

Make your school circular

Geo Circle method @ school

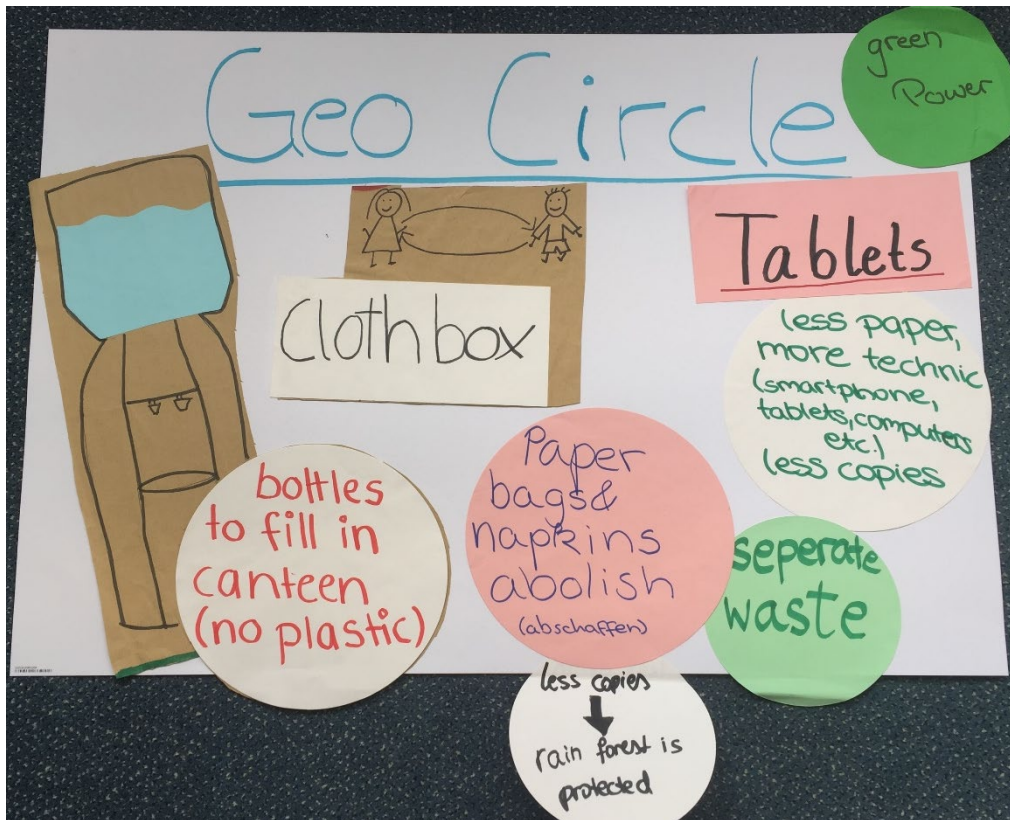
Introduction

In the Erasmus+-project Geo Circle (2017-2020) eight schools for secondary education worked together and also in their region in sustainability projects about circular economy. On a regional level clients from the circular economy sector provided real life assignments for the students in various Geo Circle projects. Internationally, the students from schools in Germany, the Netherlands and Czech Republic supported each other in finding solutions for these challenges/problems.

This brochure describes a range of possible topics related to circular economy that you can use in school projects. To do a circular economy project focussed on your own school is an easy way to start implementing the Geo Circle method (see below). The question or assignment is: 'how can you make your own school sustainable/circular'. The client for this project can be your school director (principal).

The great advantage of such a Geo Circle project is, that the pupils/students investigate their school, provide circular solutions and can monitor (first hand!) if changes are made. This project also gives teachers the opportunity to discuss with their students the behavioural side of circular economy ('what can you personally contribute to create a circular economy?').

Another advantage is that a Geo Circle project in your school will be visible for all other students and for all teachers and school staff. In this way, one group of students can act as a good example for many others.



Geo Circle method

A very rewarding way to involve young people in sustainability is to carry out school projects in secondary schools. An innovative and flexible way is using the Geo Circle method, created during the Erasmus+ Geo Circle project (2017-2020) (see: Geo Circle Handbook).

