awareness about identifying climate change related problems and develop critical thinking skills.

1. Name factors that in your opinion impact global climate changes!

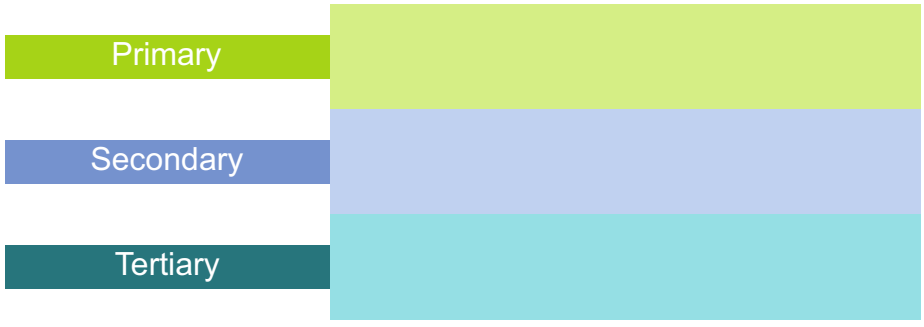
_____
_____
_____
_____
_____
_____

2. Divide the following factors into having **direct** or **indirect** impact on people's health!

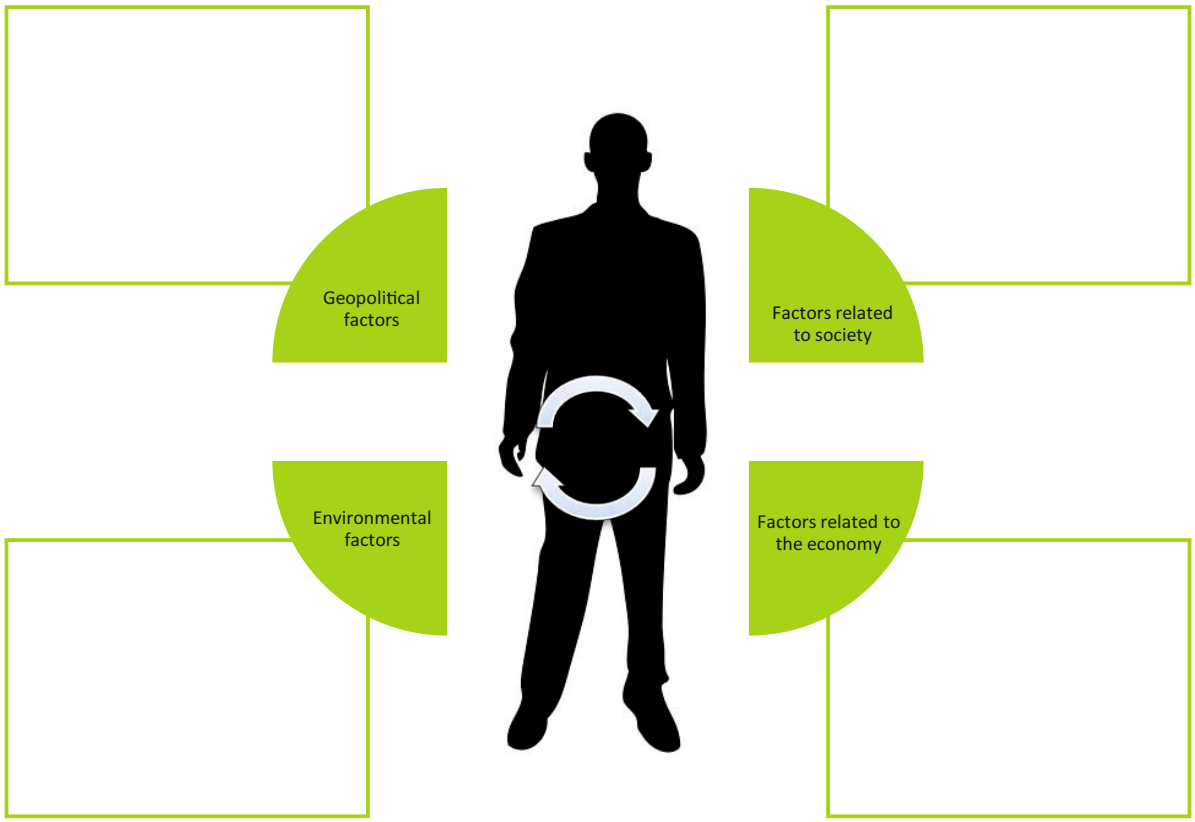
Direct impact	Indirect impact
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____

Heat, product quality, lack of drinking water, unemployment, extreme weather conditions, air pollution, insect bites, social violence, migration, temperature changes.

