



gaia
YES!

**YOUTH EDUCATION
FOR SUSTAINABILITY**

Curriculum Companion

www.esd.college

Gaia YES!

Youth Education for Sustainability Curriculum Companion

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CURRICULUM COMPANION

Summary

In the summer of 2017, Gaia Education and Gaia Kool in Estonia organised an international workshop that brought together organisations that had been using and developing the Gaia Education Ecovillage Design Education (EDE) curriculum in their own formal and informal educational settings with youth and children. Participants from many countries (including Brazil, Argentina, Spain, Estonia, Scotland, England and India) gathered to share their experiences and ideas and help develop materials to make the curriculum more accessible to youth educators.

In 2020, those educators from the group based in Europe wrote a project proposal for Erasmus Plus funding. In September 2020, Erasmus Plus approved the project proposal and with the funding from Erasmus plus, the project was launched.

In the first year, the group particularly wanted to form a picture of all the examples of where the GAIA education curriculum was used to work on learning for sustainable development with young people. Both formal and informal.

Several seminars were held in the first year to form this picture. In addition, an eight-week project was organised at the Ecolyceum in Deventer where more than 60 students studied Sustainable Education. The students reflected on the most desirable sustainable education that would match their expectations about it. The students also conducted research within their own programme on learning for sustainability and prepared a strength/weakness analysis on it. In addition, the students looked for good examples of other schools in the field of learning for sustainability and interviewed school leaders about them. The results of the students' research were presented at a Gaia YES seminar.

The second year worked on how organisations and schools can promote learning for sustainable development within their own organisations in an accessible way. To this end, a Holistic curriculum was created, with four sustainability modules and a total of 20 sustainability themes. For each theme, head, heart and hands goals have been described. Work has also been done on a supporting website, with materials for both educators and students.

This Curriculum Companion describes in steps how you could implement the Gaia YES curriculum within your own organisation or school.

The educators who worked on this wanted to develop a method and matching materials where schools and organisations could start implementing the holistic curriculum in an accessible way. They drew inspiration from Gunter Pauli's story-based learning method.

In the Netherlands, a group of writers wrote three to four short stories, at 'gymnasium' school level, suitable for young people between 14 and 19 years old, for each sustainable Gaia YES theme.

At the same time, work has been done to implement these stories within education. The group of developers who have been working on the implementation found out that the Gaia YES curriculum is so big and extensive that it is difficult to grasp all at once. Therefore, Gaia YES theme cards and playful activities have been developed to help explore the sustainable themes and better understand their interrelationships. With these, a start can be made within any setting working with young people and learning for sustainable development.

In addition, a story-based learning method has been devised to match the learning objectives and pedagogy of Gaia YES. This story-based learning method aligns with the four sustainable modules in the Gaia YES curriculum and corresponding sustainable themes and learning objectives.

Practical stories were sought to match the sustainability themes and their learning objectives. In particular, the writers looked for stories that exemplify an experience or experiences of a more sustainable way of life, appealing to the listener's own desire to have such an experience in their own life. Examples that connect to the living world of young people. This forms the heart of the method.

In addition, a step-by-step plan has been worked out on how to go from a practical story to describing a sustainability challenge. This challenge can then be further elaborated within projects/project education, with the final goal of a presentation for a wider audience. This allows education to reach a wider range than just one's own organisation or school. The step-by-step plan is a concept which can of course be adapted to any desirable learning method.

Of course, the stories described on the website are just a beginning. The best outcome of Gaia YES is if teachers and trainers around the world start writing their own local stories and developing local projects and sharing them with each other. This way, a global learning community can emerge, where students, teachers, trainers and sustainable experts around the world can inspire each other!

The structure of the Curriculum Companion

1.1 Function of the Curriculum Companion

The function of the Curriculum Companion is:

- A digital friend who shows you the ways to implement sustainable education within your organisation from a holistic viewpoint
- A step by step guide to the tools available to implement sustainable education
- Tips and inspiration for sustainable and holistic education
- Individual flexible teaching elements that you can turn into your own learning project

1.2 Components of the Curriculum Companion

The implementation of the curriculum starts at a low level and works its way up to more and more complexity.

The Curriculum Companion has the following structure:

Where are you now?

What is your starting situation? What do you want to work towards? Explanation of how the school development tool, designed by Silke Weiss, can help to determine the initial situation, the desired situation and the first steps towards the desired situation.

Developing a sustainability vision within your organisation

Develop a sustainable vision for your organisation using the Mural Regenerative Pentad, the 17 Sustainable Goals established by the UN and the learning outcomes of Gaia YES.

Certification by Gaia Education

Gaia Education has drawn up guidelines for certification that can help you make choices about what you as an organisation would like to and can focus on in profiling the implementation of education for sustainable development.

Creating a curriculum for sustainability

Different ways in which different schools have implemented a sustainability curriculum.

Integrating Gaia YES by story based learning

Explanation of the story based learning model and the Gaia YES approach.

Explanation of Story Based learning approach for Gaia YES

The story based learning model for the Gaia YES curriculum is explained step by step

Your role as facilitator of Gaia YES

Tips on how to fulfil the role of facilitators in the framework of Gaia YES projects.

Process support

Tips on the design and process management using SCRUM for Gaia YES projects.

How do you evaluate learning experiences?

How do you assess learning outcomes of Gaia YES?

The different tools you can use in the implementation of Gaia YES

Explanation of the website, the e-learning environment for students, the online teacher's guide and the assignment database.

Gaia YES experiences in practice

Experiences with the lesson plan, the world stories relay and the workshops during the multiplier event.

How we worked within the Erasmus+ project to develop Gaia YES

Explaining the methods and methodology we used within the two-year Erasmus+ project.

1.3 Principles of the Companion Curriculum

We have taken the following points of departure into account when compiling the Companion curriculum:

- Coherent and complete framework for developing sustainable holistic education
- Appropriate to the Gaia YES curriculum and requirements of Gaia Education
- Easy entry for students and teachers
- Designed in such a way you can work towards ever greater complexity in learning
- Flexible and customisable for each learning situation
- Intuitive, and therefore can be used by both teachers and students with little experience and knowledge of sustainability
- Supported by a hybrid learning environment with matching worksheets that can be found digitally in the e-learning section of the website as well as printed out in the form of a printable PDF
- Open source

2. Where are you now?

2.1 Know yourself and your organisation

Everyone deals with sustainable development differently. Also within schools, there is great diversity in how sustainable development is integrated. From hardly any attention for sustainability within the organisation to a very broad approach to sustainability that even goes beyond the school walls.

A frequently heard problem among teachers and youth coaches when starting to integrate sustainability into their own programme is that they feel they are alone within their own organisation. At first, they feel little connection with other colleagues. Because it is often 'new' to young people that so much attention is paid to sustainability, you are faced with a 'storm phase' at the start, during which young people may be dismissive of the themes and there may be resistance. It is then good to realise where you stand within the organisation. And how you can strengthen your position and your lessons. It helps if you can seek support from teachers within your school and within other organisations and schools. Together you are stronger!

There are also schools and organisations that have realised a very strong and sustainable programme together and are very successful at it. Because the entire school or organisation is involved in sustainability, from a broad school approach, the young people have become accustomed to the sustainable themes. They often see the practical examples on a daily basis at their school or within the organisation. Within these schools and organisations, it is important how to keep in touch with what is going on in society in an innovative way, and how to find your own place in it.

2.2 The school development tool

A tool that can help you determine your place in the school is the school development tool developed by LernKulturZeit Akademie. Silke Weiss regularly gives workshops on this tool.

Silke Weiss (www.lernkultur.info) took us on a journey through the complexity of change during a Gaia YES seminar and shared insights on how to work with change in schools. Our school systems are collapsing because they no longer fit our current society. We live in times of VUCA (Volatility, Uncertainty, Complexity, Ambiguity) and we really need to think about what changes we need, to create Vision, Understanding, Clarity and Agility.' With examples of how Kodak, BMW, IBM Watson and AirBnB changed the way we interact with each other, how we get around, how we discover illnesses and book our hotels, Silke showed us how disruptive developments are usually underestimated. The same happens when we introduce changes at school.

To help schools transform into a sustainable learning culture, Silke Weiss has developed a development tool based on Ken Wilber's four quadrants, which refer to the individual, collective, inner and outer structures of a culture (see illustration). "If something changes on the outside, there will also be inner changes that need to be looked at. For example, if you change the way children learn to a self-organised approach in a free space, it is bound to create fear and resistance among teachers." In other words, if one of the quadrants changes, the whole system will change.

To understand how the four quadrants work in practice, we need to examine four basic questions about learning.

- What is my motivation to learn? (inner - individual)

- What strategies and methods do I use to learn? (outside - individual)
- Which atmosphere supports my learning? (inner - collective)
- What structures/environment do I need? (outer - collective)

Another important tool that Silke Weiss talked about is Spiral Dynamics. It is based on research in psychology and stages of evolution. Spiral Dynamics gives you insight into the value systems present in the school. It is especially interesting for school leaders to understand multiple perspectives, appreciate the differences in values and find solutions that work for everyone. A questionnaire allows people to identify the value system from which they operate. In this way you can identify the cultural focus of your community and decide where you want to go collectively. Ken Wilber's four quadrants and Spiral Dynamics are briefly explained below.

Ken Wilber's four quadrants

Ken Wilber has sought a holistic approach with which in fact almost everything can be analysed. He has managed to integrate Eastern wisdom and Western wisdom. It is based on four perspectives from which you can observe:

1. Your own position. The 'I' form.
2. The position of how another looks at you, what the other sees you doing. The 'he, she' form.
3. Yourself in a group. This can be your family, your school, your organisation, the municipality where you live. This is the 'we' form.
4. And the group you are in, in turn, is a part of the society on planet Earth. In other words, there is a society within which the group falls. Often referred to as 'it'.

You often see that in innovations, attention is paid from a certain perspective. The other perspectives receive less or no attention. This can slow down the start of an innovation and lead to resistance. By paying attention to all four perspectives from the start, you also get more support and power to let the innovation take root within the organisation.

The school development tool shows for each of the four perspectives four areas. This gives a total of 16 areas that you can think of when implementing a new educational innovation.

The sixteen areas:

'I am' form	'You' form
<ol style="list-style-type: none"> 1. Attitude to life 2. Motivation 3. Creative power 4. Trust 	<ol style="list-style-type: none"> 1. Self-management 2. Leadership style 3. Role in the group 4. Conflict Management
'We' form	'It' form
<ol style="list-style-type: none"> 1. Communication culture 2. Working atmosphere 3. Meaning 4. Participation and relationship 	<ol style="list-style-type: none"> 1. Distribution of means and resources 2. Information 3. Profile 4. Form of communication

Spiral Dynamics

Development often takes place in phases. For example, from seed to plant. Here you can see that the seed germinates, makes a first radicle, a first stem, and from this stem the first two leaves emerge, the stem grows further and makes several culms.

When you look at the development of organisations, you can distinguish different phases. In the theory of Spiral Dynamics, developed by the American professor of psychology Clare W. Graves, these phases are described as colours that follow each other in a spiral. Each colour has its own typical developmental characteristics, values and standards, challenges and opportunities for growth. The phases that are distinguished in the school development model are those that are most applicable, and which describe the development from regular education to holistic education. Below is a brief summary of the various phases related to education. The summary is not complete and is described globally. In practice, these developments also run through each other within an organisation. There is no school that fits completely within a developmental phase. In the workshops given by Silke Weiss, you can develop many more insights within these five development phases. There are also numerous books written to explain the theory of Spiral Dynamics.

The phases of Spiral Dynamic

Red: these are schools and organisations with a strong leader. The leader decides. The others follow the imposed policy. In this phase, followers of the policy may experience dissatisfaction with the policy. Subcutaneous tension may arise. There may be competition among them to achieve the position with the most power. This phase is based on the principle that the strongest wins. There may be a struggle to be 'right'. The leader determines the working methods and the manner of assessment. There is an insular culture within education. The challenge for these schools is to work on transparency, openness, trust, order and clear guidelines.

Blue: these are schools and organisations that value order and structure. There is a clear hierarchy, in which roles and tasks are defined. There is little deviation from the curriculum. The teaching is rigidly defined; there is little room for personal input. Progress within the learning process is often made through tests, the awarding of grades, and report meetings. The challenge for these schools and organisations is to do more with the talents of both teachers and supervisors and the students.

Orange: these are schools and organisations that value talent development and success. In addition to the regular tasks that everyone in the organisation has, there is also room to develop something based on your own talent. You often see talent streams develop at these kinds of schools and organisations. These are directions within the curriculum that students or young people can choose. Such as performing arts, ICT, graphic design, science, technology, care and creative skills. In addition to assessing the learning process through tests and grades, attention is also paid to the development of competencies. This development is often tracked through portfolios and student monitoring systems. The school or organisation profiles itself visibly to the outside world. For example, by joining a hallmark such as Ecoschools or Technasium and through publications. The challenge for these schools is to do more with the community in and around the school.

Green: These are schools that consider community building and contact with the community around them important. The pupil is often central to these schools. Education focuses on personal learning. In many community schools, time is taken to start each morning together. In the opening of the day, what is happening in society or at school can be shared. Also, how everyone feels that

day and what he or she needs can be shared. This time is also used to look at planning and there is sometimes room for individual guidance. Reflection on the learning process is considered very important. This can be done through final presentations, reflection reports and mentor talks. Reflection can also take place at the end of a lesson or day. Some community schools work with learning squares and specially designed rooms where work and learning can be done individually or in groups. External experts are involved in the teaching programmes. In this way, the knowledge and experience of the community surrounding the school or organisation is used. The challenge for these schools is to extend education and their network outwards, and to organise education not only in the school but also in other places.

Yellow: these are schools that are hybrid in organisation. Part of the learning takes place at school or within the organisation and part takes place outside the school or organisation. For example, learning can be organised in nature, in a museum, in a care centre, at an NGO or nature centre, at a business or at home. Learning communities are often used. A learning community is a composition of students, teachers and experts who work together on a challenge or problem. All participants in a learning community learn from the process of finding a solution to the challenge or problem together. Teachers, experts and students can contribute to the process and are equal to each other. The learning process itself is seen as important. The process is often supported by a method, such as scrumming. The interim sharing of results and intermediate products and adjusting the course set out to achieve the goal is a characteristic element. Lesson times can be flexible. The learning programmes to be followed are often tailor-made. Coach conversations, final presentations and reflection reports are a basis for following the student in the learning process. Often, the results of learning processes are incorporated in presentations that are also attended by external stakeholders. The challenge for these schools is to keep an eye on structure and the raison d'être of the organisation within the flexible way of teaching.

You notice that yellow schools are actually challenged again with characteristics that fit the blue schools. This starts a new development circle, only one layer deeper.

Test your school with the help of the school development tool in Excel

How does the school development tool work?