In short, students do a school project working on an assignment of a real client. Often a regional network of businesses, governments or organizations act as a client. In case the assignment is about finding sustainable solutions for your own school, the client can be the school director (or principal). It is crucial that the client is not the usual teacher, but a person with a serious interest in the work of the students and who can implement their ideas. A real client also will stimulate and motivate the students to come up with their best ideas and solutions. For students these kind of projects encourage them to explore and develop other talents than usual.

At the start of the project the school director will hand out the assignment to the students: 'please, help me make our school more sustainable or circular'. Most assignments have more specific sub-questions, like focussing on reducing energy or establishing a more healthy canteen or creating a greener schoolyard. You'll find a list of possible assignments below.

The students then start investigating the question. This will be done by internet research, asking data on the school director or your facility manager, interviewing (external) experts and/or going on excursions to visit good examples. They discuss all their new found knowledge and prepare their presentation. At the end of the project they present their results and solutions to the school director, who will tell them what will be done with their proposals.

A bonus for a Geo Circle project in your school is that it is easy to monitor the implementation of the project outcomes. This can be done by the same students, or even the same class in the next school year (as a follow-up project).

Examples GC projects

In the period 2017-2020 all Geo Circle schools have carried out several Geo Circle projects. Some of them had their school director as client, others had an external client. In the Netherlands IVN has organized many more school projects – using the Geo Circle method – with other secondary schools. This has resulted in an extensive list of examples for projects you can carry out in your own school. Please use this list as an inspiration and adjust the topic and assignment to your own specific situation. All examples below can be combined also, depending on the project period (few days, week, month or even longer) and the number of students involved (small group, one class or many more). The Geo Circle method is very flexible and surely can be used in your school.

Paper

Even if the (school) world becomes more and more digital, each school still uses a lot of paper. It is used for administration, agenda's, student readers, notebooks, summaries and to write down your exam answers. Also a huge amount of pens, pencils and other stationary items is used.

Probably not all of these items can be replaced in a circular way, but students can come up with creative solutions based on their own experiences.

The **assignment question** can be: 'Find out how much paper and stationary items are used in our school and why. Present several circular solutions for paper and stationary items. Estimate the budget costs or benefits of your solutions. Describe how your solutions can be implemented.'

An extra **assignment question** can be: 'communicate your solutions to all other students in your school. Choose your own means of communication (poster, presentation, school website, etc).'

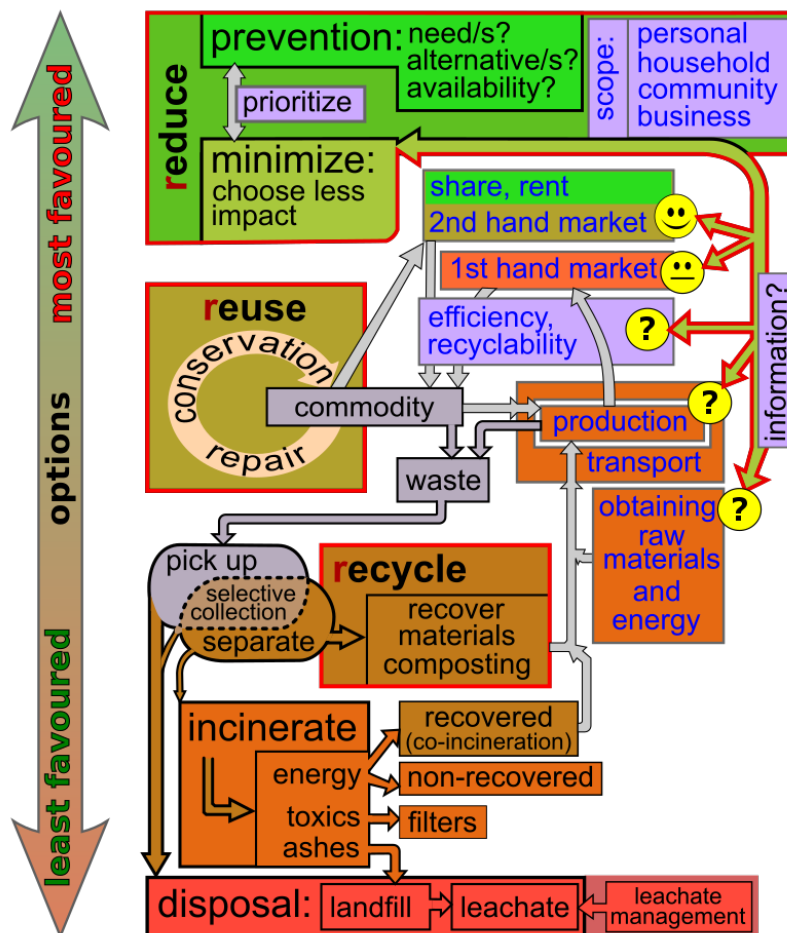
Some examples of student ideas from recent projects:

- Change the settings on the copier (duplicator) to standard two-sided instead of one-sided
- Provide students with their own specific notebook for exams instead of separate paper sheets
- Use your digital school system (better) to upload documents for students and provide each student with a laptop
- Organize digital courses for teachers to use the digital system better
- Separate your paper waste in every class room and have it separately collected

Waste management

Schools will have another waste management system than a regular household. Many students will not realise this. The Geo Circle project learned that in different countries schools are confronted with different rules (depending on national or local regulations). But all European countries have a goal to reduce their waste and become a circular economy in the next decades.

Good waste management starts with the introduction of the so-called life-cycle of a product. The life-cycle begins with design, then proceeds through manufacture, distribution, and primary use and then follows through the waste hierarchy's stages of reduce, reuse and recycle. Knowledge of all these stages is important when you want to become circular. When you talk about waste you also talk about the purchase of goods. For instance, you can buy single-use cups for your canteen or reusable ones. Reusable cups will cost more, but last longer. This is a perfect example of a complex discussion, because reusable cups have to be collected and cleaned after use; this takes time and energy/water. Which solution is best?



One of many schemes of the 'waste hierarchy' (source: Wikipedia)

The **assignment question** can be: 'Find out how the waste management is organized in our school and how much waste we produce each week. Choose a few items that are used a lot in our school and find several circular solutions for these items. Estimate the budget costs or benefits of your solutions. Describe how your solutions can be implemented.'

An extra **assignment question** can be: 'communicate your solutions to all other students and teachers in your school. Choose your own means of communication (poster presentation, school website, lecture, etc).'

Some examples of student ideas from recent projects:

- Separate your paper waste in every class room and have it separately collected (and all other paper waste examples (see above)
- Refill permanent markers [<follow this link>](#)
- Ask the school suppliers to reduce the amount of packing materials (mainly plastic!)
- Organize a waste awareness campaign for teachers and students

Sustainable canteen

In a project about school canteens the focus of a school project can be on the products used in the canteen or on the students' health, or both.

Canteens in secondary schools all over Europe can be very different. Some provide school meals for every student, others only for students who choose to eat at school. And in other schools students eat their own food in the canteen; there are no meals provided, only drinks.

Nevertheless, the school canteen is a perfect spot to make it more sustainable or circular. The production of the provided meals can be investigated and improved in terms of sustainability. A circular approach could be to look for products from local suppliers. In this way, food transport is reduced and your local economy is supported.

In school canteens without meals, there will always be drinks provided. And the school project can also focus on the food students bring themselves, in combination with health issues.

The **assignment question** can be: 'Find out how your school canteen meals are made and which products are used. Do they prepare enough food (or too much)? Where does the food come from? Find several circular solutions for your school canteen. Estimate the budget costs or benefits of your solutions. Describe how your solutions can be implemented.'

An extra **assignment question** can be: 'communicate your solutions to all other students in your school. Choose your own means of communication (poster, presentation, school website, etc).'

Some examples of student ideas from last years' projects:

- Introduce a (digital) registration system for canteen users, so the staff can provide just enough meals
- Limit the food portions on each plate and give the opportunity to refill
- Grow your own lettuce in a aquaponics system [<follow this link>](#)
- Employ your own school goats which can eat all organic waste [<follow this link>](#)
- Provide reusable drinking cups
- Demand more sustainable content of your vending machines [<follow this link>](#)
- Provide every new student with a water bottle which can be refilled [<follow this link>](#)
- Create a student working group to support the canteen kitchen staff to create awareness
- Promote the use of local and organic food suppliers
- Organize a healthy and sustainable food campaign for students ([see extra Geo Circle school Dokkum - video in Dutch](#))



Energy

School buildings use a lot of energy, in most cases produced with fossil fuels (oil, gas). To fight climate change it is important for all of us to reduce our use of these fossil fuels. In all schools there are possibilities for energy reduction.