3. By using sources of information at your disposal, describe, the meaning of primary, secondary and tertiary impact on people's health!



4. Divide the below mentioned factors, which effect the occurrence and development of chronic diseases, into the following groups!



Burden of law and regulations, infrastructure development, pandemics, food price changes, infectious diseases, lack of water, global management flaws, air pollution, migration, development of society, financial downfall under the influence of globalization, biodiversity loss, currency fluctuations, new financial reduction, drought and desertification, globalization influence, fiscal crises, extraordinary environmental condition.

5. Describe how climate changes affect certain professions.

Farmers	Construction workers	Sweepers
•	•	•

Sustainability issues: facts and figures

Age: 16 – 17 years
Aim: to get acquainted with facts about sustainability.
Instructions: Students choose the correct answer, then discuss them with the teacher.

1. Which disease is the leading cause of death for women of reproductive age worldwide?
a) HIV b) hepatitis c) tuberculosis

2. ... is the continent with the hungriest people – two thirds of the total.
a) Africa b) Asia c) South America

3. Which is the most important and widely used renewable source of energy?
a) hydropower b) solar energy c) wind power

4. How many young people worldwide lack basic literacy skills?
a) 96 million b) 111 million c) 103 million

5. About one in five persons in developing regions lives on less than ... per day.
a) $ 1.25 b) $ 2.00 c) $ 1.85

6. What is the main contributor to climate change?
a) transportation b) energy c) waste

7. Among the institutions most affected by corruption are the judiciary and ... .
a) religious bodies b) media c) police

8. How much food is wasted every year?
a) 1.3 billion tonnes b) 1 billion tonnes c) 1.5 billion tonnes

9. How many per cent of the world oceans are heavily affected by human activities, including pollution, depleted fisheries, and loss of coastal habitats?
a) 40 per cent b) 60 per cent c) 25 per cent

10. Due to drought and desertification each year ... hectares are lost (23 hectares per minute), where 20 million tons of grain could have been grown.
a) 10 million b) 12 million c) 7 million

Sources used: http://www.un.org/sustainabledevelopment/sustainable-development-goals/

Answer key:
1. a
2. b
3. a
4. c
5. a
6. b
7. c
8. a
9. a
10. b

The new life of a plastic bottle

Age: 15+
Aims: raise students' awareness about the harm that plastic waste does to the environment; motivate students to think about the ways how plastic waste can be reduced; remind students that creativity is one way of solving any problem.
Necessary items: students will need a plastic bottle (assignment is done at home); teacher needs to print the worksheet “The new life of the plastic bottle”.

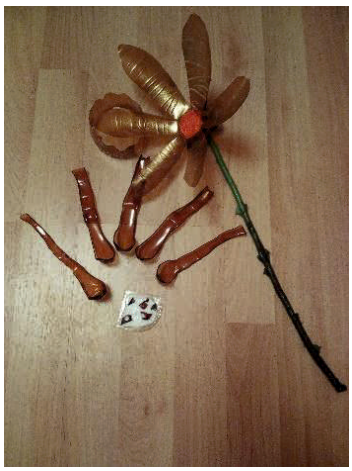
Instructions for the teacher:

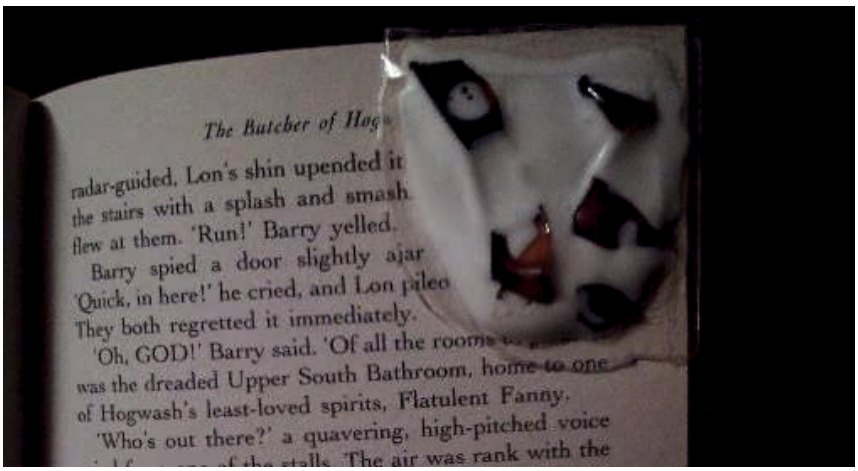
Introduce students to the facts given on the worksheet. Ask if they have heard about the harm plastic bottles can do to the environment. Allow students to share the facts they have heard or learned about before.

Give students time to think and answer the questions in the section “Question time”. Ask students to share their answers.

Explain that at home students have to find a plastic item that would normally be thrown out (like an empty plastic bottle). They have to transform the item into something useful or a piece of art. Students have to bring the transformed item to the next class. A small exhibition would be a great motivator for students to think of something special.

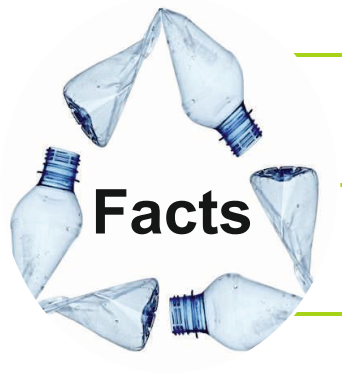
Students might also be asked to bring a plastic bottle (or another item) to school and have a master class with the teacher. Videos like
https://www.youtube.com/watch?v=edXimuzIVhk&t=33s
and https://www.youtube.com/watch?v=xEAOvFG1AmM
might be used for inspiration. Here are some examples:





Student's worksheet

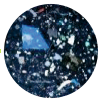
The new life of the plastic bottle



Plastic never goes away
Plastic is a material made to last forever, yet 33 percent of all plastic - water bottles, bags and straws - are used just once and thrown away. Plastic cannot biodegrade; it breaks down into smaller and smaller pieces.

Plastic affects human health
Toxic chemicals leach out of plastic and are found in the blood and tissue of nearly all of us. Exposure to them is linked to cancers, birth defects, impaired immunity, endocrine disruption and other ailments.

Danger to aquatic life
Every square mile of ocean has 46,000 pieces of plastic floating in it. That is why over a million sea birds, whales, seals, dolphins, sea turtles, and so on die from plastic debris that ends up in our oceans and seas. 100,000 sharks are also part of the death toll. As a heartbreaking video of Midway shows us, plastic ends up inside these animals (especially birds), which can lead to their deaths. The impact of plastic pollution in our oceans and ecosystems creates chaos for the environment.



Plastic threatens wildlife
Over 260 species, including invertebrates, turtles, fish, seabirds and mammals, have been reported to ingest or become entangled in plastic debris, resulting in impaired movement and feeding, reduced reproductive output, lacerations, ulcers and death.

Sustaining the petroleum industry
The production of plastic for the U.S. alone uses 331 billion barrels of petroleum, equal to 5 percent of the national consumption of petroleum. Petroleum production and its use plays a harmful role in polluting the environment, as its use contaminates the water and air.

Source: https://plasticpollutioncoalition.zendesk.com/hc/en-us/articles/222813127-Why-is-plastic-harmful- and https://creeklife.com/blog/six-reasons-why-plastic-is-bad-for-the-environment/

Question time

How many plastic bottles do you use per week?

What do you do with the used plastic bottles?

How can you reduce the amount of used plastic bottles?

Get creative

Use any kind of plastic item (bottle, plastic bag, etc.) that would normally be thrown out

Get creative and change this item into something that would not be thrown out

The Systems Game

Age: 15+
Aims: experience behaviour and traits of a system. See that there are more than only objects (students) in a system. The behaviour of the system over time is constituted as well by the relationships between the components (students) of this system.
Necessary items: room for 12-24 participants in one group
Description: While walking randomly in the room, each student chooses two other persons, without letting anybody know about the choices. When the game starts, each moving participant tries to stabilize a equidistant relationship in the imaginary triangle (some people call this game „triangles“ therefor). It is very rare that the system gets into a equilibrium (freeze).
So after a reasonable time, at least 5-10 minutes, the facilitator has to put an end to the system in motion. Then start a discussion by questions like: How was it going? How did you feel? Which observations were made?
The facilitator should have an idea about the focus of the debrief session: Is it more about strict Systems Thinking (components of a system: objects, relationships, → who follows whom, delays, behaviour over time) or is it just a opener about nature and web-of-life, or a starter to think about social innovation.
This game can have different variations which you can see in the links below.