For each of the sixteen areas corresponding to Ken Wilber's four perspectives, development steps have been described based on the vision of Spiral Dynamics. By filling in a questionnaire, you can discover in which phase you or your organisation is in each area. When you have completed the questionnaire, Excel makes a diagram of this. The more the diagram is filled in towards the outside, the more the organisation or you yourself work from a holistic vision. Dents in the diagram show where you should start giving attention. You can use this diagram to see where you stand within the development of an organisation and you can also compare this with others in your organisation. The overall picture, which can be calculated by averaging the results of all members of the organisation, gives a picture of the development of an organisation. You can find the questionnaire on the website.

2.3 The result in a radar diagram

In the last page of the Excel file of the school development tool, you will find a schematic overview in the form of a radar diagram of the sixteen areas and the five development stages. It provides insights to find out where you stand per area and where your own development opportunities lie. It can also give you insight into where you stand in relation to your organisation. When there is a big difference in development, you have the choice to see yourself as an acupuncture needle within

the organisation, to help transform into a more holistic approach to education. You can also look for more like-minded people or organisations that are more in line with your own development, because there are too many differences in vision, norms and values. Either way, it is good to be aware of what your place and function is in this.

3. Developing a sustainability vision within your organisation

3.1 Developing a vision for sustainability

What is sustainable? It's easy to differ in opinion on that! What is feasible for one person is a real challenge for another. When we talk about sustainability, it is mainly about being aware of all the aspects that play a role in the sustainable choices you make. This can be very close at hand, in your personal life. Or a little further away, in what you offer in terms of sustainability education, for example. Before you start a project for young people in the field of sustainability, it is good to develop a vision for yourself, or with your team, that suits you or your organisation, so that you are all on the same page.

In the Gaia YES project we have developed a shared vision of sustainability with the help of the 'Mural Regenerative Pentad'. This is a pentagram created in the program Mural. The pentagram focuses on five questions:

Objective: What do we want to achieve with the project?

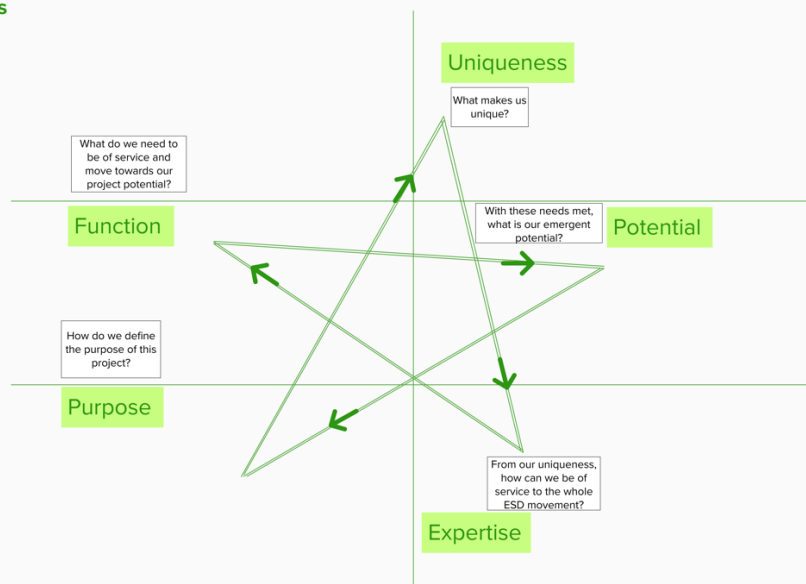
Uniqueness: What makes us/the project unique?

Expertise: From our own uniqueness, what sustainable development can we support?

Function: What service(s) can we provide to support sustainable development?

Potential: When we deliver the services for sustainable development, what have we potentially achieved?

Regenerative Pentad: Development of Potential through Lever Points



By working in the programme Mural, participants can add their own answers to the questions using sticky notes. After all participants have answered the questions, they can look at each other's answers and search for the common denominator.

The Mural Regenerative Pentad is on the website at Tools.

3.2 The 17 UN Sustainable Development Goals

The seventeen Sustainable Development Goals (SDGs), drawn up by the United Nations (UN), can help you formulate which sustainable development you support with your project. The Sustainable Development Goals are also known as SDGs or Sustainable Development Goals. These seventeen goals were drawn up to make the world a better place by 2030. The SDGs were agreed upon by the countries affiliated with the United Nations (UN). The goals were established based on global input from organisations and individuals, and therefore have a broad support base.

The Sustainable Development Goals started in 2015 and run until 2030. They are a global compass for challenges such as poverty, education and the climate crisis. Behind the seventeen goals are 169 targets. These make them even more concrete. You can read more about the 17 Sustainable Development Goals at:

For the Netherlands: <https://www.sdg nederland.nl/sdgs/>

For Europe: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

An overview of the 17 targets

SDG 1 : No poverty. End poverty everywhere and in all its forms

SDG 2: No hunger . End hunger, achieve food security and improved nutrition and promote sustainable agriculture

SDG 3: Good health and well-being. Ensure good health and promote prosperity for all ages

SDG 4: Quality education. Ensure equal access to quality education and promote lifelong learning for all

SDG 5: Gender equality. Achieve gender equality and empowerment for all women and girls

SDG 6: Clean water and sanitation. Ensure access to sustainable water and sanitation for all

SDG 7: Affordable and sustainable energy. Ensure access to affordable, reliable, sustainable and modern energy for all

SDG 8: Fair work and economic growth. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

SDG 9: Industry, innovation and infrastructure. Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation

SDG 10: Reduce Inequality. Reduce inequality within and between countries

SDG 11: Sustainable cities and communities. Make cities and human settlements inclusive, safe, resilient and sustainable

SDG 12: Responsible consumption and production. Ensure sustainable consumption and production patterns

SDG 13: Climate Action. Take urgent action to combat climate change and its impact

SDG 14: Life in the water. Preserve and make sustainable use of the oceans, seas and maritime resources

SDG 15: Life on land. Protect, restore and promote the sustainable use of ecosystems, manage forests sustainably, combat desertification and land degradation and halt the loss of biodiversity

SDG 16: Peace, justice and strong public services. Promote peaceful and inclusive societies for sustainable development, ensure access to justice for all and create effective, accountable and open institutions at all levels

SDG 17: Partnership to achieve goals. Strengthen means of implementation and revitalise global partnership for sustainable development

Sustainable development goal 4.7

We would like to explicitly mention one target of Sustainable Development Goal 4 and that is target 4.7:

By 2030, ensure that all pupils acquire the knowledge and skills needed to promote sustainable development, including through education on sustainable development and sustainable lifestyles, human rights, gender equality, the promotion of a culture of peace and non-violence, global citizenship and an appreciation of cultural diversity and of culture's contribution to sustainable development.

This target can help develop your vision of sustainability education.

The new curriculum in the Netherlands is based on these seventeen sustainable development goals in the domain of Man and Nature under the major assignment questions for the Sustainable Development building block.

3.3 The learning outcomes of GAIA Education

Gaia Education has identified 20 themes within the four dimensions of ecological, economic, social and cultural that are applicable to achieving the 17 UN Sustainable Development Goals. For each theme, they have described learning outcomes in Head, Heart and Hands goals.

The curriculum is based on the EDE curriculum. This curriculum was developed by the GEESE group of Gaia Education for adult education in the field of designing regenerative communities from a holistic perspective. In the elaboration of the Head, Heart and Hands objectives, a connection has been sought and described in which all eight multiple intelligences are addressed from the perspective of learning with the head, heart and hands.

The learning outcomes are described both in the curriculum and in a corresponding Excel file. The Excel file is useful for compiling projects based on the curriculum.

The themes are:

The curriculum with learning outcomes for all Head, Heart and Hands objectives and the Excel file with the learning outcomes described by theme can be found on the website.

WORLDVIEW & LOCAL WISDOM MODULES	SOCIAL MODULES
Worldview & Story-telling	Communication & Social Skills
Who am I? Learning to know oneself	Leadership & Empowerment
Planetary & Personal Health	Building Community & Embracing Diversity
World View & Language	Heritage & Local Wisdom
Connection to Nature	Education & Social Transformation
ECOLOGY MODULES	ECONOMIC MODULES
Whole Systems Approach to Regenerative Design	Shifting Global Economy towards Sustainability & Regeneration
Affordable Clean Energy	Community Banks & Currencies

Water Systems	Right Livelihood
Local Food Systems	Revitalising Local Economies & Social Innovation
Green Building & Retrofitting	Legal & Financial Issues

4. Certification by Gaia Education

4.1 Why certification by Gaia Education?

Gaia Education has been working with organisations and trainers from 55 countries since 2005. The adult curriculum has been put together through years of collaboration to create a curriculum that has global support.

Gaia Education has sought to cohere the four dimensions ecologically, economically, socially and culturally to enable you to take steps towards designing a regenerative community.

Collectively, we stand at a crossroads, a turning point in history where you have the power to choose a regenerative future. We understand that it can seem overwhelming - that's why we want to empower you to become an active change agent in your local community or school, impacting communities on a global scale. By joining Gaia Education you are supporting this movement and raising the profile of your organisation to work together professionally to build this regenerative future; a future where future generations can thrive.

4.2 What are the certification requirements?

Below are the proposed certification requirements by Gaia Education. These certification requirements are still under development and may change over time. You can see them as spearheads for your organisation. Something you can work on step by step. The most important thing is that there is an intention to work towards education that is based on a holistic approach and the learning outcomes established by Gaia YES. In dialogue with Gaia Education these steps can be taken together. Gaia Education supports this process with coaching and offering continuing education for teachers and supervisors. You can read a detailed description of the certification requirements in Annex 12.

Table of Gaia Education certification requirements

Curriculum
⇒ All five dimensions of sustainability cover the curriculum
⇒ In line with the SDGs
⇒ Developing SDG competences.
⇒ Training of teachers
⇒ Integration of GAIA into curricular (and extracurricular) activities of different subjects
⇒ Constructive teamwork

⇒ Specialised courses in SDG skills, such as permaculture gardening
Pedagogical principles
⇒ Transformative learning
⇒ Self-directed learning
⇒ Integrative transdisciplinary learning
Didactic methods
⇒ Project-based learning
⇒ Learning in teams
⇒ Teaching in teams
⇒ Hands-on learning
Outreach
⇒ Local community projects
⇒ Volunteer projects
⇒ Regenerative environmental projects
⇒ Bioregional and international partnerships
Environmental impact
⇒ Ecological and carbon footprint, including travel
⇒ Impact on water cycles
⇒ Effect on material cycles
⇒ Impact on agro-ecosystems
Honesty and well-being
⇒ No discrimination
⇒ Fair admissions (including a blind-needs procedure)
⇒ Fair working conditions and remuneration for all staff
⇒ Attention to holistic well-being

5. Creating a curriculum for sustainability

Sustainability itself is not really a subject that is taught in various countries in Europe. You see that sustainability is often placed under several subjects. It is an exception when a school or organisation chooses to create a separate subject for sustainability. However, many organisations lack an overview of who does what in the area of sustainability education. As a result, there is a lack of coherence between the subjects and the sustainability education on offer. On the other hand, the lack of overview means that essential knowledge and skills in the area of sustainability are not addressed within the curriculum.

An important first step is therefore to map out who does what in terms of sustainability education.

5.1 Yourself as a role model

The very first step is often your own. You can consider yourself a role model for students. What students see every day becomes 'normal'. You look within your own possibilities where you can implement sustainability. Whether that is in your role as a teacher, or in your role as a manager of an organisation. You look at what you already do and what you could change in a sustainable way. The curriculum can be a source of inspiration. In the database and in the digital environment for teachers, you can find countless practical examples.

The simplest step for a teacher is to look at your own lesson plan and ask yourself what you could change in a sustainable way. As an example: Every science teacher explains the water cycle. You can adjust this theory in a sustainable way to include, for example, the students' own water consumption, the rainproof measures that students take themselves and also look at the rainproof measures of the village or town where the students live.

As a manager, you could think about the school's drinking water policy and the rainproof measures the school takes. For example, as a school you could promote the drinking of water. Promote it, by letting students bring their own empty biddon, which they can fill with water themselves. As a school, you could install clean, cool drinking water taps. In addition, the school could design part of the schoolyard to be rainproof. That means removing tiles and putting in green plants. You could combine this with a school vegetable garden or a food forest in the schoolyard, provided that there is space for it.

5.2 Find colleagues who would like to work with you

Implementing sustainability can be contagious. By talking about it, cross-pollination can occur. That way, you can work on cross-curricular education, just by having a cup of coffee and exchanging ideas! The best ideas often arise at the coffee table.

If you want to work together, share it with others. In practice, the best performances turn out to be those involving the supervisors or teachers as well as the management team.

And if it is a success...

Celebrate your success. Be happy with every small change you can make. Small changes can eventually create a tipping point in the organisation. And when that turning point is reached, it is time to work with the entire team, i.e. managers and supervisors/teachers together, to make a plan

that offers more coherence, tries to avoid overlap, can offer more customisation to students, and with which you can present yourself sustainably as an organisation or school.

There are many success stories to be found all over the world. An Internet search for these success stories by students at the Ecolyceum in Deventer yielded some great results in an eight-week project. These stories can inspire and give you ideas of what you could do yourself or as a school. On the website of Gaia YES there is a possibility to network and make contact with others. This is also an opportunity to exchange and inspire each other.

For the Gaia YES project the Gaia schools in Estonia, the youth programme of the permaculture school in Mallorca/Spain, the Gaia schools in Brazil, the Gaia Youth programme in India and the VWO+ programme of the Ecolyceum in Deventer in the Netherlands have been important sources of inspiration.

5.3 Combining the framework of Gaia YES with a regular programme

There are various ways of combining the framework of Gaia YES with a regular programme. We would like to give four practical examples:

1. Gaia school in Estonia combines four days of regular education with one day a week of Gaia YES program.
2. Ecolyceum in Deventer combines four days of regular programme with one day of VWO+ program per week. In the first three years, project-based cross-curricular education is given in the four dimensions of ecology, society, economy and culture.
3. Seven Linden College in Dedemsvaart combines Strong Technique education with learning objectives from the Gaia YES curriculum. An proposal of an outline of this can be found in the appendices.
4. At Keizer Karel College in Amstelveen, many sustainable goals are integrated within the Technasium projects. In the Technasium projects, pupils spend six hours a week working on Research and Design issues from the local environment. Within the Technasium at Keizer Karel College, SCRUM is used to drive the learning processes. An example of a set-up of a sustainable Technasium project 'climate-proof' can be found in the tools section of the website.

6. Integrating Gaia YES by story based learning

6.1 How the idea of implementing Gaia YES through story-based learning came about

During a Gaia YES webinar, Gunter Pauli's work was discussed. This was the start of thinking about how to get students to build knowledge, skills and sustainable attitudes through story-based learning.

Gunter Pauli is the founder of the innovative economic model 'Blue Economy' and author of the same titled book. Blue Economy stands for a thorough and sustainable economic model inspired by nature, where there is no product waste and every outcome of every step in the value chain finds use in the next one. Gunter Pauli has developed a study method, which combines together storytelling, scientific knowledge and learning through experience. This approach helps children to see the world as a holistic interconnected system, and to realise how one thing is connected to another. Through this, children will be able to face and solve complicated challenges, learn to use their creativity towards new clever solutions.