For a household this normally implicates also a reduced energy bill. You can save money by investing in energy reduction. For schools, this can be a different matter. It depends on, who is paying the energy bill for the school. In some European countries schools have their own energy budget. In other countries the bill is paid by your government. And sometimes there are other agreements. Therefore, it is not always the case that saving energy will benefit the school budget. But fighting climate change should be enough reason to start saving energy.

The **assignment question** can be: 'Find out how much energy your school is using each year and which provider the school has. Does your school benefit from energy saving (budget)? Can your school make use of extra government funding for energy saving? Find several circular solutions for the energy use of your school. Estimate the budget costs or benefits of your solutions. Describe how your solutions can be implemented.'

An extra **assignment question** can be: 'communicate your solutions to all other students in your school. Choose your own means of communication (poster, presentation, school website, etc).'

Some examples of student ideas from recent projects:

- Install solar panels on your school roof
- Replace all light bulbs by led-lights (in one go or step-by-step)
- Invest in low-energy devices (computers, copiers, etc)
- Choose a provider of green energy
- Place detectors in every class room which shut off the light automatically when the room is not in use
- Make the heating system better adjustable (many class rooms are too hot or too cold)

Water

Water in schools is used in the bathrooms, as drinking water, for cleaning and in the school kitchen. Also due to climate change, good quality drinking water can become less available in the future. It is good to be aware of our water consumption and a school project can contribute to a greater awareness.

The **assignment question** can be: 'Find out how much water your school is using each year. Does your school benefit from water saving (budget)? Can your school make use of extra government funding for water saving? Find several circular solutions for your school. Estimate the budget costs or benefits of your solutions. Describe how your solutions can be implemented.'

An extra **assignment question** can be: 'communicate your solutions to all other students in your school. Choose your own means of communication (poster, presentation, school website, etc).'

Some examples of student ideas from recent projects:

- Install self-stopping water taps in all bathrooms
- Provide an aerator at the tip of each water tap to limit water flow and introduce air in the form of bubbles to reduce splashing
- Provide every new student with a water bottle which can be refilled [<follow this link>](#)
- Place enough drinking water taps in your canteen and in other places (also helps to reduce the consumption of soft drinks!)

School building

Secondary schools in Europe have many different buildings: recent, old, ancient, newly-build, renovated. It is understandable that not every school can get a new, modern building very quickly. So, in every school building there will be possibilities to implement sustainable – or even circular - solutions.

If there are plans for a new building or a renovation of your school, this is an excellent opportunity to involve students in the planning. Consult them about certain aspects, such as the use of colours, school furniture, the set-up of your canteen, etc. A school project with the Geo Circle method is perfect to involve your students in your plans.

But also all existing buildings can be improved. Energy and water are always interesting topics for a project (see above). And an investigation into isolation of your building will provide your students with valuable knowledge (for their own house in the future).

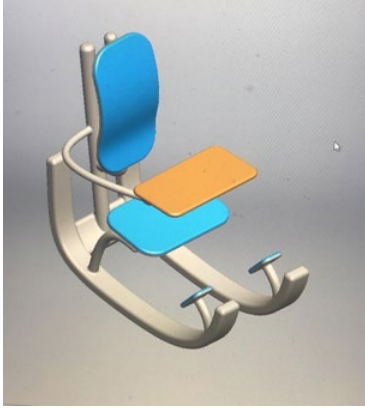
An **assignment question** can be: 'Design your future school building; this building must be energy-neutral. Use circular materials for your new school building. Make a model of your design and provide a detailed report of your building'

This kind of assignments can be used in schools with focus on technical and design subjects. A guest lecture of an architect can be a valuable addition for your project.

School furniture

A specific topic is school furniture. All furniture in your school has to last for many years. Therefore, the tables and chairs are built in a robust way. Most furniture today is a mix of materials: wood, metal and plastic parts, held together with screws and rivets. If you look closer, the wooden parts are often laminated and mixed with glue. This means that your school chair cannot be reused in a circular way properly.

The **assignment question** for school furniture can be: 'Find out if your school furniture can be repaired or used in a circular way. How much furniture is replaced by your school each year? Are there providers of circular school furniture in your country (or in Europe)? Design your own furniture item and make a model. Provide a detailed report of your design. Estimate the budget costs or benefits of your furniture item.' This kind of assignments can also be used in schools with focus on technical and design subjects. See the rapport of the extra Geo Circle school Praedinius Groningen (in Dutch) in the Appendix.