Sources:
http://reospartners.com/wp-content/uploads/2015/07/Reos-Partners-Toolkit-Module-9-The-Systems-Game.pdf
https://workthatreconnects.org/?s=systems+gam+e
https://scied.ucar.edu/sites/default/files/SystemInMotionMaster.pdf

Opinion Barometer – Exploring what participants know

Age: 16+
Aims: to give the facilitator an idea of how much the group knows about the topic and what views they hold.

Necessary items: room
In this activity, participants are asked to position themselves on an axis according to the extent to which they agree with statements on the topic of growth. The idea is for them to choose a position spontaneously, relying on their intuition.

This activity can be adapted to other topics as well.

Description:
Please see full details of instructions here: https://www.endlich-wachstum.de/wp-content/uploads/2016/02/Chapter1-Opinion_barometer.pdf

Peak Oil Alarm - everyday life and consumption of oil

Age: 16+
Aim: Motivate students think critically about the issue of peak oil and its ubiquity in the world and in one's everyday life.
Necessary items: Make copies of the „Peak oil “ story and role cards. They can be downloaded from:
https://www.endlich-wachstum.de/wp-content/uploads/2016/02/Chapter2-Peak-Oil_Alarm-Text.pdf and
https://www.endlich-wachstum.de/wp-content/uploads/2016/02/Chapter2-Peak-Oil_Alarm-Role-cards.pdf

Instructions:
This activity is started by reading a short story about peak oil. Then the role cards are distributed to the students and the „Peak oil text“ is read for the second time. When students hear their words on the cards, they interrupt the story and read the text from the cards. This kind of the method promotes discussion about the issue of peak oil and students have opportunity to share their thoughts and doubts about ecological limitations on local and global level.

Full description of this activity can be found here: https://www.endlich-wachstum.de/wp-content/uploads/2016/02/Chapter2-Peak_oil_alarm.pdf

The Story of Stuff – film about the ecological limits of our economic model

Age: 16+
Aim: Promote discussion about limits of planet's ecological resources in the context of economic growth.
Necessary items: Laptop, projector, A4 paper, video "The Story of Stuff".
Instructions: Before watching video "The Story of Stuff" some brainstorming about ecological limits to economic growth can be suggested. Participants are invited to look at local and global challenges. Some essential points can be summarized on the paper for later discussion. This video can be a good initiator for a discussion about different dimensions of sustainable development in examining one's understanding of ecological, social, economic, cultural and political aspects and their interconectedness on local and global level.
As a logical continuation could be watching another video "The Story of Change" at some later time. This could lead to a wider discussion about active participation of being a consumer and responsible citizen as well.

For full details and variations of the activity „The Story of Stuff" see: https://www.endlich-wachstum.de/wp-content/uploads/2016/02/Chapter2-The_Story_of_Stuff.pdf

Who can change things - Opportunities for action and influence on different levels

Age: 16+
Aims: Tohighlight the complexity of change and motivate students' active participation in it.
Necessary items: Markers, coloured moderation cards, paper for arrows and downloadable chart:
https://www.endlich-wachstum.de/wp-content/uploads/2016/02/Chapter5-Who_can_change_things1.pdf

Description: In this method, participants seek to imagine how change can be effected, who exerts influence and in what way, and what opportunities and obstacles are in place. To this end, the participants map out a "landscape of actors" in the room. They assume the perspective of important actors who contribute to social change in the context of national states on different levels. They examine opportunities for action and influence on and between these levels and discuss the power relationships which govern them.
This game holds the societal perspective to „Small World of Economic Growth", which is about the complementary individual view.

For full instruction details, see https://www.endlich-wachstum.de/wp-content/uploads/2016/02/Chapter5-Who_can_change_things.pdf