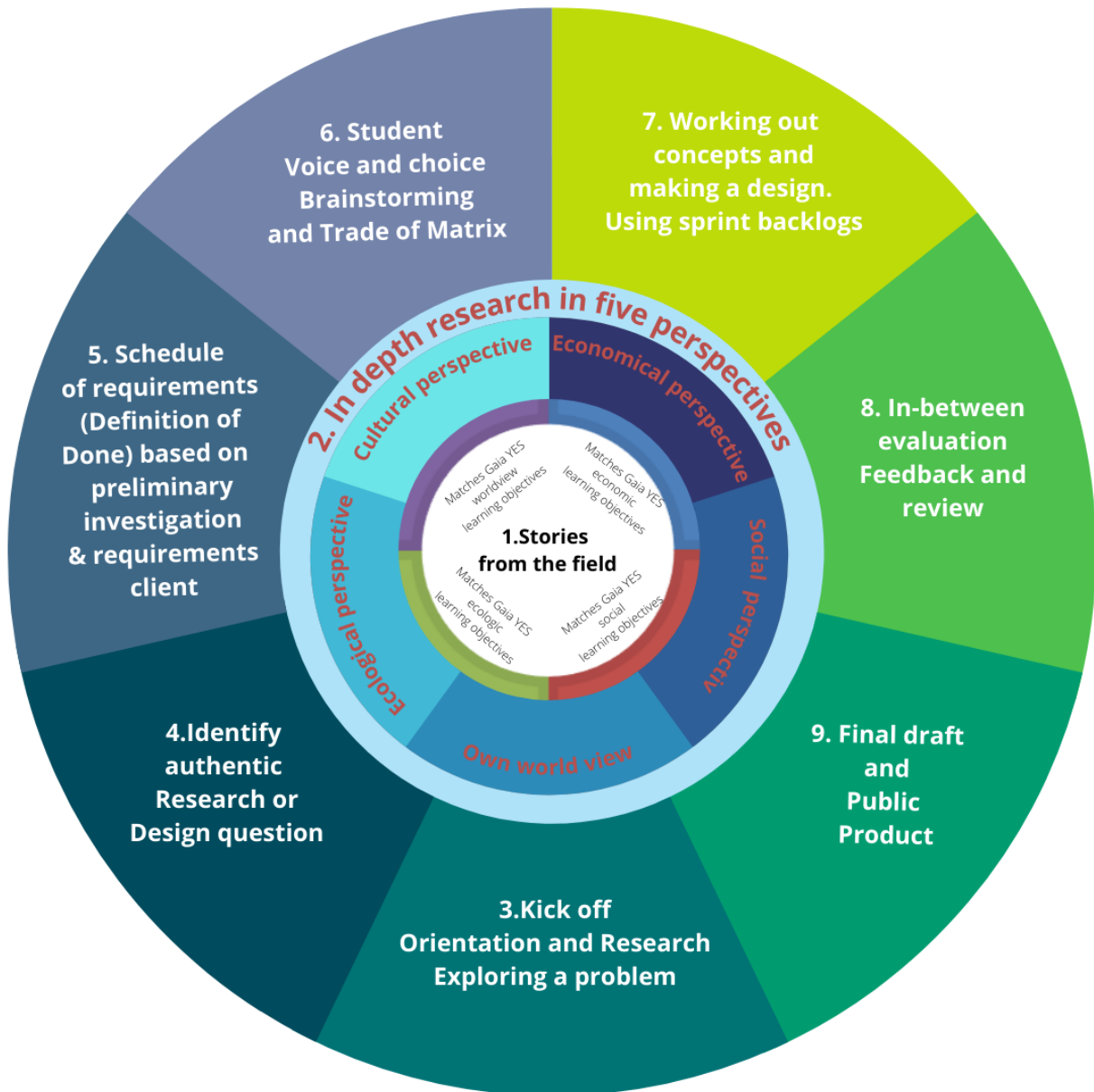
Gunter Pauli's first teachers' course in Estonia was greeted with warmth in the summer of 2020. Together with the Foundation for Future Education, Lilleoru NGO, Gaia Academy, Tallinn University, OÜ Roheline Haridus, OÜ Sustinere, Lets Do It World, JCI GO Koda, Kompostiljon, and Killerkott, Gunter Pauli has translated 12 stories into Estonian. From the Gaia YES project, teachers at Gaia schools and Tallinn University are familiar with Gunter Pauli's work.

This method is good to use both at home and also in school systems more broadly and is already in practice in many schools in the United States, Europe, South America and the Far East. China is using Gunter Pauli's stories and method in schools throughout the country.

The stories written by Gunter Pauli are aimed at primary school children. The stories and his method are an inspiration on how to work on learning for sustainable development from the Gaia YES curriculum within secondary schools as well.

The working group that has worked on this curriculum companion and on the content for the online environment have continued with Gunter Pauli's thinking. In addition, the working group members also looked at the certification criteria from GAIA Education and the wishes of teachers and students during the webinars we held. The working group tried to combine the techniques and principles from project-based learning (PBL), story-based learning, SCRUM and the Head/Heart/Hands goals from the Gaia YES curriculum. From this, a model for story based learning was developed linked to the Gaia YES curriculum. This model is illustrated on the next page.

Story-based learning model for Gaia YES



7: Explanation of Storybased learning approach for Gaia YES

1: Stories from the field. (heart of the model, first circle of the model)

Generate intrinsic interest and interest in sustainable issues through real-life stories within the learning objectives from the holistic curriculum appropriate to the four dimensions - social, ecological, economic and worldview.

The bards of old knew that true transformation takes place in a free spirit. Through stories and songs, the bards took people to subconscious layers, where difficult issues of life and life lessons were revealed with the help of metaphors.

Stories about sustainable issues and sustainable solutions from practice can work just as well! Through openness in the stories, through the recognition in one's own life, an intrinsic interest in the topic can arise.

That is why we have chosen to write several stories per Gaia YES theme from which to choose. Of course, you can also use the stories as inspiration for creating your own local stories!

In a nutshell, why you could and would want to use the stories:

- stories resonate with the content of the holistic curriculum
- stories opens up the inner world of students so that the content of what you want to convey can be better received
- stories amaze and are therefore an ideal starting point for any project'.

"Through stories we learn to perceive the world and make sense of it. Our brain assimilates new information through making connections. It is making connections that makes learning interesting, meaningful and inspiring. Stories are a great way for realising and sensing life's wholeness. Telling stories as a way of teaching goes back a long way as stories were already told in ancient caves by recording events through paintings. It was a way to pass on knowledge, experiences and values, which were vital to sustain life. World's most powerful economic organisation OECD has been studying already for years, which kind of skills should people acquire to do better in life. There are three attributes, which are exactly the same for 2015 and 2020: solving complex problems, critical thinking and creativity." Gunter Pauli

The stories align with the Gaia YES learning objectives.

In the Netherlands, trainers from several ecological projects have written stories that fit the worldview, social, ecological and economic dimensions. The stories are also linked to the main, heart and hands goals of the Gaia YES curriculum. You can find these stories in the student section of the Gaia YES website: www.esd.college.

You can use the stories in various ways. Four examples are described below for inspiration:

- You work with the pictures that go with the cards and first let the students choose a picture that appeals to them from all the pictures that you have printed out in A5 or A4 format. Then you give them the accompanying story to further explore the theme. The accompanying questions can give even more depth.
- You choose a story that fits the theme you are dealing with in class. You can read this story during an opening of the day, an introduction of your lesson, or as an introduction to a discussion in a circle. After the story, you could have a discussion about it and look for

questions that the story raises. You could use these questions as a starting point for further research.

- Together with their coach, students choose a theme they would like to know more about. They start exploring the theme by first reading the three accompanying stories. On the basis of the three stories and the accompanying questions, they delve deeper into the theme.
- Using stories as a start of a project. You choose one or more stories that fit a project you have arranged yourself. You can have the stories read online and ask the accompanying questions. Or you can use the stories in your classroom to explore and deepen the project.

2: In-depth research. (second circle of the model)

Research into sustainable themes to expand perspectives on sustainability using five different perspectives (social, ecological, economic, cultural and I)

Each story is accompanied by five research questions in the five perspectives - social, ecological, economic, cultural and me. By looking at a story from these five perspectives and deepening them, students broaden their own view of the world. At the same time, students acquire a holistic view, by starting to see and understand the coherence and connections in the dynamics between the five different perspectives.

Howard Gardner has described eight different ways to be intelligent.

- **Verbal/linguistic intelligence:** intelligent with **language**.
- **logical/mathematical intelligence:** intelligent with **arithmetic**.
- **Visual/spatial intelligence:** intelligent with **seeing**.
- **Musical/rhythmic intelligence:** intelligent with **music**.
- **Physical/kinaesthetic intelligence:** intelligent with **movement**.
- **Interpersonal intelligence:** intelligent in relation to **people**.
- **Intra-personal intelligence:** intelligent in relation to **oneself**.
- **Nature-oriented intelligence:** intelligent in relation to **nature**.

The inquisitive and deepening questions have been designed in such a way that these multiple intelligences are all addressed when working on the questions.

While working on the assignments, it is useful if pupils can explore in several ways. Via the computer, via books and magazines, via nature, via museums, via interviews with people, and via excursions.

The stories and matching questions create a broad understanding of a theme. When the themes are known and clear to the pupils, they can also look for stories from the local environment within the themes and think up and work out questions from the five perspectives themselves.

3: Kick-off orientation and research and exploring ideas. (third circle of the model)

Learning basic skills and knowledge about sustainability through specific assignments and workshops (to be found in the teacher part of the website of Gaia YES)

In the Gaia Youth Guide several assignments are described that are suitable for young people and that help to understand and integrate basic knowledge and skills about sustainability into their own lives. These assignments are very suitable for use as sub assignments of a project or as workshops within a project in order to give more depth to the project. For each Gaia YES theme at

least two tasks have been prepared and are available. You can find them in the teacher section on the website.

Summarise the preliminary research and indicate own interest in certain topics

There are various ways of getting students to summarise what they have learned in the preliminary research for the project. We describe a number of examples below

- You make an inventory of the topics the students were interested in by asking the class what they have remembered from the previous assignments/story. You write keywords of this on the board.
- You have students compile a list of topics they have remembered from the stories and assignments.
- As a teacher, you compile a list of topics suitable for the story and assignments, and ask the students to tick the five topics that most appeal to them.

4: Identify authentic Research or Design questions. (third circle of the model)

Set up learning groups with the same interest to further explore and elaborate a certain theme

The composition of groups depends on the theme you are dealing with and the goals you want to achieve with group work.

You can focus on:

- Bringing together various different talents within a group, so that a particular research or design question can be elaborated from diversity
- Taking the interest of a topic as a central starting point and bringing together group members with the same interest
- Randomly assemble groups and rely on the synchronicity of the group members

It is best if the groups come about in a playful manner. For example, by sticking dots next to subjects that pupils would like to work on. Or by self-examination and formulating learning wishes and expressing these in the group. Or by using games or spontaneity to create groups.

Learning groups formulate a research question or design question with the help of the knowledge gained in the preliminary study.

5: Schedule of requirements based on requirements from preliminary investigation and client. (third circle of the model)

Through an interview with the client and/or interviews with persons with an interest in developing the problem, a programme of requirements is drawn up. Consideration is given to the sub-criteria that the elaboration may meet upon completion of the research or design: **The definition of Done.** You can find an example of a Definition of Done in annex 1.

6: Student voice and choice. Brainstorming and Trade of Matrix. (third circle of the model)

Students immerse themselves in a challenging theme. They draw up a Trade of Matrix. A trade of Matrix is a scheme where partial solutions to the research or design question are worked out from

the client's criteria. After working out partial solutions, the best combination of the partial solutions is sought. On the basis of this matrix, a choice is made for further research or design.

7: Working out concepts and making a design. Using sprint backlogs. (third circle of the model)

Students elaborate on their research or design question.

While developing concepts and/or creating and improving prototypes, students use sprint backlogs. The elaborations are done in sprints. So a sprint is a step within the elaboration being made. Of these steps, the partial steps are written down. The process of it is kept in a log or an excel sheet.

8: In-between evaluation. Feedback and review. (third circle of the model)

The students present the first prototype or the first elaborations of the research to a supervisor or expert. With the help of feedback, they improve their design or research.

9: Final draft and public presentation. (third circle of the model)

Students present their design or research to a wide audience. The audience may consist of fellow students, parents, clients, neighbours, etc.

8: Your role as facilitator of Gaia YES

8.1 The 6 skills in project-based work

1. Planning and adapting to standards

As a teacher, you create a project or you adapt an existing project from the start to the final presentation. This is based on the standards that a child must achieve within the core objectives of the project (knowledge). So there is a link between the regular learning objectives (set by the government) aimed at learning skills, integrating these learning objectives into the project, and successfully learning these skills during the project

You take the input of the pupils into account, but you guard the line of the project. You also take the level of your pupils into account.

2. Motivating your pupils

Bring your students into a culture of independent working, let them grow into what they do. Be open to research and keep an eye on the quality of the work. This is the best way to motivate students to improve.

3. Managing the activities

Although the pupils have their say and choose what they want to learn, you as a teacher are the one who oversees everything. Together with the pupils you plan the process. You set checkpoints and deadlines and help the pupil to find sources. Especially in lower grades, this guidance will come more from you and will be needed more often. Work towards increasing the pupil's input as you go along. Continue to set high standards for the work.

As a teacher, you use a variety of lessons, tools and instructional strategies to help all pupils achieve their project goals. Those instructions include the transfer of knowledge from the core objectives.

4. Guiding the learning process

Although guiding has a lot to do with the management we discuss above, we will mention this skill separately. Guiding is more about keeping your students motivated. Challenging them to perform as well as possible. Giving compliments. Stimulating them. Transferring knowledge and all the things you already do as a teacher.

5. Assessing the learning process

Evaluate from time to time what a pupil has done or learned. Allow room for input from fellow pupils and also emphasise self-reflection. This is a difficult skill. We are very used to assessing things according to standards that are based on giving a grade. Now you have to judge whether the quality is good enough to present the final product. You can get a lot of support from articles on formative evaluation.

6. Connecting and coaching

Throughout the project, it is the teacher who makes the connection. Together with the pupil, you celebrate successes, stimulate work on the assignment, correct mistakes, and work together towards the final result.

In the next section you will find out more about the teacher as a coach.

8.2 Teacher skills for project-based education

These six skills are described very briefly above. However, they are all elements that you need to master and they are not easy. Teaching a lesson from a method, giving homework and taking a test is a lot simpler. However, this method is as satisfying as, for example, when that somewhat shy pupil gives a catchy presentation about celestial bodies for their parents? The choice is yours.

The teacher as coach

In coaching, your role of imparting knowledge is somewhat relegated to the background. After all, it is the pupils themselves who want to learn something. Even the professional in the classroom cannot take that over from them. Yet your role is no less important. In addition to providing information and inciting accurate observation and reflection, a teacher, if he or she is doing well, is primarily concerned with coaching.