School surroundings

The surroundings of your school (school yard) can also become more sustainable and circular. Many school yards are paved with bricks, concrete or asphalt. Easy to maintain, but not very inspiring. Scientific research in recent years finds that (young) people benefit from a greener environment. Their production and learning capacities are higher compared to a more 'stony' environment (see Appendix 'IVN study by Mark Mieras').

If your school decides to make the school yard more green or wants to adjust it in another way, you can use a school project to involve students in this change. They can help designing the school yard (or a specific part of it). It can become a wild flower meadow, a vegetable garden, a bee garden, a tiny forest or an outside class room. When your school director agrees you can construct the garden of meadow together with your students.

The assignment question can be: 'Our school yard has too much concrete or bricks. We want a more green school yard. What possibilities can you think of and what would you prefer? Design your own wild flower meadow of garden? Make a model and provide a detailed report of your design.'

Some examples of student ideas from recent projects:

- Create a bee garden ([see Geo Circle school Baarn in cooperation with Neratovice](#))
- Plant your own Tiny Forest ([see Tiny Forest project Hoozevee – video in Dutch](#))
- Build your own outside class room ([see Geo Circle school Baarn](#))
- Establish a vegetable garden ([see Geo Circle school Hamburg](#))

Realisation

Of course, to realize all these ideas and solutions of the students there has to be a budget available. Before you organize your project, it is advisable to ask your school director if there is a budget for implementation. But you can also make an agreement, that next years' maintenance budget can be used for the project outcomes.

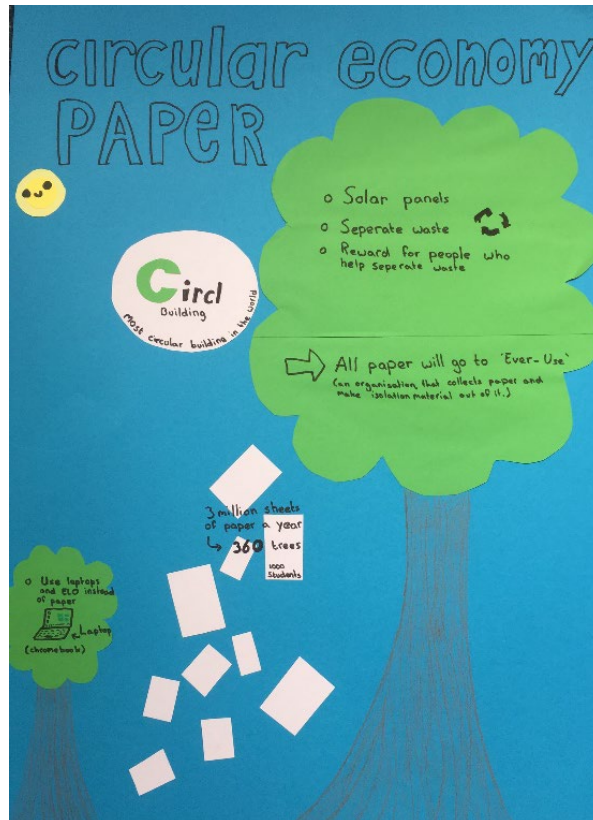
If a larger sum of money is involved – for instance to install solar panels on the school roof – the school budget will not be sufficient. Let your students pitch their plans at your local government. Maybe they can convince your local politicians to invest in a more sustainable school building.

Always, be honest to your students and tell them that they are consultants for the client. In the end the client will decide which solutions will be used. The main point is, that the client (school director) must seriously consider all the ideas of your students.

The Geo Circle method can be used in a very flexible way for school projects. Each school decides how long a project can last and how many students will be involved. And also the assignment can be adjusted to every school situation.

Conclusion

Involving students using the GC method is a great way to implement circular economy in your school. It is all about awareness! Your students will grow up in a world which will become more and more a circular economy. Conducting Geo Circle projects with your students is also investing in future citizens that are aware of the endless possibilities of circular economy



More information

Visit the Geo Circle website for more information and examples of school projects
www.geo-circle.eu

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Erasmus+

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