To coach is to make sure that someone gets from A to B. In the past, this was done literally, because coaching was the driving of the coach's horses transporting people. Nowadays, coaching is primarily about getting from A to B in the development of the coachee. The best definition I know is:

Guide someone in such a way that they remain the owner of the intended change.

A good coach is therefore primarily active in ensuring that the person he coaches becomes and remains active. This is no different for coaching students. If a pupil says he doesn't understand something, the **Pavlov reaction** of some teachers is to say: "I don't know what to do:

- "Listen carefully and I will explain it again".
- "Look closely and I will show you again".

That reaction does not fit with the role of coach. In order to learn, to understand what the next step is and what you need to do to achieve it, in many cases instruction is not the first thing that counts. The students in question must first start thinking for themselves, or list what they already know or can do. The main task of a coach is to activate the mindset of the person being coached.

According to psychologist Carol Dweck (2006), who has conducted extensive research into the relationship between motivation and performance, there are roughly two ways in which students view their own role as learners. She refers to this as a difference in mindset.

- There are pupils with **fixed mindsets**
- There are pupils with a **growth mindset**.

The first group often shows 'helpless' behaviour, does not like a difficult task, tends to blame others for mistakes or failures, and in the long run will avoid tasks that require effort rather than tackle them.

The second group is focused on perseverance and a growing confidence in their own abilities. The effect of this distinction is that differences in learning performance cannot be traced back one-to-one to differences in intelligence. This fixed mindset is often found among intelligent pupils in particular, because they use **intelligence as an alibi** for not having to make an effort.

8.3 The role of the teacher

Teachers have a lot of influence on the development of such a mindset.

If, for example, you constantly reward performance as a characteristic of the pupil (How clever you are!), you promote the development of helplessness. Pupils who are repeatedly told how clever they are, will start to believe that if something doesn't work out, it can't be down to them, because they are clever...

The fixed grouping that has been introduced in many schools (instruction-dependent, -sensitive and -independent) also leads to this effect, as became apparent again this week when a pupil confided in me that he had to participate in extended instruction because he was stupid. This was not what he had been told, but it was his conclusion from that fixed arrangement and how the groups were talked about

Also, giving tasks that are not geared to the goals to be achieved stimulates a fixed mindset, because the pupil's efforts do not lead to the achievement of learning goals.

The teacher also has a coaching role towards the pupils outside specific coaching conversations. You have a lot of influence as a teacher in creating a fixed mindset by the way you give criteria when creating groups, by giving instructions during work, by offering certain materials and activities, by comments you make directing pupils in a certain direction and by the way you give a name to a certain group of pupils, such as "the best children who finish first can go now".

You stimulate a growth mindset by giving freedom in creating groups, by mapping out a learning path together with the pupils, by letting pupils describe what they want to achieve by working on the project (personal objectives and learning objectives set by the government), by asking questions as a coach and giving feedback without giving suggestions for certain materials or solutions, and by giving descriptions in which you do not pass judgment. Such as "the children who have finished their work may now go".

Other research (e.g. Hattie 2012) indicates how important feedback is. In particular, the opportunity to ask for and receive feedback appears to be stimulating for the learning process and thus for the result. However, feedback is a mirror, not a judgment or a reward. It provides 'information' that the learner can use to think and act further and therefore stimulates the will to continue.

8.4 Coaching skills

When coaching a student, the first thing to do is to show an interest in the student. Posture, facial expressions and words must be congruent and not contradictory. An effective coach possesses **three important skills**:

- listening,
- asking questions,
- analysing.

Listening is very important. It is not only about 'auditory perception', but also the ability not to immediately label the things the pupil says or to assume that you immediately understand what the other person means. Your own self-evidence or your own image of the pupil can sometimes get in the way.

Therefore, **asking questions and especially asking** for explanations or examples is essential to enable good listening. A pupil who answers the question "How do you calculate this sum?" with "Well, just...!" may not find the way "just" that is offered in class. Further questioning is then necessary to find out. Questioning does require a certain approach. It happens quite often that, because of such a follow-up question, pupils think that their answer was wrong, or that you want to hear something special from them. Showing **curiosity** can then help. It also helps to avoid suggestive questions, because you ask suggestive questions when you already know the answer.

Analysing is the third skill needed, because it is not about right or wrong answers, but about finding an input to activate the learner. Together with listening, analysing also leads to questions or to provoking reactions in another way. The pitfall here is that your analysis leads to a conclusion without checking with the learner whether that conclusion is correct.

8.5 Content and timing

Guiding pupils in the process of learning is a normal task for every teacher, especially in primary education. This learning can be about the subject matter, about a subject's content, but also about other skills:

- cooperation,
- planning,
- impulse control,
- taking initiative,
- taking responsibility,

These are all learning processes that many pupils go through. It is good to realise that this guidance is not only necessary when things go wrong. It is precisely in the phase when the pupil is active that a coaching conversation has a stimulating effect. Through such a conversation, you can make pupils aware of how they are doing, confirm their good approach and, as a result, possibly guard against pitfalls.

Giving confidence and strengthening self-confidence are key concepts here. Timely coaching also has a very practical advantage: it costs less time and effort, for both parties. Coaching a student who has already reached a deadlock to become active again is very useful, but often takes a lot of time and effort. Also in this context, prevention is preferable to cure.

8.6 Coaching interviews

A coaching conversation starts with something you could call an 'icebreaker'. The pupil must be given the confidence that you are interested in him and that it will not be a conversation to sit in suspense for. Then you move on to the trigger (a previous contact, a request or a regular round) and the central content.

We had agreed together to discuss again this week how things were going with the planning of your tasks.
or

You said that you wanted me to look with you again at how you calculate the new subtraction sums on the empty number line.

Then it is the pupil's turn: he is invited to tell or demonstrate how he is doing, starting with what is already working. Sometimes pupils need confirmation, because they have doubts about what they do or how they do it. "It is so simple, is that right?" or "It is very difficult this way, can't you do it differently?" or "I keep forgetting, what can I do about it? In such a conversation, it is best not to ask "What do you still find difficult?

The use of the word 'difficult' is risky. For some pupils, that unsuspecting question "What do you find difficult?" sounds like an accusation or a confirmation of failure. There is a danger that 'finding something difficult' becomes something that it is better to avoid as a pupil. It also seems as if there are only two kinds of tasks: difficult and easy ones. Hesitating, having to think a little longer, weighing up whether it should be a or b, are then not recognised as signs that something is not yet fully mastered. Yet these are very normal phases in a learning process. A coaching session can help pupils gain insight into the phases they go through while learning. This gives them a better understanding of what something like 'practice' means for them.

The remainder of the conversation is therefore aimed at getting the pupil to recognise and name where he is now, what has already been achieved and why, what the next steps are and what they might look like. The emotion involved also deserves attention:

- pride,
- disappointment,
- enthusiasm,
- fear,
- joy
- despair.

Such emotions say something about how a learner experiences the learning task, but also tell us whether those feelings promote or impede efforts to achieve the agreed goal.

At the end, summarise your conversation briefly, especially formulating the conclusion from the pupil's perspective. **Avoid phrases like** *"I think you are doing a good job"*.

It is not so important whether you think so or not. It is better to say something like *"I notice/hear/see that you are doing x and y and the result is z. If you keep that up, you will succeed. If you keep that up, it will totally work."*

This means that in the following period the pupil does not wonder what his teacher will think, but can check for himself whether he is doing well. These are subtle differences, but in coaching students this care is a key to success.

Finally

Is a teacher now only a coach?

No, definitely not. The coaching role is, however, decisive for the results of your teaching. You can correct poor instruction with good coaching. Bad coaching cannot be corrected with good instruction. The difference lies in the connection between teacher and pupil and the atmosphere it creates.

8.7 Evaluation and testing

There are two types of evaluation: **Formative evaluation** is evaluation during the process, **summative evaluation** is evaluation afterwards based on the results. When evaluating, attention can be paid to the group or to the individual. Perhaps unnecessarily: realise that this concerns personal information, so it is necessary to be careful.

Every teacher wants students to reflect on their efforts and approaches. How do you do that? How do you ensure that a pupil knows what he is working towards, that he knows what he needs to do to achieve the learning goal? When and how do you give meaningful feedback? And how do you determine the next steps? On this page you will find everything about formative assessment, which you can use in the classroom and in your team at school.

Formative evaluation cycle

When you work formatively in your lessons, the five phases of formative evaluation always come back within a lesson and series of lessons.

Do your pupils know what they are working towards and how they will achieve it? In this phase you clarify learning objectives and discover, together with the pupils, what success looks like for a certain learning objective. The use of different examples is a powerful tool. An important phase, because all other phases stand or fall with it.

What do you do as a teacher in phase 1?

1. You translate knowledge of your own discipline and the development of students therein (= learning progression) into clear learning goals and success criteria
2. You take into account common difficulties that students often encounter in their development towards becoming a starting professional
3. You communicate learning goals in multiple ways and at multiple times during the lesson series
4. You set learning goals on participation/learning/autonomy
5. You use active working methods to identify and clarify learning goals and success criteria with students
6. You use concrete example products to distill success criteria
7. You formulate learning goals that indicate preconditions, but also leave room for individual interpretation.

Do you consciously use different learning activities to show your pupils to what extent they have already mastered the learning objectives? Both more informal, like a mini-quiz or class discussion, and more formal, like a diagnostic test. It is very important to select targeted learning activities that match the learning objectives and provide rich information to take the students to the next step of their learning.

What do you do as a teacher in phase 2?

1. You use ways to elicit student responses appropriate to learning objectives
2. You use a variety of methods, both formal and especially informal (see box below)
3. You ask open questions aimed at deep understanding rather than the right answer
4. You stimulate group discussions to gain insight into students' understanding, misunderstanding and misconceptions
5. You put students themselves and each other into action to make their understanding explicit and to deepen it (i.e. towards more student control)
6. You can respond to what students bring in
7. Analyse and interpret pupil reactions

Do you now know well enough where your pupil and your class stand in relation to the learning objectives? In this phase you consciously ask yourself this question. If not, you collect additional information. If yes, you draw conclusions to enable you to take the next step in learning with your students. Involving students in analysing their own and each other's work is an effective formative practice.

What do you do as a teacher in phase 3?

1. You take the time to look critically at student reactions
2. You analyse student responses to core aspects and learning objectives of the subject area (and not on superficial form features)
3. You identify misconceptions, strengths and weaknesses at the classroom level
4. Do not judge too quickly, but ask further questions and collect additional evidence
5. You let students actively compare and interpret their own and each other's work
6. You can use technology effectively for formative purposes and points 1-5
7. Communicating with pupils

Do you include the learning objectives and success criteria when you give feedback on what you see, read and hear? Do you involve your pupils in this as well? In this phase you discuss with pupils where they stand and what they still need to do. What they still need to work on and what their strengths are. A good mix of classroom feedback, feedback in groups and individual feedback is essential.

What do you do as a teacher in phase 4?

1. Linking feedback to learning objectives
2. You give concrete suggestions for improvement linked to the learning objectives
3. You offer space (within the module and/or afterwards) to do something with the feedback and show improvement
4. You let students give themselves and each other feedback, but offer a clear structure for (items 3-4, see box)

Do you adjust your instruction if you discover that students have already achieved the learning objectives or not yet? Targeted follow-up actions are important to ensure that the student achieves his learning goals. Think of other ways of explaining, other work formats, learning strategies or group compositions.

What do you do as a teacher in phase 5?

The most difficult phase!

1. You adjust follow-up instruction/work format according to the analysis of student reactions:
 - a. Weaknesses, strengths, misconceptions
 - b. Individual/group/class level
 - c. Learning objectives and learning line
2. You use a wider didactic repertoire than "repeating" and "slowing down or speeding up". Choose alternative instructions/work forms if previous ones do not work.
3. You dare to deviate from a pre-structured curriculum/lesson plan
4. You offer structure to self-regulating/self-directed activities

9: Process support

9.1 From control to self-steering:

Students can be taught self-direction so that they evaluate their own learning and choose the learning tasks that are most appropriate for them at that time. They can learn this through model examples, checklists or support from online tutors. But students who have learned self-direction in one subject may not be able to apply that skill in another subject.

Techniques for learning self-management

Can you use techniques that are effective in teaching knowledge to teach self-management skills? These are, for example, skills that enable pupils or students to assess their learning process or to determine what their next study activity will be.

1. Use model examples (e.g. videos)
2. Use procedural, strategic or meta-cognitive guidance when selecting tasks.
3. Use checklists to teach self-management skills.

Meta cognitive support includes support on the following skills:

- Concentrate
- Do not give up
- Work together (cooperative)
- Be curious
- Try
- Use your imagination
- Keep improving yourself
- Enjoy learning

Research has been done into the best way to learn self-steering. It resulted in the following recommendations:

Instruction in advance and tips for more self-management needed

Some of the key findings of the study:

- It makes little difference which technique is used to teach self-direction; model examples, checklists or tutor support work equally well.
- Self-governing skills learned in one subject hardly seem to transfer to another subject; therefore, transfer does not happen easily.
- A combination of prior instruction and prompts to improve self-direction leads to better learning outcomes than instruction or prompts alone.

Recommendations for applying self-management in practice

- Teachers can help their pupils to get more grip on their own learning process. They can do this by showing examples (video images), using online tutor programmes, or having students answer specific questions about their learning process.

- A teacher should not expect that transfer of the learned self-governing skills to another subject area will just happen; this does not seem to be the case. The research did show that pupils are better at selecting tasks for other pupils than for themselves.
- Pupils tend to overestimate themselves and to choose learning tasks that are too difficult. They also do this if they have made mistakes in a previous learning task.

9.2 The use of scrum techniques

When you move to project education, scrumming is a useful way of working together that you can also teach your pupils step by step.

Scrum is an effective and flexible way of working - allowing a team to deliver a project or piece of work more productively and to tackle any problems quickly.

Within Scrum, we work in self-organising teams consisting of different specialists, each with their own responsibilities.

1. The person who guides the Scrum process is called the Scrum Master. This person ensures that the team performs optimally.
2. The Developers and the Scrum Master work together with the Product Owner, who acts as an intermediary between the customer (for whom the product is made) and
3. The Developers (those who actually make the product).

This is how the scrum team works in business. The scrum master and the product owner are then often not part of the developer's team. In education, especially when you work with groups of 3-4 students, it is more convenient to have the teacher act as product owner and within the team of developers, with a student acting as scrum master.

The scrum master is more like a manager. He guards the time, makes sure all materials are present, and leads the meetings. Delegates the tasks, etc.

How does the Scrum working method work?

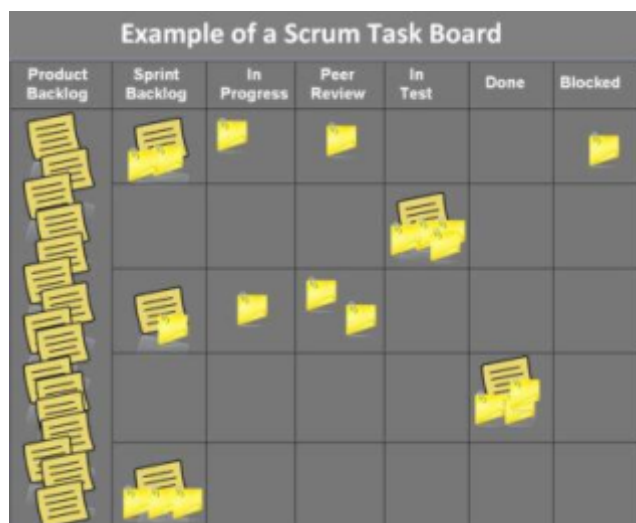
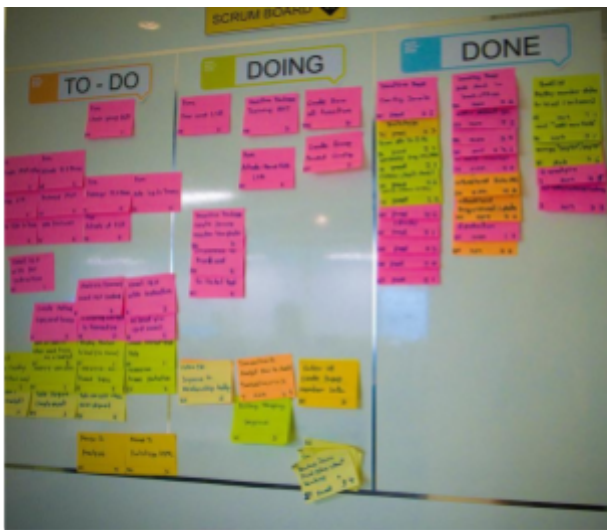
This starts with the creation of a user story.

A User Story is a short, simple description of an end-user need. A User Story is not a functional description, but makes clear what an end-user wants or needs and why this is necessary. A useful tool for this are the words If, I want and so on.

For example:

- **As a** dietician, **I want** a brochure for diabetics, **so that** I can give them information about a healthy diet.

The team now starts brainstorming on how to reach the final goal in short, clear steps. These steps are called **sprints**. A sprint takes place within a defined time period. The sprint starts with **sprint planning**, where the tasks are divided for the sprint and it ends with a **sprint review** where it is discussed what has been done, what is finished and what still needs to be done. Based on that, the next sprint planning is made. This is all kept up to date on a **planning board**.



In the business sprints there is a sprint review every day. Called stand up because everyone is standing. In daily school practice, this will not be possible.

With the scrum method, students work together as a team in an effective and flexible way. Students form a multidisciplinary and self-managing team. A team takes up a project together, makes the planning and divides the tasks. This method can also work well as a didactic tool. It gives the teacher the opportunity to differentiate.

Less stress and chaos

Teachers who have worked with scrum before find that it works better than R & D lessons. With scrum, the work that needs to be done remains clear to all students and is finished on time. At the beginning of the lesson, there is a stand-up. The students discuss the progress with their group, who is doing what and how they can help each other. If necessary, tasks are redistributed and then they get to work.

More responsibility with scrum

Pupils work in a more planned way, which gives them a lot of responsibility and allows them to carry out the assignment independently. The teacher is able to differentiate more. She has more time for pupils who have difficulties with certain parts. The pupils take the work more seriously because they own the project.

How does the simplified scrum work?

Scrum works according to a fixed methodology and role division:

- The group creates a user story.
- Pupils note down their qualities and see which ones they use for that particular project.
- The scrum master directs the group and ensures that the group sticks to the planning and works properly.

- The scrum masters compose their group according to the different qualities of the students. This way, group members complement each other.
- A sprint is a part of the project that lasts a certain time.
- For each sprint, the group makes a plan. They note down the tasks, divide them up and set priorities.
- The group notes everything on a planning board and processes all changes on it.
- In this way, the group always works on a new sprint until the goal of the user story is reached,

The goal of the user story is described in the "definition of done". A set of criteria that must be met so that the end product also fulfills the customer's wishes.

In principle, the product owner is the one who draws up the definition of done. In this case, it is usually the teacher. When the group has finished the user stories, it's time for the presentation. Then, the students' performance is checked against the predefined definition of done.

This way of working with scrum is even applicable in group 7 and 8 of primary education and is a good start in secondary education. Later, elements such as product backlog, sprint backlog and all other aspects of scrum can be added.

In Appendix 1, you can see an example of an elaboration of a sprint and a Definition of Done from the Sustainable Work project of Ecolyceum (school in Deventer, the Netherlands).

10: How do you evaluate learning experiences?

There are several ways to evaluate the project. These include self-reflection on the contribution a student has made in the project and reflection on the team process and the individual input of the team members. The ecolyceum in Deventer has set up a fixed format for this. In the following form you can get an idea of how a project can be evaluated.

Of course, you can also start a discussion with the student based on the Definition of Done and discuss the process and its elaboration through a coaching session.

Appendix 2 contains an example of an evaluation form used for the Sustainable Economy project at the Ecolyceum (Deventer/Netherlands).

11: The different tools you can use in the implementation of Gaia YES

11.1 A collection of short stories and matching questions related to the 20 themes of the Holistic curriculum, prepared by Gaia YES

These stories can be used to introduce a lesson or a project. They fit the 20 sustainable themes of the Gaia YES curriculum. The stories are written for young people between 14 and 19 years old. They fit into the world of young people. The stories are thought-provoking and may raise questions and feelings that can be discussed in class. In talking to young people, you can sense what they already know about the subject, how they view it, and what need they have to know more about it. You can read the stories and the questions on the website in the student part of the website. It is also available as a PDF. You can download the PDF and print it out. You can find the PDF by tools.

11.2 Bundled worksheets with sub-tasks to teach basic concepts and skills

There are sub-tasks for the 20 themes of the holistic curriculum of Gaia YES. For each theme you find two or three sub-tasks. These sub-tasks are presented in order in a PDF. You can also find them in the teacher part of the website of Gaia YES. You can search the database for a suitable assignment using keywords. The sub-tasks are designed to teach basic concepts and skills that are appropriate to the sustainability theme. The assignments can be integrated into your own regular curriculum as a supplement. You can also use the sub assignments within a sustainability project. Together, the sub assignments form an excellent basis for a coherent sustainable and holistic learning programme.

11.3 Tools for creating a complete sustainable and holistic curriculum

When you want to work together in a (learning) team to create a complete sustainable and holistic curriculum, tools have been developed that can help you do this. Such as the Excel sheets for the school development tool to determine where you stand and where you want to work towards as an organisation. The mural pentad diagram, to brainstorm together in the mural programme about your vision of sustainable education. The Gaia YES floor mat and the corresponding theme cards, to playfully explore who knows what and can contribute to the development of the projects. And Gaia YES worksheets, which can help you to turn the global theme cards and stories into local themes and stories.

It also provides examples of completed curricula for inspiration, which you can use when creating your own curriculum.

11.4 Developed projects

Two detailed projects have been put together for community-based learning in a hybrid environment. These can be used directly within your own organisation. This way you can get an idea of how community based learning works, and gain experience with it. These example projects can also give you a handhold when putting together your own sustainable holistic projects in a hybrid environment.

11.5 The website: www.esd.college

The website consists of a main menu, a teacher section and a student section. In the main menu, you will find the following sections:

1. **Home:** Entrance of the website
2. **Curriculum:** A detailed explanation of the Gaia Yes curriculum. including per theme a description of the how/what/why of a theme, the main Head/Heart/Hand goals, the connection to the SDGs and the connection to the learning subjects, real-life examples.
3. **Teachers:** The teachers' section of the website with the following sections:
 - Teacher guide: here you can find the different parts of the teacher guide. (Introduction, Timeline, Curriculum companion, Teacher support, Pedagogy, Resources, Blended learning)
 - Worldview: here you can find explanations of the different themes appropriate to this dimension, with pedagogical information and assignments you could carry out.
 - Social: here you can find explanations of the different themes corresponding to this dimension, with pedagogical information and assignments you could carry out.
 - Ecological: here you can find explanations of the different topics corresponding to this dimension, with pedagogical information and assignments you could carry out.
 - Economic: here you can find explanations of the different themes corresponding to this dimension, with pedagogical information and assignments you could carry out.
4. **Students:** Here you can find student material in the form of stories corresponding to the 20 Gaia YES themes and matching questions.
5. **Meetingplaza:** Connect with others working with Gaia YES!
6. **Tools and downloads:** Materials to download and print out.
7. **Contact:** Contact details of Gaia YES
8. **Language:** Language to choose: English, Dutch, Spanish, Eesti

11.6 List of tools on the website

The following tools are available on the Gaia YES website to support the implementation of the Gaia Yes curriculum:

1. PDF introduction and curriculum description
2. PDF teacher's guide
3. Excel sheet and questionnaire School Development Tool
4. Mural Regenerative Pentad
5. Gaia YES Floor mat
6. Theme cards Gaia YES
7. Mural holistic curriculum framework empty
8. Gaia YES Excel Sheet Overview of themes and learning outcomes
9. Collection of stories & questions and sustainable world story relay teacher tutorial
10. Set-up of a sustainable Technasium project 'climate-proof'
11. Community based learning project 'Connection to nature'
12. Sustainable World Story Relay teacher tutorial

12: Gaia YES experiences in practice

Gaia Kool & Gaia YES grammar curriculum

The inspiration and impulse for starting Gaia Kool (Gaia School) arrived during Gaia Education's first EDE course in Estonia in 2011. Two mothers of young children - Marit Otsing-Saar and Kaja Karu- Espenberg - were attending the EDE course and it had such an impact on them that they decided to establish a new school for their children based on Gaia Education's values and content. They invited two other Gaia Education activists - Ele Koppel and Toomas Trapido - and started the journey towards opening a formal private school. Gaia Kool opened its doors in the fall of 2014 with five kids.



Students of Gaia Kool gathering mushrooms

Gaia Kool follows the principles of Gaia Education, it promotes holistic worldview and sustainable lifestyle, caring about the Earth and the wellbeing of humans. Gaia Kool is a community school, our parents, children and teachers form a community where everybody has a role of the teacher and a student, we learn from each other. Gaia Kool believes that the school cannot exist apart from everyday life and is not a separate institution but it needs to be a comfortable environment for both teachers and students in order to learn together through experience and shared knowledge. There are class teachers for every class and subject teachers for foreign languages such as English and Russian, Handicraft and Technologies, Art, as well as Physical Education and Music. Gaia Kool offers different kinds of experimental subjects for kids such as Self-expression, Drama and Acting, and Yoga. One week of the seven week learning period is so called project week, during which the children either visit some places connected to their current study topic or stay at

home and get involved with their own personal project. Usually it takes about a month to finish the project, after that the students will present it to others and then choose another topic and start with a new project.



Lesson of making fire

There are circa 130 students present at school every day. Gaia Kool also has a unique position in the Estonian educational field as we offer home schooling and distance schooling. These are the possibilities used by those parents whose children either cannot come to school every day for some reason or they deliberately would like to teach their kids at home and just occasionally come and meet the teacher at school. There are currently around fifty students in the home schooling program. All those children are getting personal attention and have their own specific learning program.



Traditional first schoolday ceremony in Kadrioru park near the schoolhouse

The main goal is to help children and families to understand that each individual has its unique place here on Earth. And through understanding of who we are we can start learning and understanding how to live in symbiosis with our planet and nature. The students are gaining their knowledge through a different kind of study – the teachers are creating an environment which is based on creativity, freedom of expression, and eagerness for learning. They cherish and creatively use their national traditions.

Gaia Kool participated in the Gaia YES! project and developed the first version of the curriculum for Gaia Gymnasium. It draws from the four dimensions of the Gaia YES! curriculum for grammar and also creatively integrates several subjects into projects and theme periods, for example 'creating the best village in the world', 'ancient Greek festive dinner' etc. There is special emphasis on places and traditional (indigenous) knowledge and worldview. Gaia Kool plans to open its Gaia Gymnasium in the autumn of 2023.



Sustainable Education Project Ecolyceum Deventer/Netherlands

Students from the Ecolyceum in Deventer worked for eight weeks on the 'Sustainable Education' project. The Ecolyceum is a plus programme for highly gifted students in VWO/Gymnasium education. The students worked one day a week on this project. Students at the ecolyceum take fewer hours in regular subjects (though with the same regular programme content), freeing up space of six hours a week for sustainable project education.

In the Sustainable Education project, the students investigated what and how study at the Ecolyceum implements sustainable education. The students then described what they like about the programme and what they miss in terms of education for sustainable development. Based on their research, the students made suggestions to improve the Ecolyceum's education programme.

For this, they also researched what education for sustainable development entails and how it is designed at other schools. A powerpoint presentation and a digital booklet were made of their research, which was presented during the second webinar of the Gaia YES project. After the presentation, students participated in working sessions on sustainable education globally and as part of Gaia YES.

Sustainable World Stories Relay

The Gaia YES website (www.esd.college) features more than 60 stories dealing with sustainable development. They belong to 20 themes related to sustainability. These themes can again be divided into cultural, social, ecological and economic aspects. By delving into the stories and the 20 sustainable themes, students can start to experience more coherence around the theme of sustainability. This allows them to make more conscious sustainable choices. And really make their own contribution to a healthy, liveable and joyful future for themselves but also for people elsewhere in the world and in generations to come. To become familiar with these 20 themes, there is a 'Sustainable World Stories Relay' students can take part in.

What does it involve?

Students are challenged to choose a sustainable theme or story from the Gaia YES website and connect it to their own life or local environment. About this, they create:- Either a story of up to 400 words- Or a blog post with a photo and up to 150 words- Or a 20-second ticktock video- Or a piece of artwork.

An online audience jury together with an expert jury will choose every year the most inspiring entry. The best three entrants can earn a nice prize.

A special lesson series has been written especially for students between 14 and 16 years of age, with a matching tutorial for the teacher. The lesson plan explains the relationship between the twenty sustainable themes in a playful way. Through the exercises in the lesson letter, students can develop a broader understanding around a holistic approach to sustainability.

The winners of the best 2022 entries were announced at the multiplier event in the Netherlands on 24 June. The new year starts on 10 October 2022, with new opportunities to enter. You can submit from 10 October to 1 February. The award ceremony for 2023 will take place in February 2023. This will be organised by Gaia Netherlands in cooperation with partners.

Gaia YES Youth EDE (Ecological Design Education)

Gaia YES Curriculum and Guide resources were created to be used in both formal and informal educational environments and programs. Informal learning environments can include after school programs, summer camps, and activities such as youth exchanges and youth workshops. Every year thousands of youths all over Europe participate in Erasmus funded youth exchanges and many of these youth exchanges have sustainability and skills for building a better future at the heart of their program and activities. The Gaia Youth EDE offers a programme design to integrate informal youth programmes.

The Gaia YES Youth EDE include a variety of activities from all four Gaia Education Dimensions, (Ecology, World View, Social and Economic) and modules for the youth leaders and participants. Since several of the youth leaders have already run or participated as facilitators in Gaia EDE

courses, it is easier to convey the Gaia Dimension themes using Gaia facilitation methods. In addition to sharing Gaia Education curriculum content, the youth exchange provides the opportunity to demonstrate the Gaia holistic approach to presenting the content through “heart, head, and hands” learning activities.

For example, rather than a lecture on how to make compost, we make it. Or to share the importance of attentive listening, we practice methods of active supportive listening to each other in small groups. Sociocracy and other power sharing and decision making tools are demonstrated to be applied during small group project development.

The youth are divided into smaller groups of approximately fifteen to join in rotating simultaneous workshops. Whenever possible, workshops are delivered by the youth themselves. In larger groups we use “Open Cafe” or “Open Space” type tools to share and facilitate discussion and project development.

Much like a Gaia EDE or Permaculture Design Certification (PDC) course the youth exchange weave the Gaia Curriculum themes together through a group project that should be presented towards the end of the program. During the youth exchanges, youth meet regularly in small groups to design and create sustainability projects that they would try to implement on their return to their home country.

PermaMed has gained experience in setting up youth programmes based on the Gaia YES curriculum and guide. PermaMed wants to work further in collaboration with Gaia Education in developing youth exchange programmes based on the Gaia YES curriculum.

Techline at Zeven Linden College Dedemsvaart/The Netherlands

In collaboration with the Zeven Linden College in Dedemsvaart, we considered how to promote strong sustainable engineering education in secondary schools.

The reason for this was:

- According to the Technology Pact, Science and Technology (S&T) must be firmly in the curriculum in primary schools by 2020. In the Technology Pact, government, business and education have joined forces to promote engineering education so that more pupils choose technical professions. This is badly needed given the forecasts of shortages in technical professions. The demand for technicians has been increasing in Overijssel over the past two years; this applies to both basic and specialist technical skills. In Overijssel, 21% of the population is employed in a technical profession.
- In Overijssel, a shrinkage is expected in the total number of pupils in VMBO. This concerns the basic vocational, framework vocational, theoretical and mixed learning programmes. In 2032, a 27% pupil decline is expected compared to the number of pupils in 2017- 2018.
- Giving an extra boost to engineering to give more attention to all talents out there.
- Only six pupils in the Dedemsvaart region choose a technical profile within GL. (source: <https://www.sterктеchniekonderwijs.nl/tools/regioportret>)

In consultation, the following wishes were expressed for a new curriculum to strengthen Science and Technology education. The main wishes are:

- In the programme, pupils between 10 and 14 years old are introduced to science and technology in a continuous learning line from group 7 PO to class 2 VO.

- The Challenges (research and/or design questions) are introduced and/or supported by regional socially responsible companies and organisations, in the form of a social issue, as a capstone and additional stimulus for inquiry-based and design-based learning.
- Students work out the Challenges through the 'Design thinking' method; integrating the structure of inquiry-based and design-based learning.
- Research and design questions align with the learning area Human and Nature and its ten building blocks from the new curriculum; Nature of natural science, Social issues, Ways of working, Ways of thinking, Signals and information, Energy and interaction, Survival of organisms, Natural resources and materials, Earth and climate, Universe and time.
- The programme is self-directed and personalised.
- The programme consists of a basic programme and elective programme with in-depth assignments.
- The programme is fun, energising, challenging and highlights positive aspects of engineering and sustainability.
- The programme eases the workload of VO teachers and PO teachers.
- The technical work plaza is used optimally for 'inquiry-based and design-based' learning and strong technology education.

In the design, consideration was given to achieving a continuous learning line with primary education. Primary education makes extensive use of the BLINK WORLD method. BLINK WORLD is a form of project education that integrates the learning objectives from the Science and Technology domain. For this reason, a connection was sought with the BLINK WORLD method within the set-up.

The following structure is in line with this:

1. Intro
2. Research phase: 4 different studies, each with theoretical introduction, a basic research assignment and one or more in-depth research assignments to choose from.
3. Test yourself
4. Design phase: you can choose from an established design assignment or a free design assignment. Design method based on design thinking.
5. Presentation
6. Evaluation

On this basis, a design has been developed. In the set-up, a combination was worked out in which the seven beta worlds, the BLINK WORLD themes, the learning goals of Man and Nature, the 17 Sustainable Development Goals (SDGs) and the **Gaia YES themes** were integrated into 10 projects. These 10 projects form the basis of a two-year curriculum in the lower secondary school.

In the school year 2021, a start was made with this set-up in the subject Techline. Techline is a talent stream at Zeven Linden College which is taught in the first two years of the junior school. Students can choose from four different talent streams, and are taught for two hours a week.

An overview of the ten projects can be found in Appendix 4.

13. How we have worked to develop Gaia YES

The Gaia YES team wanted to develop a system that could be flexibly applied within any educational setting that works with young people on sustainability education.

A team has been put together consisting of both experts in the field of sustainability, experts within the eco-villages of the Netherlands and Europe, experts within innovative education and the Gaia schools and experts and top trainers in the composition and implementation of the curriculum compiled by Gaia Education and Gaia YES.

Below is a description of the methods we have used.

1. Preparation
2. Mural pentad
3. Mural GAIA YES framework
4. Identifying knowledge and skills
5. Network mapping
6. Achieving coherence
7. Webinars
8. Drawing up a programme of requirements
9. Draw up a plan of action
10. Working groups for implementation
11. Evaluation

1: Preparation:

In preparation, we wrote a project proposal. Everyone has agreed to the project proposal. We have also read and studied the materials of Gaia Education written for adults and for youth.

2: Mural regenerative pentad

In a web session using the programme Mural, we worked with the five questions of the regenerative pentad. We answered the following questions:

Objective: What do we want to achieve with the project?

Uniqueness: What makes us/the project unique?

Expertise: From our own uniqueness, what sustainable development can we support?

Function: What service(s) can we provide to support sustainable development?

Potential: When we deliver the services for sustainable development, what have we potentially achieved?

The summary of this working session was:

We want to develop a curriculum with an accompanying teacher's guide and website that

- is innovative,
- learner-centred
- and applicable in different countries.
- The curriculum is prepared by experts and professionals from different organisations, whose team is diverse.
- Many different organisations and people have contributed to the curriculum development process.

3: Mural Gaia YES Frame

We planned online meetings to take stock of who already knew what about what and what they were doing within the Gaia YES themes.

In the programme Mural we placed the 20 themes of the Gaia YES curriculum in a diagram. In this diagram, participants could use sticky notes to indicate what they already knew and did within a theme. It also showed where the gaps were in our own knowledge and skills in the field of sustainability. A summary was made of this work session. This summary was a good starting point to further discuss the desired curriculum for sustainability.

4: Identifying knowledge and skills

For this task we used the Gaia YES floor mat and the accompanying twenty theme cards. We also used pebbles, leaves, sticky notes, pens, thick markers, adhesive tape and flap over sheets.

Participants were each given three stones and three leaves. Participants put a leaf next to a theme card they knew a lot about and had skills in, and a stone next to themes they wanted to know more about and learn more about.

After everyone had laid down their leaves and stones, they looked at the end result and talked together about what they were good at, and how they could help others who would like to learn more about it. In this way, talents and learning wishes were mapped out. By discussing this with each other in this way, spontaneous and organic cooperation arose between the participants.

5: Network mapping

On sticky notes, participants wrote down who they knew in their own network, and who could add something in terms of knowledge and skills in line with the 24 themes. The sticky notes were collected on flap-over sheets, clustered in the four dimensions and the 24 themes. The participants discussed these flap-over sheets with each other. It gave a feeling of richness to experience the network that everyone already knew and could bring in. A summary of this work session was put in an excel file, to which participants could add their comments at a later stage.

6: Achieving coherence

In an excel file, we put down the 20 themes and collected the data from the previous sessions. This excel file was a tool to talk about the desired situation and the first next step we could take together.

7: Webinars

We have made contact through webinars and studied the field. We looked at good examples from practice. In addition, we asked each other investigative questions. In this way, we were able to develop a sense of the 'needs' in the field and what the curriculum and teaching materials we wanted to develop should meet.

What emerged as the most important input during the webinars:

Pupils indicated that their future dream education:

- Makes use of creativity
- Leaves room in the curriculum for the pupil's own input on what he or she would like to learn
- Allows learning competences to be worked on during workshops
- Has projects also focussed on learning to work together.
- Supports pupils to learn how they themselves can contribute to a sustainable world

Teachers said:

- There is a great need for elaborate projects for sustainability education.
- There is a great need for useful teaching ideas for sustainability education
- There is need for support from a network of teachers/supervisors working on sustainability education
- That the education of the future should invite pupils to develop their talents
- That the education of the future should put the student in the centre
- That the education of the future should promote a sustainable lifestyle

8: Drawing up a programme of requirements

Based on the information from the previous work sessions, a programme of requirements was drawn up.

- The curriculum is structured to take into account holistic education and neuroscience principles
- The teaching material promotes the development of young people's social skills
- The curriculum and teaching materials are structured as modules that can be integrated into the various activities of schools and youth programmes
- The curriculum and teaching material are flexible and universal
- The teaching material can largely be implemented as e-learning
- Young people from different countries can cooperate and learn together
- The curriculum and teaching materials promote integration between subjects and different age groups
- The curriculum and teaching materials promote project and community-based learning and mentoring

Specific requirements for the teacher's guide and accompanying teaching materials:

- Contains steps and instructions
- Contains different tools (e.g. self-assessment tools)
- Contains recommendations
- Contains some materials and methodologies for education for sustainable development

- Includes a wide variety of teaching methods that promote active learning
- These participatory teaching and learning methods empower young people to take action for sustainable development.

9: Drawing up a plan of action

Based on the programme of requirements, we continued working in working groups.

Working group 'curriculum':

A group of experts from Tallinn University, the Gaia schools in Estonia and Gaia Education worked on a summary of the curriculum and a comprehensive elaboration of the curriculum. Starting points were:

- Four dimensions: social, ecological, economic and worldview
- Five themes per dimension
- Per theme, the following is described: why (main goal of the theme), how to work on it, what does the theme entail, head/heart/hands goals per theme, connection to the SDGs, connection to learning subjects, examples from practice

Working group teacher's guide

Experts on education for sustainable development from mainstream, alternative and extracurricular education worked on a teacher's guide. This guide consists of several parts:

Part 1: Introduction to Guide to the Gaia YES! Curriculum

Part 2: An Introduction to the Gaia YES! Curriculum and Pedagogy

Part 3: Curriculum Companion

Part 4: Thriving Learning Environments

Part 5: Blended Learning

Part 6: Website

10: Working groups for implementation

An implementation of the curriculum has started in both the GAIA school in Estonia and the regular secondary schools in the Netherlands, based on the method of Ecolyceum in Deventer, Research and Design class of Zeven Linden College in Dedemsvaart and Technasium of the Keizer Karel college in Amstelveen.

In Estonia, a start has been made with developing the curriculum for the GAIA school for gymnasium level in the age of 16 to 19.

In the Netherlands, a team of writers have started creating local stories. In addition, one sample project has been developed that fits with community-based learning, called 'Connection with Nature'.

Gaia Netherlands has organised a sustainable world stories relay with various schools. The teachers and students used the learning materials and website of Gaia YES during the preparation of the event. Schools worked on the preparation of the event with the help of a lesson plan. In short, through the assignments of the lesson plan, students learned about the twenty sustainable themes of the Gaia YES curriculum in a playful way. The students chose a theme or a story from the collection of stories that fits the theme and used this as inspiration to make a link with their own lives and their own environment. In a short story, or a blog post with photo, or a 20-second tiktok video or a piece of art, students described and/or visualised a sustainable development in their life or in their environment.

11. Evaluation

During the multiplier events in Estonia, Spain, the Netherlands and Scotland, the results of the Gaia YES project were presented. Feedback was solicited during these events. The feedback was incorporated into the final results of the project.

This review revealed that:

- there is more need for a continuous learning line for Gaia YES, starting from primary education to higher education
- there is a greater need for elaborated projects based on the Gaia YES holistic curriculum
- there is more need for practical stories, also written in the language of the young for primary education and in the language of students for higher (university) education
- there is a need for a teacher training based on Gaia YES

14. Resources

Books

Don Edward Beck Christopher C. Cowan, 2020. Nederlands Paperback. *Spiral Dynamics Waarden, leiderschap en veranderingen in een dynamisch model*. ISBN 9789401304801.

Wilber, Ken, 2017, third edition. *Integrale Visie*. ISBN 9789020202380

Laloux, Frederic, 2019, seventh edition. *Reinventing Organizations, Nederlandse editie*. ISBN 978 90 823 47715-nur 807. www.heteerstehuis.nl.

Laitman, Michael, 2011, first edition, *Children of Tomorrow, guidelines for raising Happy childre in the 21st Century*. ISBN 9781897448588.

Stein, Zachary, 2019, first edition. *Education in a time between worlds*. ISBN 9780986282676. www.BrightAlliance.org.

Zylka, Johannes, 2017, first edition. *Schule auf dem Weg zur personalisierten Lernumgebung*. ISBN 9783407257710. www.belts.de.

De wolf, Martin, Smit, Eefje, Hurkxkens, Peter, 2018, third edition, *Lesgeven over duurzame ontwikkeling*. ISBN 9789044136449.

Senge, Peter, sixth edition. *Lerende scholen, een vijfde discipline- boek. (Schools that learn. A fith discipline fieldbook for educators, parents and everyone who cares about edcuation.)* ISBN 9052612978 nugi 684/722.

Pauli, Gunter, 2017, fourth edition. *Blauwe economie, rapport aan de club van Rome versie 2.0*. ISBN 9789046820940 nur 747. www.zero.org.

Wahl, Daniel Christian. 2016. *Designing Regenerative Cultures*. ISBN 9781909470774. www.internationalfuturesforum.com.

Rosenbrand, Bas. 2021, third edition. *A new morning, cocreat school with the children. The story, practice and results of an innovative school*. www.anewmorning.nl.

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<https://www.gaiaeducation.org/>
<https://www.pblworks.org/what-is-pbl>
<https://scrumatschool.nl/international/>
<https://spiralphysics.net/>
<https://spiralphysicsintegral.nl/en/>
<https://integrallife.com/>
<https://www.sterktechniekonderwijs.nl/tools/regioportret>
<https://blink.nl>
<https://curriculum.nu/wp-content/uploads/2019/01/Mens-en-Natuur-visie.pdf>
<https://www.curriculum.nu/voorstellen/mens-natuur/>

Articles

Dweck, C. S. (2006). *Mindset: The New Psychology of Success*. New York: Random House Publishing Group.

Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. Routledge/Taylor & Francis Group.

<https://www.rijksoverheid.nl/documenten/rapporten/2018/10/01/monitor-10-14-onderwijs-eerste-tussenrapportage>

<https://www.sterktechniekonderwijs.nl/wp-content/uploads/sites/2/2018/12/Techniek-is-niet-niks.pdf>

<https://www.sterktechniekonderwijs.nl/wp-content/uploads/sites/2/2018/12/Techniek-moet-groeien.pdf>

15. Annexes

Annex 1: Example of an elaboration of a sprint and a Definition of Done from the project Sustainable Labour of Ecolyceum (school in Deventer, The Netherlands)

Product Backlog (major steps in project, prioritised)	Sprint Backlog (major steps in Sprint, prioritised)	To Do (small concrete tasks per step, whole verb)
1. Minicongress	improvement following feedback	improve website layout
2. Website		customise texts
3. Video		customise images
	3A Interview techniques	3A1 Role playing interview techniques
		3A2 Thinking up interview questions
	3B Preparation	3B1 Making up a film script
		3B2 Create shot list
		3B3 Create a storyboard
		3B4 Make film appointments and confirm in writing
		3B5 Filming on location
	3C Filming	3B5 Editing film and putting video documentary on website
Final delivery (concrete end products)	Sprint delivery (concrete Sprint products)	
A website about the profession of your chosen Eco-Worker. In addition to general information, the website includes a video documentary about your Eco-Worker.	Interview questions	Sprint Release: teacher gives feedback (written and live) max 10 minutes / team
	Film script, shot list and storyboard	Form based on Def. of Done
	Video file	Sprint Review: analyse and process feedback
	Video on the website	Sprint Retro: Standing Retro (:), : , !)

Definition of Done (requirements for Sprint products)

Interview questions are interesting, relevant and enthusiastic

Film script is logical

Shot list is fully developed

Storyboard is neat and tidy

Storyboard is a good basis for filming

Film is recorded at a nice and suitable location

Film is sharp

Sound of the film is clear and undisturbed

Documentary has a strong central message

Documentary is suitable for the target group

Story of the documentary is original and enthusiastic

Annex 2: Example of an evaluation form used for the project Sustainable economy at the Ecolyceum (Deventer/The Netherlands)

PART 1: Reflecting on your contribution/impact on the project

How have you worked during the past period? Did you learn a lot of things, did you challenge yourself and how did cooperation go?

Read the different texts per heading below. Where do you stand? Shade the text that fits you **yellow**. You also have to explain your answer. You do this in complete sentences!

Rubric Reflecting (on yourself)

	1	2	3	4
<p>IDEA/INDEPENDENCE How is the quality of your idea?</p>	<p><u>You take the first best idea as your starting point.</u> You have not really thought about this idea but are going to implement it immediately. The idea is obvious/cliché. It does not really fit into the project.</p>	<p><u>You have come up with several ideas.</u> In your idea, you show that you have thought about the content, but this is not yet very deep. It is not yet easy to see in your work what you want to show/clarify. In addition, it does not yet fit in with the project.</p>	<p><u>You have thought through your idea(s) and worked it out somewhat.</u> Your final product shows what you wanted to make. It is reasonably in keeping with the project.</p>	<p><u>You have a well thought-out idea and have researched and developed it.</u> Your idea is related to the requirements of the project. In your work, this is clearly visible. In addition, it fits well with the final product.</p>
<p>Explain your answer and also tell how you came up with your ideas for this project.</p>				
<p>Would you do it differently next time?</p>				

<p>RESEARCH</p> <p>Have you researched the topic and immersed yourself in it?</p>	<p><u>You have not done any research on sustainable economy.</u></p> <p>You went straight to work without delving into the underlying theory.</p>	<p><u>You have done research, but the results of your research are not visible in your work.</u></p> <p>You cannot explain your choices properly.</p>	<p><u>You have done ample research.</u></p> <p>The results are visible in your product but they could have been used even better. You can explain your choices.</p>	<p><u>You have done a lot of research and studied the subject.</u></p> <p>And this can be seen in the final product.</p>
<p>Explain your answer and tell how you did your research and how you incorporated these results into your project.</p>				
<p>Would you do it differently next time?</p>				

<p>COOPERATION How was the cooperation?</p>	<p><u>You do not like working together and find it difficult to participate in the group.</u> You only do something if someone else asks you to. You do not keep your appointments.</p>	<p><u>You do not always enjoy the group work and need to be encouraged by the teacher or your group mates to take initiative.</u> You often need to be reminded of appointments. You think the result is important, but do not always listen to the others.</p>	<p><u>You usually enjoy working together and show initiative.</u> You keep to the agreements made. You find the result important and make sure that cooperation goes well.</p>	<p><u>You enjoy working with each other and want to learn from each other.</u> You show initiative, meet all agreements made and want to achieve the best result. You ensure that cooperation in the group goes well.</p>
<p>How did you find working together in this project? Was it better than the first time or less good? Please explain your answer.</p>				
<p>Would you do it differently next time?</p>				

<p>MAGAZINE/ INSET How hard did you work?</p>	<p><u>You give up quickly and don't work hard.</u> Your concentration is very low and you work only for the assessment or for the teacher. You are not making good use of your time.</p>	<p><u>Occasionally you work through, but you are also easily distracted.</u> You have not done a lot of work and you do not always use the time efficiently.</p>	<p><u>You work hard enough. You are motivated and you make sufficient use of the time.</u> You show that you can persevere even when things get tough.</p>	<p><u>You have excellent perseverance and really want to make it out of yourself.</u> You are not discouraged by a setback. You can work independently and you make full use of your time.</p>
<p>Did you really give everything you had? Or could you do more? Be critical and honest with yourself.</p>				
<p>Would you do it differently next time?</p>				

<p>PROGRESS Is there progress in your process? Are you on schedule?</p>	<p><u>You do not think ahead and do not plan.</u> You always ask your group or the teacher what you should do and do not look back critically at your work.</p>	<p><u>You do not yet carry out the different steps very consciously.</u> You don't think much about the process yet and your planning doesn't always run smoothly.</p>	<p><u>You do think about the different steps and can use them to steer your process.</u> You look ahead from time to time and adjust your planning if necessary</p>	<p><u>You are always thinking ahead about the steps you want to take and you are therefore able to make adjustments.</u> You are running on schedule.</p>
<p>How did you make a planning and did you take this planning with you every lesson? What do you do when things don't go according to the planning? Did you discuss with your group what you were going to do that day?</p>				
<p>Would you do it differently next time?</p>				

Three things I have learned in this project are:

- 1.
- 2.
- 3.

Three things I found difficult in the project are:

- 1.
- 2.
- 3.

Three things I want to do differently next time are:

- 1.
- 2.
- 3.

What grade do I give myself for this project?

Please explain your grade:

PART 2: Reflecting on your team

Fill in this chart. Distribute 4 points (if you are in a team of 4) or 3 points (if you are in a team of 3) to all team members. You may also give 0 points to a team member. The more points a team member gets, the greater his/her impact on the project has been in that area.

Names	My name:	Name of team member 2:	Name of team member 3:	Name of team member 4:
COOPERATING				
How many points does he/she earn in the share about making decisions for the team?				
How many points does he/she earn for giving <u>constructive</u> criticism to each other?				
PROJECTMATIC				
How many points does he/she earn for performing his/her task most efficiently?				
Who deserves which points when you look at who has made the most progress in terms of process during the project?				
Who is best at planning in the team?				
Which of you can best present the team?				
Who can work most neatly?				
Who is best at ICT and can handle computers best?				

Who is best placed to find relevant information for the study?				
Which of you is most focused on reading and following the assignments on It's?				
Which of you is most focused on the end product?				
CREATIVE				
Who is the most creative of the team?				
Total				

Annex 3: De four modules and 20 themes of Gaia YES

WORLDVIEW & LOCAL WISDOM MODULES

Worldview & Story-telling
Who am I? Learning to know oneself
Planetary & Personal Health
World View & Language
Connection to Nature

SOCIAL MODULES

Communication & Social Skills
Leadership & Empowerment
Building Community & Embracing Diversity
Heritage & Local Wisdom
Education & Social Transformation

ECOLOGY MODULES

Whole Systems Approach to Regenerative Design
Affordable Clean Energy
Water Systems
Local Food Systems
Green Building & Retrofitting

ECONOMIC MODULES

Shifting Global Economy towards Sustainability & Regeneration
Community Banks & Currencies
Right Livelihood
Revitalising Local Economies & Social Innovation
Legal & Financial Issues

Annex 4: Overview proposal R&D projects (linked to 'Blink World' method)

	Title (annex 10)	Intro	Research	Adopted draft	Sustainable perspective	SDG (annex 8)	GAIA themes (annex 9)	N&W themes (annex 6)
1	Wow the world <i>Learning from nature</i>	Introduction biomimicry. Learning from nature.	Everything is technology Learning from nature Back to nature Design thinking	Design an aeroplane using techniques copied from nature that flies the furthest in a flying contest.	Reconnecting with nature; cosmic path, vision quest. Integral system design; marshmallow challenge	9,11,15	2, 3, 15	1,2,3,4, 6,7
2	Real Netherlands <i>Region gift</i>	Local	What is valuable? Sustainable economy Your bioregion Durable packaging	In a group of 4, design a sustainable and fair local gift to sell at a Christmas market and organise a Christmas stall with your class to sell these gifts.	Conscious livelihood; responsible living, happiness economy. Conscious living: valuable. Sustainable economy; can it be different? Banks and money; fair is fair, barter game.	1,2,3,10,12	4,6,7,8,10, 19	1,2,3,4,7,8,9
3	A place of its own <i>Sustainable village</i>	Living in an eco-village	A place to live Systems in a house Self-sufficient living The shared environment	In a group of 2, design an ideal and self-sufficient house with garden which fits within the sustainable village of the class. Make an exhibition of this,	Sustainable building and renovation: building with clay. Community building. Group dynamics and decision-making: square, decision tree.	3,6,7,8,9,13	5,10,12, 13, 15, 16, 17,	1,2,3,4,5,6,7,8

4	Great experiments <i>Everyone is participating!</i>	Paralympic Games	Unique performance Your talent Know your body Everyone participates	In a group of 4, design a tool to enhance a sports or physical performance. Present to your class.	Personal and planetary health: healing nature and yourself. Health risks, our culture and environment. Consciousness: a world of difference.	3,8,15	2,13,18	1,2,3,4,5,6,
5	Distant world trips <i>The marcher</i>	1 planet Earth	There is only 1 planet Earth Plants on Mars Growing food in space Healthy meal	In a group of 3, design a full and healthy marsburger for astronauts living on mars. Organise a taste test.	Appropriate technology: water collection and reuse, renewable energy and transport. Local food: the food cycle.	3,9,11,13,14,15,16	1,4,9,11,13,14	1,2,3,4,5,6,7,8,9,10

	Title (annex 10)	Intro	Research	Adopted draft	Sustainable perspective	SDG (annex 8)	GAIA themes (annex 9)	N&W themes (annex 6)
6	Family stories <i>Living earth</i>	Earth as a living system, special plant and animal families	Earth system Plant and animal kingdom Circuits Free Zoo	Design in a tool you can use to increase biodiversity around your school.	Restorative worldview: the source, connection web. Urban and nature restoration: going for a green city.	3,4,5,10,11,16,17	1, 4, 5,12,14 15	1.2.3.4., 7, 9,

7	Living and surviving <i>Climate adaptive</i>	Climate change	The weather machine Living water Climate adaptation in cities Climate change in the Netherlands	In a group of 5, design a floating plant island for your own town or village. Create an educational information board for primary school children for this purpose.	Urban and nature restoration: the sustainability meter. Appropriate technology: water collection and reuse. Community building: voice of youth.	13,14, 15,16	1, 2, 4, 5, 9, 11, 13,14, 15	1,2,3,4, 5,6,7,8, 9
8	Smart communication <i>The Code</i>	The nautilus	Climate actions and protest art The code (golden ratio) A good pitch Interactive technology	Design interactive protest art incorporating 'the code'	Art and social transformation : protest art. Leadership and privilege: discover your power, without violence. Socially engaged: spiritual activism.	13, 16,17	17,18, 19,20	1,2,3,4, 5,7,9
9	Worldly issues <i>Biofuel</i>	The Amazon burns	Fossil and biofuels Caps with caps Reduce carbon footprint Planting trees	Design a plan to reduce CO2 emissions caused by fossil fuel use in your school, village or town.	Sustainable economy: can it be different, towards a more sustainable global economy. Legal and financial: your commitment. Effective networking: group role.	8,9,10, 13, 15	6, 10, 13, 15, 20	1,2,3,4, 5,7,9,

10	A green world <i>The green team</i>	Green heroes	Sustainable global economy Corporate social responsibility Integrated entrepreneurship Investment plan	Design an integral sustainable design for a local business.	Legal and financial: Village of boxes. Where do your talents lie? What do you enjoy doing? Your contribution.	11, 13,14, 15,,16, 17	1 to 20	1,2,3,4, 7,9
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Annex 5: Technical aspects integrated R&D projects

	Title	Intro	Technical aspects
1	Wow the world <i>Learning from nature</i>	Introduction biomimicry Learning from nature.	What is technology? Science & technology Biomimicry Design thinking, inventing, inventing new products Forces Materials
2	Real Netherlands <i>Region gift</i>	Local	Material knowledge Constructions Design thinking Materials from nature Sustainability
3	A place of its own <i>Sustainable village</i>	Living in an eco-village	Construction Working to scale, drawing and reading Constructions Energy Systems Design thinking Extraction, production and processing
4	Great experiments <i>Everyone is participating!</i>	Para-Olympics	Lever Forces Transmissions Design thinking Relationships between organisms
5	Far-world travel <i>The marcher</i>	1 planet Earth	Energy Systems Universe & celestial bodies Water, water supply Transport Food Design thinking Health

	Title	Intro	Technical aspects
6	Family stories <i>Living earth</i>	Earth as a living system, special plant and animal families	Earth Materials, constructions Production processes Living environment & biodiversity Design thinking Relationships and conservation of organisms
7	Living and surviving <i>Climate adaptive</i>	Climate change	Energy, Weather and climate Constructions Transmissions Material knowledge Design thinking Living environment & biodiversity
8	Smart communication <i>The Code</i>	The nautilus	Robotics Communications Automatic systems Design thinking Signal processing Waves and radiation
9	Worldly issues <i>Biofuel</i>	The Amazon burns	Energy Materials from nature Transport Systems Design thinking Substances and reactions
10	A green world <i>The green team</i>	Green heroes	All technical aspects within a company Design thinking Extraction, production and processing

Annex 6: Description learning area Man and Nature of the new curriculum in the Netherlands

1. Nature of natural science. Science (1.1.) Technology (1.2.)
2. Social issues. Health (2.1) Sustainability (2.2)
3. Methods of working. Investigate (3.1) Design (3.2) Model use and design (3.3) Practical action (3.4)
4. Ways of thinking. Patterns (4.1) Systems (4.2) Scale, proportion and quantity (4.3) Effect and cause (4.4) Purpose and means (4.5)
5. Signals and information. Waves and radiation (5.1) Signal processing in the organism (5.2), Automatic systems (5.3)
6. Energy and interaction. Force (6.1) energy (6.2) food (6.3)
7. Survival of organisms. Conservation of an organism (7.1) Relationships between organisms (7.2) Living environment and biodiversity (7.3)
8. Natural raw materials and materials. Substances and reactions (8.1) Extraction, production and processing (8.2)
9. Earth and climate. Earth (9.1) Weather and climate (9.2) Environment and biodiversity (9.3) 10. Universe and time. Universe, origin and heavenly bodies (10.1) Time and rhythms (10.2)

Annex 7: Description of concept building blocks matching the sustainability perspective of the new curriculum's Man and Nature subject area in the Netherlands

1. (BS3.1) Learning area Exercise and sport. Concept building block **Healthy exercise.**
2. (BU04) Learning Area Citizenship. Concept building block **Identity.**
3. (BU05) Curriculum Area Citizenship. Concept building block **Diversity.**
4. (BU09) Curriculum area Citizenship. Concept building block **Globalisation.**
5. (MM04.1) Learning area Man and Society. Concept building block **Welfare.**
6. (MNO 2.2) Learning area Man and Nature. Perspective **Sustainability.**
7. (BU08) Learning area Citizenship. Concept building block **Sustainability.**
8. (DG7.1) Learning area Digital literacy. Concept building block **Apply and design.**
9. (DG8.1) Learning area Digital literacy. Concept building block **Sustainability.**
10. (MM09.1) Learning area Man and Society. Concept building block **Sustainable development.**
11. (MM11.3) Learning area Man and Society. Concept building block **Thinking from yourself and from others.**
12. (MM11.6) Learning area Man and Society. Concept building block **Thinking from choices and responsibilities.**
13. (MM12.3) Learning area Man and Society. Concept building block **Appreciate, reason and argue (method).**

Annex 8: The 17 Sustainable Development Goals UN (SDGs; sustainable development goals)

1. No poverty
2. No hunger
3. Good health and well-being
4. Good education for all
5. Gender equality
6. Clean water and sanitation
7. Affordable renewable energy
8. Fair work and economic growth

9. Sustainable industry, innovation and infrastructure
10. Reducing inequality
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate Action
14. Life in water
15. Life in the country
16. Peace, security and strong public services
17. Partnership for achieving sustainable goals

More information: <https://www.sdgnerland.nl/>

Annex 9: The 20 educational sustainability themes GAIA Education

1. Restorative worldview
2. Reconnecting with nature
3. Consciousness
4. Personal and planetary health
5. Socially engaged
6. Sustainable global economy
7. Banks and money
8. Conscious livelihood
9. Local economy
10. Legal and financial
11. Local food
12. Sustainable construction and renovation
13. Appropriate sustainable technology
14. Urban and natural regeneration
15. Integral system design
16. Community building and participation
17. Group dynamics and decision-making
18. Leadership and privileges
19. Art and social transformation
20. Effective networking

More information:

<https://www.gaiaeducation.org/elearning-programmes/design-for-sustainability/>

<https://gaia-nederland.nl/schools/duurzaamheidskompas/>

Annex 10: The ten themes of 'Blink world'

1. WOW the World
2. Real Netherlands
3. A place of its own
4. Great experiments
5. Distant world trips
6. Family stories
7. Living and surviving
8. Smart communication
9. Worldly issues
10. A green world

More information: <https://blink.nl>

Annex 11: Overview Gaia YES themes and stories

1 WORLD VIEW

1.1 Worldview & Stories

- 1.1.1 The drowned village of Beulake
- 1.1.2 Voice of the Earth
- 1.1.3 Talking mushrooms

1.2 Who am I?

- 1.2.1 Frida Kahlo
- 1.2.2 Between two worlds
- 1.2.3 Seven natural principles

1.3 Health of yourself and the earth

- 1.3.1 A healthy foundation
- 1.3.2 Happiness under pressure
- 1.3.3 Food aid for young people
- 1.3.4 Survival in nature

1.4 Worldview & Language

- 1.4.1 Language is more than communication
- 1.4.2 Speaking without words
- 1.4.3 Plat proaten

1.5 Connecting with nature

- 1.5.1 At home in the forest
- 1.5.2 Tiny forests
- 1.5.3 Too much nitrogen: the limits have been reached!

2 SOCIAL

2.1 Communication & Social skills

- 2.1.1 Managing group processes
- 2.1.2 Green streets... or not?
- 2.1.3 Media (un)wisdom

2.2 Leadership & Talent

- 2.2.1 Vincent's life's work
- 2.2.2 Listening leadership
- 2.2.3 The man who planted trees
- 2.2.4 The (too) crazy dancer

2.3 Community & Diversity

- 2.3.1 Neighbourhood in ecovillage Zuiderveld
- 2.3.2 Dream circle
- 2.3.3 Aligning with each other

2.4 Heritage and Local Wisdom

- 2.4.1 Midwinter at Stonehenge
- 2.4.2 Wind of changes
- 2.4.3 A good ancestor

2.5 Education and Social Transformation

- 2.5.1 Skyscraper (plastic whale)
- 2.5.2 Iederwijs
- 2.5.3 Climate march

2.5.4 Furniture with a story

3 ECOLOGY

3.1 Integrated System Design

- 3.1.1 School roof vegetable garden
- 3.1.2 Our hectare party
- 3.1.3 From rich soil to poor soil

3.2 Energy

- 3.2.1 Livable cities and smart mobility
- 3.2.2 Sea salt batteries: simple and friendly
- 3.2.3 Preferably by car

3.3 Water

- 3.3.1 Tile out, plant in
- 3.3.2 Like a toilet without water and sandwich poo
- 3.3.3 Shower timer
- 3.4 Food
- 3.4.1 The 2050 diet
- 3.4.2 Preventing food waste
- 3.4.3 Saving seeds
- 3.4.4 Preserve the future

3.5 Climate-proof building & renovation

- 3.5.1 Operation Stonebreaking
- 3.5.2 Living village
- 3.5.3 Where can I live?

4. ECONOMY

4.1 Sustainable World Economy

- 4.1.1 Made for life
- 4.1.2 A smartphone
- 4.1.3 How do I stay out of the rat race?

4.2 Banks & Currency systems

- 4.2.1 LETS
- 4.2.2 NFT opens a new digital world
- 4.2.3 Geconomie or give-economy

4.3 Conscious livelihood

- 4.3.1 The healthy school
- 4.3.2 Dreams of a (plastic)free life
- 4.3.3 Off-grid

4.4 Local Economy & Social Innovation

- 4.4.1 The Countercurrent
- 4.4.2 From waste to value
- 4.4.3 Gardening for the food bank

4.5 Legal and financial

- 4.5.1 The earth belongs to itself
- 4.5.2 From conventional to organic farming
- 4.5.3 Adopt a sheep

Annex 12: Table Gaia Education certification requirements

Curriculum	Description
⇒ All five dimensions of sustainability cover the curriculum	There is a school-wide focus on sustainability in which the ecological, social, economic, cultural and spatial aspects are equally integrated.
⇒ In line with the SDGs	All 17 sustainable goals set by the UN are integrated into the school-wide curriculum.
⇒ Developing SDG competences.	All teachers in the teaching team have knowledge and skills related to the 17 SDGs.
⇒ Training of teachers	Within the teaching team, at least four teachers have been trained by Gaia Education and possess knowledge and skills related to the Gaia curriculum (EDE, GEDS or TOT training).
⇒ Integration of GAIA into curricular (and extracurricular) activities of different subjects	Learning for sustainable development is provided through cross-curricular education and in extracurricular projects carried out by teachers of different subjects.
⇒ Constructive teamwork	Within the school organisation, time is set aside for joint meetings to coordinate and prepare, evaluate and improve cross-curricular learning for sustainable development, also involving students.
⇒ Specialised courses in SDG skills, such as permaculture gardening	Within the school organisation, all teachers regularly attend refresher courses on special SDG skills such as permaculture gardening.
Pedagogical principles	
⇒ Transformative learning	Within learning for sustainable development, there is a focus on improving students' communication skills and also on instrumental task- or problem-based learning. Students are given the task to identify the cause-effect relationship of certain events or cases. Students learn to think critically about their own experiences which can lead to perspective transformation.
⇒ Self-directed learning	The learning tasks for self-directed learning for sustainable development comply with the following characteristics: <ul style="list-style-type: none"> - Students learn to set their own learning goals and activities for each lesson component; - It responds to what students already know or have read; - During the 'pre-thinking' phase, learning skills that students need to carry out the learning task are addressed; - Students think about their own learning; - Students are made aware of their own judgement and possible other perspectives; - students are offered points of departure for improving their own actions - Students experience the relevance of a particular learning task;

	- Students learn how to arrange their time so that they can manage their own learning.
⇒ Integrative transdisciplinary learning	<p>Learning for Sustainable Development focuses on developing the 21st century skills; creative thinking, problem solving, critical thinking and collaboration for students. The subject matter of the learning materials is at the intersection of sustainability and various subjects such as art, technology and science.</p> <p>The teaching material is transdisciplinary. Students develop skills in creativity, critical thinking, problem solving and cooperation. Students work on a complex and complete task. The topic is a contemporary, hybrid (in terms of discipline) and real-life problem. Students conduct research as part of the complex task. There is room for discussion and vision creation; students are challenged to take a (social) standpoint.</p>
Didactic methods	
⇒ Project-based learning	<p>Learning for Sustainable Development is offered through Project Based Learning. Project Based Learning meets the Gold Standard PBL model. Each project is structured in the same way. The teacher varies the assignments and lessons. The teacher runs through a fixed pattern of actions, lessons or events:</p> <ul style="list-style-type: none"> ● The starting point ● What do we know? ● What we will do ● What do you want to learn ● Investigate and discover ● Processing ● Closure
⇒ Learning in teams	<p>Learning for sustainable development takes place in learning teams.</p> <ol style="list-style-type: none"> 1. The team has a common task. 2. The team has a correspondingly complete and logically coherent set of (executive) tasks. 3. The team is not too big and has a fixed composition if possible. 4. The team has the control possibilities needed to fulfil its responsibilities independently. 5. The functioning of the team is supported and monitored by a team leader or team of team leaders. 6. The management and control system is in line with the team responsibility.
⇒ Teaching in teams	<p>Teachers and supervisors in an education team are collectively responsible for all pupils of a particular grade, department or profile, there is learning cooperation between them, and teachers have wide powers. The organisational structure is described, everyone knows the organisation chart. Team leaders are trained in process-oriented team leadership. Education teams meet frequently, focus on result improvement, among other things through intervision. HRM-policy is aimed at team building (among other things, team performance interviews and training for team leaders).</p> <p>The task of a school leader is to create, maintain and 'use' the team structure. The most important decision-making (on educational matters) is done in the teams. Congruence between working methods in teams, MT (team leaders plus school leader), executive board, etc. Expert teams are responsible for the continuous learning line, subject expertise of</p>

	<p>colleagues and flourishing of the subject within the school. There is a connection with external expertise. Working to increase the expertise of colleagues through refresher courses.</p>
⇒ Hands-on learning	<p>School-based knowledge can be used to solve practical problems or to bring about innovation. We also call this 'transfer' from theory to practice.</p> <p><i>Practical knowledge</i> is knowledge gained through experience, sometimes translated as 'fingerspitzengefühl', 'tacit knowledge'. This type of knowledge is of great importance in practice-based learning.</p> <p>This learning area works on the transfer of theory to practice. This includes translating problems and innovations from practice into learning situations. This can be done through internships, through practical simulations at school and by involving issues from society in Research and Design education in subjects such as Science and the Technasium.</p>
Outreach	
⇒ Local community projects	<p>The education links up with local community projects: these are projects that create a positive impact for the community. Such as projects with a sustainability focus, local initiatives that promote fair and circular economy, solidarity projects and cultural initiatives. In this learning area, this can be done through intense cooperation between the organisation, the school or the young people themselves with local community projects. The young people are an important part in the organisation and implementation of the community project.</p>
⇒ Volunteer projects	<p>Young people work together with a network of national or international volunteers and the local population. In doing so, they help others while young people themselves grow as individuals.</p> <p>In this learning area, this can be done, for example, through intense cooperation between the organisation, the school or the young people themselves and voluntary projects. The young people are an important part of the organisation and implementation of the voluntary project.</p>
⇒ Regenerative environmental projects	<p>Transformative innovation stimulates environmental projects in the face of converging crises. In this learning area, young people provide advice in the design of regenerative systems. regenerative leadership and education for regenerative development and bioregional regeneration within their own organisation or school, in local projects or for local organisations.</p>
⇒ Bioregional and international partnerships	<p>Establishing bioregional and international partnerships and including them in education. Bioregional in this context means beyond national borders and with a view to strengthening ties within a particular bioregion.</p>
Environmental impact	
⇒ Ecological and carbon footprint, including travel	<p>Efforts to keep the ecological carbon footprint, including travel, of the organisation or school as low as possible. In this learning area, the carbon footprint of the school or organisation is kept as low as possible by a variety of actions that reduce the carbon footprint. This includes travel to and from the organisation or school.</p>

⇒ Impact on water cycles	Efforts to keep the ecological water footprint of the organisation or school as low as possible. In this learning area, the ecological water footprint of the school or organisation is kept as low as possible by various actions that reduce the ecological water footprint.
⇒ Effect on material cycles	Efforts to keep the waste streams of the organisation or school as low as possible, with a focus on reuse and recycling of materials. In this learning area, residual waste from the school or organisation is kept as low as possible and other waste streams are separated as much as possible and reused or recycled through all kinds of actions that contribute to this.
⇒ Impact on agro-ecosystems	Efforts to keep the organisation's or school's impact on agro systems as low as possible, with a focus on sustainable purchasing, composting waste streams and preventing waste. In this learning area, the impact of the organisation or school on agro ecosystems is kept as low as possible by all kinds of actions that contribute to this.
Honesty & well-being	
⇒ No discrimination	<p>In a socially safe school, everyone participates and has a sense of belonging. The school guide describes the discrimination policy and the bullying protocol. GAIA Education Code of Conduct can help with this. Step-by-step plan in case of violation:</p> <ol style="list-style-type: none"> 1. Conversation with the supervisor/teacher 2. Conversation with the director 3. Conversation with parents 4. Suspension 5. Remove <p>A record of each conversation is made and signed.</p>
⇒ Fair admissions (including a blind-needs procedure)	The UN Convention on Disability states that the government must provide an inclusive education system at all levels. That is a system that is set up in such a way that all children can participate in education. Schools are responsible for placing pupils who need (extra) support. Discrimination in access to education is prohibited. This is laid down in the Act on Equal Treatment on the grounds of Disability or Chronic Illness (WGBH/CZ). The law applies to all forms of education. The prohibition applies to physical, psychological and mental disabilities. A school therefore has a duty of care. For example, a school can provide a quiet workplace for pupils with a concentration disorder or reading software for a pupil with dyslexia. And for pupils who use a wheelchair, it is nice to have classes on the ground floor.
⇒ Fair working conditions and remuneration for all staff	<p>Education is provided in a healthy school building with well-ventilated classrooms, heating and cooling, clean drinking water, clean toilets, enough space for everyone, a diversity of work space, green outdoor areas and a nice appearance.</p> <p>The staff are rewarded according to value. Regular discussions take place to evaluate working conditions and remuneration.</p>
⇒ Attention to holistic well-being	A holistic experience of wellbeing takes care of all the components that make us whole. So a holistic view of our well being includes exercise, emotional nurturing, mental stimulation and nurturing our spirituality and includes incorporating a range of self-care practices that support us. For example, in the organisation or school, space can be made for morning meditation, walking together, exercising together, quiet room, healthy canteen, etc.

